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Table D-1. Summary of Title Search Page 1 of 18

			Dates of Property	Type of
	sor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A		Tract A	6-11-30	Fee
		•	6-11-30	Fee
			1-30-35	Fee
	A High		6-7-35	Fee
	•		1-15-41	Fee
	i e		1-30-41	Fee
			12-6-43	Easement
	arta de		12-6-43	Easement
	1.		11-19-65	Fee
			12-27-66	Fee
	•		5-1-86	Fee
			8-4-86	Fee
	**************************************		3-30-93	Fee
N/A	4.	Tract 100	2-4-21	Fee
,	30	77451 100	4-20-25	Fee
	11.		3-18-26	Fee
		No. of the Control of	3-20-40	Fee
	•		11-13-40	Fee
			10-26-41	Fee
			4-3-42	Fee
			9-22-42	
				Fee
	•		5-20-46	Fee
	•		12-15-48	Fee
	* * * * * * * * * * * * * * * * * * *		12-28-55	Fee
	¥ .		7-5-56	Fee
		•	12-26-62	Fee
	•	•	7-23-63	Fee
			7-23-63	Fee
	V 7 00		7-5-56	Fee
	•		4-6-39	Fee
			1-21-39	Fee
•			2-7-52	Fee
			6-10-47	Fee
N/A		Tract A-101, Tract A-104, Tract	2-11-21	Fee
		B-126	2-11-21	Fee
	*		11-22-24	Fee
	•		12-19-25	Fee
			12-29-25	Fee
	•		5-15-24	Fee
			3-1-37	Fee
	4		3-1-37	Fee
			9-16-37	Fee
			9-17-47	Fee
			12-3-48	Fee
			3-20-51	Fee
			3-3-52	Fee

Table D-1. Summary of Title Search Page 2 of 18

		Dates of Property	Type of
Assessor's Par	cel Number Legal Description	Transfer ^(a)	Transfer
N/A	Tract A-102	2-11-21	Fee
		2-15-21	Fee
v.		2-8-24	Fee
		5-15-24	Fee
44.4		5-15-24	Fee
		6-5-25	Fee
		10-26-27	Fee
and the second		2-16-28	Fee
	74.	2-18-28	Fee
		2-20-28	Fee
		6-10-47	Fee
		3-27-51	Fee
		3-4-52	Fee
4, 4		3-27-51	Fee
N/A	Tract A-103, Tract B-128	7-5-06	Fee
		7-22-27	Fee
		4-6-39	Fee
		6-10-47	Fee
15 - 1		3-26-53	Fee
N/A	Tract B-101	3-19-21	Fee
4.4		5-7-28	Fee
• •		6-7-30	Fee
		9-12-44	Fee
		9-27-44	Fee
2.0		10-30-44	Fee
		11-2-44	Fee
		6-10-47	Fee
		3-11-48	Fee
		7-9-48	Fee
N/A	Tract B-102 and Tract B-103	2-5-31	Fee
14/7	Trace B Top and Trace B Top	2-13-31	Fee
		5-10-35	Fee
Age Agents		4-29-36	Fee
14.1 14.1		12-1-36	Fee
1		12-1-36	Fee
		12-1-36	Fee
		2-6-43	Fee
		7-22-46	Fee
		1-19-48	Fee
		3-2-48	Fee
		3-31-48	Fee
B1/A	Tract B-104	3-30-17	Fee
N/A	Trace b-104	11-9-29	Fee
		8-2-37	Fee
		8-6-37	Fee
		8-12-39	Fee
		6-10-47	Fee
	Edate obtained did not identify any grees of environments		

Table D-1. Summary of Title Search Page 3 of 18

		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract B-104 (Continued)	11-4-47	Fee
	•	1-7-48	Fee
N/A	Tract B-105	12-15-27	Fee
•	·.	7-18-33	Fee
		7-10-34	Fee
		7-10-34	Fee
•		2-3-43	Fee
		6-1-44	Fee
•		3 - 5-46	Fee
•		6-10-47	Fee
	•	2-27-48	Fee
4.1	4	3-31-48	Fee
N/A	Tract B-106	4-5-32	Fee
		4-23-36	Fee
•		4-25-36	Fee
		8-2-44	Fee
•		5-15-46	Fee
		6-10 - 47	Fee
	•	3-2-48	Fee
N/A	Tract B-107	11-17-28	Fee
$\sum_{i=1}^{n} e^{-ikx_i}$		4-25-36	Fee
•	1.1.	6-10-47	Fee
. *		10-27-47	Fee
	· :	7-9-48	Fee
		11-4-48	Fee
N/A	Tract B-108	9-5-39	Fee
1 A	•	4-22-43	Fee
		4-22-46	Fee
en e		7-9-48	Fee
•		11-4-48	Fee
N/A	Tract B-109 and Tract B-122	10-21-26	Fee
		10-21-26	Fee
		4-5-37	Fee
		8-31-40	Fee
		9-1-42	Fee
		12-14-43	Fee
		8-23-45	Fee
		8-23-45	Fee
4.		7-21-45	Fee
		6-10-47	Fee
		3-3-48	Fee
		3-3-46 3-29 - 49	ree Fee
		3-2 3-49 3-27-51	
N/A	Tract P 110		Fee
VA	Tract B-110	12-7-1899	Fee
		6-12-22	Fee
		9-8-34	Fee
		8-31-40	Fee

Table D-1. Summary of Title Search Page 4 of 18

			Dates of Property	Type of
Assessor's Pa	arcel Number	Legal Description	Transfer ^(e)	Transfer
N/A		Tract B-110 (Continued)	8-31-40	Fee
		es.	8-31 - 40	Fee
*			8-31-40	Fee
•			3-5-46	Fee
N/A		Tract B-112	1-23-13	Fee
. :			5-19-13	Fee
21.3		1.	1-28-15	Fee
			10-8-31	Fee
			3-5-34	Fee
A.L			9-5-39	Fee
	•		9-5-39	Fee
. •		taka (j. 1	3-30-43	Fee
1.2		A to	11-5-43	Fee
		A Market	4-6-44	Fee
		41.57	5-31-44	Fee
			8-20-46	Fee
•	*.		6-10-47	Fee
•			6-12-47	Fee
-			7-9-48	Fee
			11-4-48	Fee
N/A		Tract B-119, Tract B-119(2), and	11-6-25	Fee
		part of Tract 107	9-16-37	Fee
· ",			11-4-43	Fee
			6-10-47	Fee
			7-9-48	Fee
			2-24-51	Fee
			3-27-51	Fee
			3-26-51	Fee
N/A		Tract B-120	5-12-23	Fee
			1-21-39	Fee
			4-6-39	Fee
			6-10-47	Fee
			3-27-51	Fee
N/A		Tract B-121	5-9-11	Fee
			11-9-15	Fee
**			4-23-25	Fee
		•	5-15-26	Fee
			4-14-43	Fee
			5-9-34	Fee
			5-9-34	Fee
			9-25-35	Fee
			3-1-37	Fee
•			3-1-37	Fee
			3-1-37	Fee
and a community of the second function and the second seco			9-16-37	Fee
			9-16-37	Fee
		•	9-1-38	Fee

Table D-1. Summary of Title Search Page 5 of 18

		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract B-121 (Continued)	3-6-39	Fee
	•	11-4-43	Fee
		6-3-44	Fee
. •		7-24-44	Fee
		7-9-48	Fee
•		5-1-50	Fee
	*4	4-2-51	Fee
		4-10-51	Fee
	•	5-3-51	Fee
		5-9 -51	Fee
•		11-30-51	Fee
N/A	Tract B-123	3-27-12	Fee
		1-21-39	Fee
•		3-28-39	Fee
		4-6-39	Fee
	•	6-10-47	Fee
		3-27-51	Fee
I/A	Tract B-124 and Tract B-125	3-16-16	Fee
**		3-29-26	Fee
:		9-22-26	Fee
		6-18-29	Fee
·	* 4	7-2-31	Fee
		7-20-34	Fee
	•	3-1-37	Fee
\$1.00		3-1-37	Fee
		3-1-37	Fee
. 6		9-16-37	Fee
•		5-7-43	Fee
		5-12-45	Fee
		7-10-46	Fee
		3-27-51	Fee
		3-27-51	Fee
	•	3-27-51	Fee
I/A	Tract B-136	10-29-21	Fee
		10-29-21	Fee
		4-19-32	Fee
	•	5-19-38	Fee
		9-1-38	Fee
		3-17-43	Fee
		4-23-46	Fee
		3-5-52	Fee
		6-6-74	Fee
I/A	Tract A-100	5-7-15	Fee
	-	3-16-31	Fee
		7-2-34	Fee
		1-17-36	Fee
		1-22-36	Fee

Table D-1. Summary of Title Search Page 6 of 18

		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract A-100 (Continued)	4-15-36	Fee
**************************************		1-29-37	Fee
		6-15-43	Fee
1.5		3-20-56	Fee
		5-13-69	Fee
N/A	Tract A-101	4-20-22	Fee
		12-26-54	Fee
		3-7-55	Fee
		3-20-56	Fee
	4	2-21-68	Easement
and the second s		5-13-69	Fee
N/A	Tract A-1	1-8-09	Fee
		4-6-33	Fee
		8-6-35	Fee
	•	4-28-36	Fee
		4-30-36	Fee
	•	3-7-38	Fee
•		3-17-47	Fee
•		3-22-48	Fee
N/A	Tract A-2	3-17-20	Fee
	1700171 =	6-23-20	Fee
		8-1-21	Fee
•		7-3-35	Fee
		8-6-37	Fee
		3-22-48	Fee
N/A	Tract A-3	7-18-03	Fee
		8-8-40	Fee
		5-10-45	Fee
		8-21-47	Fee
N/A	Tract A-4	7-18-03	Fee
IVA		2-24-43	Fee
		8-4-47	Fee
N/A	Tract A-5	4-15-31	Fee
N/A	HaceA	2-26-45	Fee
		4-4-45	Fee
		9-15-47	Fee
		2-16-48	Fee
N/A	Tract A-6, Parcel I	12-4-25	Fee
IN/A	Hace A.o, Farcer	6-29-35	Fee
		6-29-35	Fee
		7-13-35	Fee
		3-30-40	Fee
		4-29-41	Fee
		1-6-48	Fee
N1/A	Tract A-6, Parcel II	1-11-17	Fee
N/A	Hact Ato, Falcer II	10-15-25	Fee
		7-16-32	Fee

Table D-1. Summary of Title Search Page 7 of 18

Accessed to the t		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract A-6, Parcel II (Continued)	6-4-34	Fee
		1-17-35	Fee
		7-25-36	Fee
		2-14-45	Fee
		12-10-47	Fee
N/A	Tract A-6, Parcel III	6-5-20	Fee
	A.	2-1-30	Fee
		6-29-35	Fee
		4-22-36	Fee
•		10-20-36	Fee
		4-10-39	Fee
£**		12-2-43	Fee
N/A	Tract A-7	4-30-30	Fee
the second second		6-9-47	Fee
		6-30-47	Fee
		11-3-47	Fee
		2-4-48	Fee
N/A	Tract A-8	4-20-26	Fee
•	N = N	4-20-26	Fee
		11-10-30	Fee
	the William Control of the Control o	11-19-32	Fee
		6-29-35	Fee
N.,		11-26-35	Fee
		11-26-35	Fee
•	•	12-5-36	Fee
•		4-9-41	Fee
*		4-29-41	Fee
N/A	Tract A-9	10-22-28	Fee
	· ·	12-5-36	Fee
		12-5-36	Fee
<i>:</i>		4-29-41	Fee
		10-28 -4 6	Fee
er e		6-9-47	Fee
		7-14-47	Fee
		8-22-47	Fee
		2-21-48	Fee
		3-11-48	Fee
N/A	Tract A-10	9-4-31	Fee
	 · · · -	3-21-33	Fee
		7-10-35	Fee
		10-27-47	Fee
N/A	Tract A-11	9-4-31	Fee
-		3-21-33	Fee
		9-15-47	Fee
N/A	Tract A-12	2-28-30	Fee
		9-8-31	Fee
		1-20-41	Fee

Table D-1. Summary of Title Search Page 8 of 18

		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract A-12 (Continued)	6-9-47	Fee
4		6-9-47	Fee
		3-11-48	Fee
	en en	3-11-48	Fee
		4-16-48	Fee
N/A	Tract A-13, Parcel 1	3-20-28	Fee
:		4-29-41	Fee
		2-17-43	Fee
		2-17-43	Fee
<u> </u>		3-15-43	Fee
•		1-10-47	Fee
•		6-9-47	Fee
		3-11-48	Fee
• .		6-7-48	Fee
N/A	Tract A-13, Parcel II	3-23-16	Fee
*		8-22-25	Fee
		1-25-38	Fee
		3-15-43	Fee
		6-9-47	Fee
		3-11-48	Fee
		6-7-48	Fee
N/A	Tract A-14	10-22-28	Fee
		2-3-48	Fee
N/A	Tract A-15	10-26-26	Fee
No. of the Control of	*	8-7-47	Fee
N/A	Tract A-16	5-3-29	Fee
		2-28-31	Fee
		10-31-35	Fee
		7-14-47	Fee
		8-22-47	Fee
		2-16-48	Fee
N/A	Tract A-17	5-3-29	Fee
14/1	:	2-28-31	Fee
	·	10-31-35	Fee
		12-5-36	Fee
•		1-10-47	Fee
		6-9-47	Fee
		6-30 -4 7	Fee
		3-11-48	Fee
		4-16-48	Fee
		6-7-48	Fee
NI/A	Tract A-18	6-25-31	Fee
N/A	Hact A-10	11-2-44	
			Fee Fee
	T4 A 10	11-3-47	
N/A	Tract A-19	10-6-30 5-19-47	Fee
		ひ- 1 ガ-4 /	Fee

Table D-1. Summary of Title Search Page 9 of 18

		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract A-19 (Continued)	6-30-47	Fee
•	•	3-11-48	Fee
	A. (4)	7-17-48	Fee
		12-8-49	Fee
1/A	Tract A-20	4-29-30	Fee
		4-29-30	Fee
	:	3-24-31	Fee
		3-7-32	Fee
4	•	4-15-39	Fee
1.0	· · · · · · · · · · · · · · · · · · ·	4-4-43	Fee
. A		2-14-44	Fee
	Action to the second second	11-2-46	Fee
		11-3-47	Fee
N/A	Tract A-21	5-21-31	Fee
19		4-2-34	Fee
		7-7-35	Fee
		4-15-36	Fee
	141 mg	10-26-36	Fee
		6-9-47	Fee
	•	3-11-48	Fee
·		3-31-48	Fee
	All the second s		
		4-30-48	Fee
1/4	T A 00	6-18-48	Fee
N/A	Tract A-23	9-7-28	Fee
		5-13-36	Fee
		4-30-37	Fee
		4-23-46	Fee
	•	3-11-48	Fee
		7-9-48	Fee
		7-17-48	Fee
N/A	Tract A-24, Parcel 1	4-13-21	Fee
•		4-30-21	Fee
		6-14-22	Fee
	•	6-1-25	Fee
•		5-1-26	Fee
	•	5-5-26	Fee
		6-29-35	Fee
		6-29-35	Fee
•	•	7-10-35	Fee
		6-29-36	Fee
•		12-5-36	Fee
		3-31-37	Fee
•		5-4-37	Fee
		4-30-45	Fee
		4-30-45 4-23-46	Fee
		4-23-4 6 4-23-46	Leasehol
		4-23-46 3-11-48	Fee

Table D-1. Summary of Title Search Page 10 of 18

		Dates of Property	Type of
Assessor's Parcel Numi	er Legal Description	Transfer ^(a)	Transfer
N/A	Tract A-24, Parcel 1 (Continued)	6-7-48	Fee
		6-7-48	Fee
N/A	Tract A-24, Parcel 12	4-7-28	Fee
		6-29-35	Fee
		7-10-35	Fee
8. *		6-29-36	Fee
		10-30-36	Fee
v.	*1	12-5-36	Fee
18		3-31-37	Fee
	:	5-4-37	Fee
•		4-30-45	Fee
He fa		4-23-46	Fee
		4-23-46	Fee
		3-11-48	Fee
5.3		6-7-48	Fee
		6-7-48	Fee
N/A	Tract A-24, Parcel 3	4-16-31	Fee
1	, , , , , , , , , , , , , , , , , , ,	4-28-31	Fee
4. 1		6-29-35	Fee
		6-29-35	Fee
		7-10-35	Fee
	•	3-31-37	Fee
		5-8-37	Fee
4.70		5-17-38	Fee
4.		5-31-38	Fee
		4-23-46	Fee
		4-23-46	Fee
		3-11-48	Fee
		6-7-48	Fee
		6-7-48	Fee
N/A	Tract A-24, Parcel 4	11-13-19	Fee
Y/A	7.4007 (2 1) 1 41007 1	11-13-19	Fee
		6-12-22	Fee
erioria. Negli		9-5-22	Fee
•		6-29-35	Fee
		6-29-35	Fee
		7-10-35	Fee
•		8-6-38	Fee
	•	4-23-46	Fee
		4-23-46	Fee
		3-11-48	Fee
		6-7-48	Fee
		6-7-48 6-7-48	Fee
		10-18-48	Fee
	T1 A 2E		
N/A	Tract A-25	5-10-23 5-10-23	Fee
•		5-10-23	Fee
		4-3-35	Fee

Table D-1. Summary of Title Search Page 11 of 18

A	· . · . <u>-</u>	Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract A-25 (Continued)	5-1-43	Fee
		11-2-45	Fee
		5-8-46	Fee
		5-8-46	Fee
	•	3-26-48	Fee
		4-13-48	Fee
N/A	Tract A-26	4-15-25	Fee
	•	5-6-26	Fee
14	•	3-11-48	Fee
		3-31-48	Fee
* 2		4-30-48	Fee
N/A	Tract A-27	2-24-17	Fee
;		1-14-19	Fee
4 N		7-5-35	Fee
		4-13-36	Fee
		4-21-37	Fee
	•	2-12-44	Fee
		4-21-47	Fee
		3-11-48	Fee
		4-30-48	Fee
N/A	Tract A-28	11-15-11	ree Fee
	11d0t A 20	7-5-35	ree Fee
	·	1-25-38	Fee
$\mathcal{F}^{(n)}$		4-1-40	
		3-31-42	Fee
		4-20-44	Fee
		3-11-48	Fee
			Fee
es.		4-30-48	Fee
N/A	Tract A-29	12-2-48	Fee
	Hact M-23	4-16-15	Fee
		1-17-16	Fee
		1-22-17	Fee
		3-14-17	Fee
		10-6-17	Fee
•		4-5-46	Fee
		2-3-48	Fee
1/4	T	3-11-48	Fee
I/A	Tract A-30	4-2-30	Fee
		4-2-30	Fee
		7-10-35	Fee
		4-15-38	Fee
		4-1-40	Fee
		1-23-46	Fee
		1-25-46	Fee
		3-11-48	Fee
		4-30-48	Fee

Table D-1. Summary of Title Search Page 12 of 18

		:	Dates of Property	Type of
Assess	or's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A		Tract A-31	6-20-31	Fee
	1.3		12-18 - 36	Fee
	•		12-31-36	Fee
			3-13-45	Fee
	4.		3-15-45	Fee
	- 1 to 1 t	4	2-3-48	Fee
N/A		Tract A-32	4-18-07	Fee
			1-2-34	Fee
			12-1-35	Fee
	2.1		9-8-47	Fee
	4		4-13-48	Fee
N/A		Tract A-33	5-11-27	Fee
	e.		5-11-27	Fee
	1.5		3-30-36	Fee
			4-28-41	Fee
			6-10-41	Fee
		•	8-19-41	Fee
			8-26-41	Fee
	hy 4		4-13-48	Fee
N/A		Tract A-34	10-23-29	Fee
	- 10 miles - 10 miles		3-6-34	Fee
			4-2-36	Fee
			3-8-37	Fee
	24 (1)		8-2-37	Fee
			8-27-37	Fee
			5-17-45	Fee
		•	6-30-47	Fee
			2-4-47	Fee
		•	10-7-48	Fee
	A Committee of the Comm		11-3-48	Fee
N/A	•	Tract C-201	12-9-19	Fee
			11-17-24	Fee
		•	12-1-24	Fee
	er e		5-1-26	Fee
			5-25-28	Fee
		1	1-31-36	Fee
			5-10-37	Fee
			6-10-41	Fee
			6-30-42	Fee
N/A		Tract C-203, Tract C-204	1-8-28	Fee
7 /\		Hade o Zoo, Hade o Zon	1-9-28	Fee
	•	•	4-30-28	Fee
			4-15-36	Fee
			1-14-37	Fee
			4-15-39	Fee
			12-26-41	Fee
			11-30-42	Fee

Table D-1. Summary of Title Search Page 13 of 18

		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract C-203, Tract C-204 (Continued)	5-18-43	Fee
		4-29-48	Fee
	:	6-1-48	Fee
N/A	Tract C-205	11-2-07	Fee
4		4-14-13	Fee
11	•	12-24-15	Fee
		1-22-24	Fee
		3-8-28	Fee
4.		5-31-28	Fee
4-1		5-9-30	Fee
	·	7-12-37	Fee
:		12-5-40	Fee
\$ - +		7-17-44	Fee
•		11-30-46	Fee
		11-30-46	Fee
. •		6-9-47	Fee
		6-30-48	Fee
I/A	Tract C-206	11-24-16	Fee
· · · · · · · · · · · · · · · · · · ·		8-4-21	Fee
•		2-22-32	Fee
	•	3-20-33	Fee
	•	6-2-34	Fee
er.		1-31-35	Fee
		4-23-35	Fee
		2-23-46	Fee
•		2-23-46	Fee
	•	7-17-48	Fee
		11-3-48	Fee
I/A	Tract C-207	11-19-25	Fee
- -		5-4-48	Fee
I/A	Tract C-209	10-16-25	Fee
	i i i i i i i i i i i i i i i i i i i	4-21-31	Fee
		2-4-33	Fee
		7-2-34	Fee
•		5-19-36	Fee
		6-30-36	Fee
		5-1-40	Fee
	•	7-9-48	Fee
		7-3-46 7-17-48	ree Fee
/A	Tract C-226	7-17- 4 6 5-17-28	Fee
WA	Hatt C-220	5-17-28 5-17-28	
			Fee
		10-3-35	Fee
		12-18-51	Fee
/A	Tract D-1	1-6-21	Fee
		6-9-47	Fee
		2-3-48	Fee

Table D-1. Summary of Title Search Page 14 of 18

			Dates of Property	Type of
Assessor'	's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A		Tract D-2	11-7-25	Fee
*= =			5-31-38	Fee
``			12-15-39	Fee
			11-7-40	Fee
•			8-1-44	Fee
			6-25-45	Fee
			4-21-47	Fee
			6-9-47	Fee
			4-12-48	Fee
N/A		Tract D-3, Parcel 1	4-16-15	Fee
			3-28-16	Fee
			3-28-16	Fee
			8-20-20	Fee
			5-31-22	Fee
	- N		12-1-22	Fee
			7-10-26	Fee
	1.7		4-21-28	Fee
			1-23-30	Fee
•		•	2-18-30	Fee
1			1-22-31	Fee
``.			4-9-32	Fee
1	e t		7-16-32	Fee
			1-29-34	Fee
			4-26-34	Fee
			4-26-34	Fee
•			6-29-34	Fee
		•	6-30-34	Fee
	•		2-6-48	Fee
	: •		4-30-48	Fee
N/A		Tract D-3, Parcel 2	10-22-23	Fee
1			5-7-28	Fee
i i			1-23-30	Fee
			5-7-30	Fee
			4-8-31	Fee
	•		6-6-32	Fee
•	•		7-16-32	Fee
			3-31-37	Fee
			6-12-37	Fee
	. •		5-31-38	Fee
-	:		1-11-40	Fee
			3-30-43	Fee
			5-1-43	Fee
			6-9-47	Fee
			4-13-48	Fee
			4-30-48	Fee
N/A		Tract D-4	4-20-12	Fee
			5-8-46	Fee

Table D-1. Summary of Title Search Page 15 of 18

Assessor's Parcel Number	t and Denoviration	Dates of Property	Type of
The second secon	Legal Description	Transfer ^(a)	Transfer
N/A	Tract D-4 (Continued)	5-8-46	Fee
		6-9-47	Fee
•		3-11-48	Fee
	•	6-30-48	Fee
:	A set of the set of th	7-3-48	Fee
•		7-3-48	Fee
N/A	Tract D-5	10-1-17	Fee
•		5-3-34	Fee
		4-9-43	Fee
##		6-9-47	Fee
		3-11-48	Fee
		7-9-48	Fee
*.	•	7-17-48	Fee
N/A	Tract D-6	4-21-19	Fee
	the same	9-19-23	Fee
		10-15-28	Fee
		7-16-32	Fee
Sec.		2-15-34	Fee
\$ 1.	Mark the second of the second	4-5-34	Fee
2.5		10-29-37	Fee
		1-11-38	Fee
		4-29-42	Fee
<u> </u>		6-9-47	Fee
	•	3-23-48	Fee
J/A	Tract D-8A and Tract D-8B	10-28-19	Fee
	That B OA and Tract B-OB	1-20-23	Fee
		1-19-26	Fee
		4-19-27	Fee
		10-14-29	
			Fee
	₹ The state of the state of th	1-23-30	Fee
+ 14.		4-14-30	Fee
·		4-1-40	Fee
		6-9-47	Fee
		12-10-47	Fee
		3-3-48	Fee
1/8	Tours D.O.	3-11-48	Fee
I/A	Tract D-9	10-10-10	Fee
		4-7-22	Fee
•		1-25-44	Fee
		11-24-44	Fee
•		6-9-47	Fee
		2-4-48	Fee
I/A	Tract D-10	3-8-16	Fee
		6-9-47	Fee
		3-11-48	Fee
		7-9-48	Fee

Table D-1. Summary of Title Search Page 16 of 18

		Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(e)	Transfer
N/A	Tract D-10 (Continued)	7-17-48	Fee
		4-24-53	Fee
N/A	Tract D-11	12-22-25	Fee
<u>:</u>	And the state of t	12-22-25	Fee
		5-5 -3 4	Fee
N.		6-5-34	Fee
		6-27-40	Fee
•		6-30-48	Fee
. %		6-30-48	Fee
N/A	Tract E-1	9-27-26	Fee
1. The state of th		9-27-26	Fee
1	•	7-16-32	Fee
		6-26-42	Fee
•		2-6-45	Fee
		4-29-48	Fee
N/A	Tract E-2A and B	8-27-17	Fee
. :		11-8-35	Fee
		9-20-47	Fee
		7-17-48	Fee
		11-3-48	Fee
		12-16-48	Fee
N/A	Tract E-3	7-16-32	Fee
5.4		7-27-32	Fee
		6-1-42	Fee
*		6-9-47	Fee
		11-5-47	Fee
	•	1-5-48	Fee
N/A	Tract E-4	2-18-19	Fee
		4-21-44	Fee
		10-8-47	Fee
N/A	Tract E-5	4-4-13	Fee
\$		8-4-41	Fee
		4-27-48	Fee
N/A	Tract E-6	1-23-18	Fee
		5-3-48	Fee
N/A	Tract E-7	10-16-26	Fee
. •		7-5-41	Fee
÷		7-23-46	Fee
		4-13-48	Fee
N/A	Tract E-8	5-24-32	Fee
	•	8-6-37	Fee
	\$	8-24-42	Fee
		7-31-44	Fee
		3-11-48	Fee
		7-19-48	Fee
N/A	Tract E-9	12-15-03	Fee
		11-29-36	Fee

Table D-1. Summary of Title Search Page 17 of 18

	······································	Dates of Property	Type of
Assessor's Parcel Number	Legal Description	Transfer ^(a)	Transfer
N/A	Tract E-9 (Continued)	4-27-37	Fee
		11-9-45	Fee
4,7		5-4-48	Fee
N/A	Tract E-10	11-3-14	Fee
		11-29-18	Fee
		11-30-18	Fee
		7-31-34	Fee
4		7-31-34	Fee
		8-22-36	Fee
		5-28-37	Fee
		2-13-41	Fee
		2-26-41	Fee
		3-25-41	Fee
		4-25-46	Fee
	• .	6-9-47	Fee
		8-11 -4 7	Fee
		3-11-48	Fee
		3-31-48	Fee
		6-18-48	Fee
		7-9-48	Fee
		7-17-48	Fee
		11-3-48	Fee
		4-23-49	Fee
I/A	Tract E-11	5-23-05	Fee
•		6-9-47	Fee
		6-29-47	Fee
		4-28-48	Fee
I/A	Tract E-12	7-6-11	Fee
		4-7-13	Fee
		11-14-46	Fee
		1-29-47	Fee
		6-6-47	Fee
		6-9-47	Fee
		7-17-48	Fee
		11-3-48	Fee
I/A	Tract E-13	6-12-16	Fee
-		11-17-39	Fee
		10-3-41	Fee
		11-13-46	Fee
		6-9-47	Fee
		3-31-48	Fee
		4-30-48	Fee
I/A	Tract E-14	6-5-1897	Fee
WA.	Hact L-14	1-31-36	
		4-29-36	Fee
			Fee
		6-9-47	Fee
		4-27-48	Fee

Table D-1. Summary of Title Search Page 18 of 18

Assessor's Parcel Number	Legal Description	Dates of Property Transfer ^(a)	Type of Transfer
N/A	Tract E-15	1-17-28	Fee
	· · · · · · · · · · · · · · · · · · ·	8-21-39	Fee
		7-17-48	Fee
		11-3-48	Fee
N/A	Tract E-16 and Tract E-16A	1-8-23	Fee
		1-30-39	Fee
×		9-16-42	Fee
		1-28-48	Fee
		4-15-48	Fee
		10-14-48	Fee
N/A	Tract E-17	5-6-20	
· · · ·	•	10-4-20	
1.88		1-21-31	
		6-29-35	
•		2-7-36	
		4-22 - 36	
		4-10-39	
		3-21-45	
		10-6-48	

APPENDIX E HISTORY OF FACILITY USAGE

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APPENDIX E

HISTORY OF FACILITY USAGE

Facility 100 was constructed in 1969 and was used as a communications facility. This building was demolished in 1990.

Facility 102 was constructed in 1952 and was used as an automobile maintenance shop. This building was demolished in 1986.

Facility 103 was constructed in 1952 and was used as an oil and grease storage facility. This building was demolished in 1986.

Facility 104 was constructed in 1955 and was used as a waste disposal facility. This facility was demolished in 1986.

Facility 106 was constructed in 1952 and was used as a civil engineering maintenance shop. This Building was later used as a storage facility. It was demolished in 1986.

Facility 201 was constructed in 1968 and was used as a defensive fighting post. This building was demolished in 1988.

Facility 206 was constructed in 1952 and was used as a waste treatment facility. This building was demolished in 1986.

Facility 207 was constructed in 1952 and was used as a waste treatment facility. This building was demolished in 1986.

Facility 215 was constructed in 1952 and was used as a ground-powered equipment shop. This building was later used as a safety education facility. It was demolished in 1986.

Facilities 377 and 378 were constructed in 1954 and were used as base supply and equipment warehouses. These buildings were demolished in 1972.

Facility 1050 was constructed in 1952 and was used as a sewage treatment and disposal facility. The date of disposal for this facility is unknown.

Facility 3500 was constructed in 1953 and was used as a hospital. This facility was demolished in 1988.

Facility 7503 was constructed in 1953 and was used as a vehicle fueling station. This facility was demolished in 1991.

Facility 7803 was constructed in 1957 and was used as a fuel pump station. This facility was demolished in 1993.

Facility 8010 was constructed in 1956 and was used as an oil and grease storage facility. It was later used as a supply and equipment warehouse. It was disposed of in 1986.

Facility 8114 was constructed in 1959 and was used as a liquid fuel pump station. This facility was disposed of in 1991.

Facility 8450 was constructed in 1957 and used as a jet test cell. This building was disposed of in 1986.

Facility 8501 was constructed in 1952 and used as a hazardous and flammable materials storage facility. It was later used as a supply and equipment warehouse, administrative office, and wing headquarters unit. It was disposed of in 1986.

Facility 8511 was constructed in 1954 and used as a wing maintenance hangar. It was later used as an equipment supply shop. It was no longer in use in 1992.

Facility 8512 was constructed in 1966 and used as a vehicle fueling station. This building was no longer in use in 1992.

APPENDIX F

LORING AIR FORCE BASE
INSTALLATION RESTORATION PROGRAM
ACTIVITIES PRIOR TO 1991

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APPENDIX F

LORING AIR FORCE BASE INSTALLATION RESTORATION PROGRAM ACTIVITIES PRIOR TO 1991

The Installation Restoration Program (IRP) was established to identify, characterize, and remediate Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)-related contamination on Air Force installations. The program is designed to evaluate past disposal sites, control the migration of contaminants, and control potential hazards to human health and the environment. The Loring Air Force Base (AFB) IRP activities conducted prior to 1991 are discussed below. Ongoing IRP activities at Loring are discussed in Section 3.3.2.

The IRP Phase I-Records Search for Loring AFB was published by CH2M Hill in January 1984. It initially identified 19 potential disposal sites, including 4 landfills, a fire training area, and 14 spill/dump sites. Seventeen of these sites were then scored using the Hazard Assessment Ranking Methodology (HARM) to establish investigation priorities. Two of the original 19 sites were not considered potential contamination migration hazards and were not scored. Of the 17 scored sites, thirteen were recommended for further evaluation. However, recommendations for further study were eventually provided for all 19 sites. Six primary Areas of Concern were identified, including the Nose Dock Area (NDA), the Flightline Drainage Ditch (FLDD), the Railroad Maintenance Site (RRMS), the Base Exchange Service Station (BXSS), the Limestone Receiver Site (RS), and the Quarry.

In 1985, the Phase II Stage 1 field investigations were conducted by Roy F. Weston, Inc., to determine the potential for adverse environmental impacts from past disposal or releases of hazardous substances. Eighteen of the original 19 sites identified during the Phase I-Records Search were investigated. The Low-Level Radioactive Waste Disposal Sites (LLRWDS) were excluded from the Phase II Stage 1 investigations because they were not considered to be an environmental hazard. The field activities conducted during Phase II Stage 1 investigations included the following: (1) sampling of surface water, groundwater, and soil at most sites; (2) sampling of streambed sediment at the FLDD; and (3) geophysical surveys at Landfills (LFs) 1, 2, and 3.

The Phase II Stage 1 study concluded that, of the 18 sites investigated, no further action was required for the Coal Storage Area, the Fly Ash Disposal Area, the East Loring Landfill, and the Fuel Drop Sites (FDSs). The Limestone RS and the East Gate Waste Storage Tanks Site (EGWSTS) were identified as requiring remedial actions. It was determined that the data necessary to support an analysis of alternative remedial actions for these two sites had been collected. The remaining 12 sites (along with the Limestone RS and the EGWSTS) were identified as requiring further investigations.

Following the Phase II Stage 1 investigations, additional Preliminary Assessments (PAs) were conducted in 1989. Some sites that were investigated had been previously identified but were recommended for no further action during earlier investigations. In addition, PAs were conducted for a number of newly identified potential disposal sites. These PAs resulted in the addition of the seven new sites into the Loring IRP and the expansion of two existing sites:

- Pumphouse 8210
- Pumphouse 8270
- Vehicle Maintenance Building (VMB, Facility 7500)
- Refueling Maintenance Shop Area (RMSA, Facility 7600)
- Five low-level radioactive waste tanks and two low-level radioactive waste trenches, which were combined into one new site (LLRWDS)
- The north and south FDSs, which were combined into one site
- Power Plant Drainage Pipe (PPDP), a newly added site that was later enlarged to incorporate the Former Vehicle Motor Pool (FVMP, Facility 7235)
- Flightline Area (FLA) was expanded to include the Auto Hobby Shop (AHS), the Former Jet Engine Test Cell (FJETC), the Entomology Shop (ES), and the Former Solvent Storage Building (FSSB)
- FLDD was expanded to include an oil/water separator at Facility 6538.

A Site Investigation (SI) was conducted at the sites listed above when they were incorporated into the Loring IRP. Upon completion of the SI, these sites were recommended for further investigation and were incorporated into a 21-site basewide Remedial Investigation/Feasibility Study (RI/FS). RI activities have been conducted since 1988 for most sites.

In an effort to remove potential contaminant sources, several Interim Remedial Actions (IRAs) were performed for a number of sites. In 1990, contaminated soil was removed from the RRMS, EGWSTS, and NDA. In 1990 and 1991, underground storage tanks (USTs) were removed from various areas, including the Underground Transformer Site (UTS), Water Softening Plant (WSP), Ammonia Transport Facility, Pumphouses 8210 and 8270, and 50 abandoned USTs from other main base locations.

Loring AFB was added to the National Priorities List (NPL) on February 21, 1990. In April 1991, the Air Force, the U.S. Environmental Protection Agency (U.S. EPA) Region 1, and the Maine Department of Environmental Protection (MDEP) signed a Federal Facility Agreement (FFA). Pursuant to the Base Closure and Realignment Act of 1988 and the Defense Base Closure and Realignment Act of 1990 (collectively referred to as DBCRA), Loring AFB was selected for closure and associated property disposal during Round II Base Closure Commission deliberations. Loring AFB is scheduled to close on September 30, 1994.

		APPENDIX G		
GLO	SSARY OF TERMS	, ACRONYMS, A	ND ABBREVIATIONS	
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APPENDIX G

GLOSSARY OF TERMS, ACRONYMS, AND ABBREVIATIONS

GLOSSARY OF TERMS

Asbestos. A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)(42 U.S.C. 9601 et seq.; and 26 U.S.C. 4611, 4612, 4622, 4671, and 4672). The federal law (P.L. 96-510) passed December 11, 1980, which provides a series of programs to address the cleanup of hazardous waste disposal and spill sites. It has been modified and amended several times, most significantly in 1986 by the Superfund Amendments and Reauthorization Act (SARA).

Corrosive. A material that has the ability to cause visible destruction of living tissue and has a destructive effect on other substances. An acid or a base.

Council on Environmental Quality (CEQ). Established by the National Environmental Policy Act (NEPA), the CEQ consists of three members appointed by the President. CEQ regulations (40 CFR Parts 1500-1508, as of July 1, 1986) described the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and the timing and extent of public participation.

Effluent. Waste material discharged into the environment.

Environmental Protection Agency (EPA). The independent federal agency, established in 1970, that regulates environmental matters and oversees the implementation of environmental laws.

Friable. Easily crumbled or ground into powder.

Fungicide. Any substance which kills or inhibits the growth of fungi.

Hazardous material. Generally, a substance or mixture of substances, that has the capability of either causing or significantly contributing to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or posing a substantial present or potential risk to human health or the environment. Use of these materials is regulated by Department of Transportation (DOT), OSHA, and SARA.

Hazardous substance (federal definition under 40 CFR 300.5). Any substance designated pursuant to section 311(b)(2)(A) of the Clean Water Act (CWA); any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress); any toxic pollutant listed under Section 307(a) of the CWA; any hazardous air pollutant listed under section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural

gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Hazardous waste (federal definition under 40 CFR 261.3). A waste, or combination of wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under the RCRA.

Herbicide. A pesticide, either organic or inorganic, used to destroy unwanted vegetation, especially various types of weeds, grasses, and woody plants.

Installation Restoration Program (IRP). An Air Force program to identify, characterize, and remediate environmental contamination on its installations.

Jet Propellant Fuel Number 4 (JP-4). JP-4 is a kerosene-based aviation fuel with a volatile, gasoline-like component.

Lead. A heavy metal, used in many industries, which can accumulate in the body and cause a variety of negative effects. One of the six pollutants for which there is a national ambient air quality standard.

Mitigation. A method or action to reduce or eliminate program impacts.

Multiple Family Housing. Townhouse or apartment units that accommodate more than one family though each dwelling unit is only occupied by one household.

National Environmental Policy Act (NEPA). Public Law 91-190, passed by Congress in 1969. The Act established a national policy designed to encourage consideration of the influences of human activities (e.g., population growth, high-density urbanization, industrial development) on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues in order to facilitate the decision-making process.

National Priority List (NPL). A list of sites (federal and state) that contain hazardous materials that may cause an unreasonable risk to the health and safety of individual property, or the environment.

PCB-contaminated equipment. Equipment that contains a concentration of PCBs from 50 to 499 ppm and is regulated by the U.S. EPA.

PCB equipment. Equipment that contains a concentration of PCBs of 500 ppm or greater and is regulated by the U.S. EPA.

Pesticides. Any substance, organic or inorganic, used to destroy or inhibit the action of plant or animal pests; the term thus includes insecticides, herbicides, fungicides, rodenticides, miticides, fumigants, and repellents. All pesticides are toxic to humans to a greater or lesser degree. Pesticides vary in biodegradability.

Physical Inspection. An inspection of a contiguous property that included a visit to the subject property, an interview with the property owner/operator (when present), and a walk-around of the property.

Polychlorinated Biphenyls (PCBs). Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as an environmental pollutant that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.

Single-Family Housing. A conventionally built house consisting of a single dwelling unit occupied by one household.

Sludge. A heavy, slimy deposit, sediment, or mass resulting from industrial activity; solids removed from wastewater.

Solvent. A substance that dissolves or can dissolve another substance.

Trichloroethylene. An organic solvent.

U.S. Environmental Protection Agency (U.S. EPA). The independent federal agency, established in 1970, that regulates environmental matters and oversees the implementation of environmental laws.

Visual Inspection. An inspection of a contiguous property that included a windshield survey of the subject property from public access roads or base property.

Zoning. The division of a municipality (or county) into districts for the purpose of regulating land use, types of building, required yards, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirements for each zoning category.

ACRONYMS/ABBREVIATIONS

ACC Air Combat Command

ACM asbestos-containing material

AFB Air Force Base
AOC Area of Concern
APKM Ashland CEVG Site

AST aboveground storage tank

BCEAT Base Closure Environmental Assistance Team

BCP BRAC Cleanup Plan

BRAC Base Realignment and Closure

CERCLA Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS Comprehensive Environmental Response, Compensation and Liability

Information System

CERFA Community Environmental Response Facilitation Act

CES Civil Engineering Squadron

CEV 42nd Environmental Management Flight

CEVG Combat Evaluation Group
CFR Code of Federal Regulations
DCTE Caribou Communications Site

DOD Department of Defense

DRMO Defense Reutilization and Marketing Office

EBS Environmental Baseline Survey

ECAMP Environmental Compliance Assessment and Management Program

EIS Environmental Impact Statement
EOD Explosive Ordnance Disposal

EPA Environmental Protection Agency

FFA Federal Facility Agreement
FHU Family Housing Unit
FS Feasibility Study
gpm gallons per minute

HARM Hazard Assessment Ranking Methodology
HOSP/MGPB Hospital/Bioenvironmental Engineering Service

IRA Interim Remedial Action

IRP Installation Restoration Program

kg kilogram

MDEP Maine Department of Environmental Protection

MGD million gallons per day

MOGAS Motor gasoline
MSL mean sea level

NEPA National Environmental Policy Act of 1969

NFA No Further Action

NPDES National Pollutant Discharge Elimination Permit

NPL National Priorities List
NRCH Loring AFB (main base)
NRCQ Limestone Receiver Site

NRCV Presque Isle Family Housing Unit
NRCW Caribou Family Housing Unit
NRCX Caswell Family Housing Unit
NRCY Connor Family Housing Unit
NRCZ Limestone Family Housing Unit

NRPX Madawaska Dam
OU Operable Unit
OWS oil/water separator
PA Preliminary Assessment

PA/SI Preliminary Assessment/Site Investigation

PCB polychlorinated biphenyl pCi/l picocuries per liter

POL petroleum, oil, and lubricants

ppm parts per million
RA Remedial Action

RCRA Resource Conservation and Recovery Act

RD Remedial Design

RFA RCRA Facility Assessment

RI/FS Remedial Investigation/Feasibility Study

SAC Strategic Air Command
SI Site Investigation

SPRP Substance Spill Prevention and Response Plan

TCE Trichloroethylene TS Treatability Study

U.S. EPA U.S. Environmental Protection Agency

UST underground storage tank
VRS visual reconnaissance survey

VSI visual site inspection WSA weapons storage area

WWTP Wastewater treatment plant

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1.0 PURPOSE OF THE ENVIRONMENTAL BASELINE SURVEY

1.1 INTRODUCTION

Purpose. This Environmental Baseline Survey (EBS) documents the physical condition of Air Force real property at Loring Air Force Base (AFB), Maine, resulting from the storage, use, and disposal of hazardous substances and petroleum products throughout the base's history. The EBS collects into a single document all available information to establish a baseline for use by the Air Force in making decisions concerning real property transactions.

Although primarily a management tool, the EBS also assists the Air Force in meeting its obligations under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S. Code Section 9620(h), as amended by the Community Environmental Response Facilitation Act (CERFA) (Public Law 102-426). An EBS is required by Department of Defense (DOD) policy before any property can be sold, leased, transferred, or acquired.

The EBS helps the Air Force to:

- Develop sufficient information to assess the health and safety risks on the property surveyed, and determine what actions are necessary to protect human health and the environment prior to a real property transaction.
- Support decisions for Finding of Suitability to Lease/Finding of Suitability to Transfer and aid in determining lease or deed restrictions.
- Document and obtain regulator concurrence on uncontaminated property as required and defined under the CERCLA Section 120(h)(4), identification of uncontaminated property.
- Support notice, when required under CERCLA Section 120(h)(1), of the type, quantity, and time frame of any storage, release, or disposal of hazardous substances or petroleum products on the property.
- · Identify data gaps concerning environmental contamination.
- Define potential environmental liabilities associated with real property transactions.
- Aid in determining possible effects on property valuation from any contamination/concerns identified.

Content of Environmental Baseline Survey Report. The information for the EBS was obtained through a records search, visual inspections, and interviews. The records search included a title search, review of aerial photographs, and review of all available Air Force and other agency records including environmental restoration and compliance reports, records, audits, and inspections. Visual inspections were conducted of the base property and facilities. The EBS also includes an assessment of environmental conditions on off-base properties contiguous to or relatively near the base that could pose environmental concern and/or affect the subject property. Physical inspections were also conducted on contiguous off-base properties where access was obtained from the owner or operator. Where access was not permitted, visual inspections of off-base properties were conducted from base property or public roads.

Based on an analysis of the available data, the EBS categorizes property into one of seven categories:

- Category 1 Areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas)
- Category 2 Areas where only storage of hazardous substances or petroleum products has occurred (but no release, disposal, or migration from adjacent areas has occurred)
- Category 3 Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action
- Category 4 Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken
- Category 5 Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, removal and/or remedial actions are under way, but all required remedial actions have not yet been taken
- Category 6 -Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but required response actions have not yet been implemented
- Category 7 Areas that are unevaluated or require additional evaluation.

Property in the first four categories would be eligible for deed transfer. Property in the last three categories would not be considered for transfer until the necessary actions have been taken and the property has been reclassified into one of the first four categories. Leases would be considered on a case-by-case basis for properties within the last three categories.

Updates and Data Gaps. The EBS combines available information on the property's environmental condition into a single document. Where data gaps were found in the available information, the EBS identifies those data gaps, and sampling and analysis field efforts may be necessary to fill them. If possible, the Air Force will take action to fill the data gaps immediately at the time they are identified so that the EBS will be as complete and accurate as possible. Where it is not possible, the Air Force already has several programs under way to identify and characterize environmental contamination and the presence of hazardous substances that may provide the best vehicle for filling data gaps. In all cases, actions to fill data gaps will be accelerated wherever possible to support the disposal schedule. As efforts to characterize or remediate property at closing Air Force installations are completed, the EBS will be updated periodically to reflect the latest information.

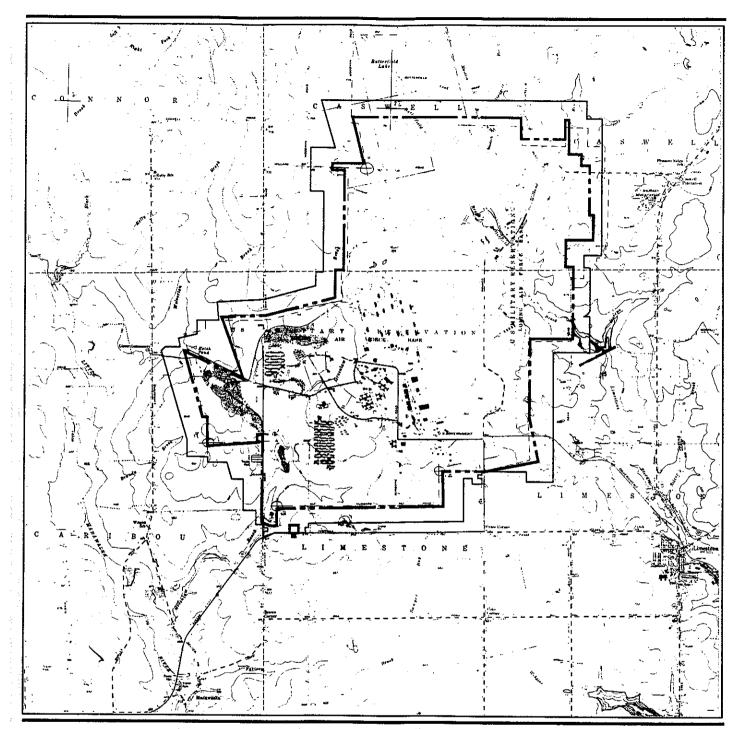
Relationship to Other Documents. The comprehensive plan for the environmental restoration and preparation of closing Air Force installations is laid out by each installation in a Base Realignment and Closure (BRAC) Cleanup Plan (BCP). The plan for filling data gaps identified in the EBS will be incorporated into the BCP and updated periodically as actions are completed.

The Air Force is also preparing Environmental Impact Statements (EISs) on the disposal and reuse process for Loring AFB. Although these documents may contain some of the same information, they serve a different purpose. The Conversion and Reuse EIS for Loring AFB will analyze the impacts of disposal and reuse on the environment, while the EBS documents the environmental condition of the property.

1.2 BOUNDARIES OF THE PROPERTY AND SCOPE OF SURVEY AREA

The EBS at Loring AFB is based on a review of information available for the visual and/or physical inspection of (1) property on Loring AFB, (2) property immediately off base (i.e., having a contiguous border with the base boundary), and (3) property within approximately 0.25 mile to 2.5 miles of the main base boundary with potential environmental concerns. The results of the survey for the main base and nine off-site parcels, and off-base properties are discussed in Chapters 3 and 4, respectively.

Loring AFB, scheduled to close in September 1994, consists of 8,702 onsite acres and 780 off-site acres. The off-site property is made up of the Caswell Family Housing Unit (FHU) (8 acres), Connor FHU (6 acres), Presque Isle FHU (65 acres), Limestone FHU (6 acres), Caribou FHU (5 acres), the Limestone Receiver Site, (6 acres) Caribou Communication Site (71 acres), Madawaska Dam area (606 acres), and the Ashland Combat Evaluation Group (CEVG) Site (7 acres). These sites are located throughout Aroostook County. Figures 1-1a through 1-1d depict Loring AFB, the nine off-site parcels, and contiguous off-base property boundaries. Loring AFB and the nine off-site parcels are comprised of 146 parcels acquired by fee purchase or Declaration of Taking between 1947 and 1993, with most of the acquisitions occurring in 1948. The scope of this EBS includes all property within the main base, the nine noncontiguous parcels, and all contiguous adjacent property.



EXPLANATION

--- Base Boundary

---- Survey Area

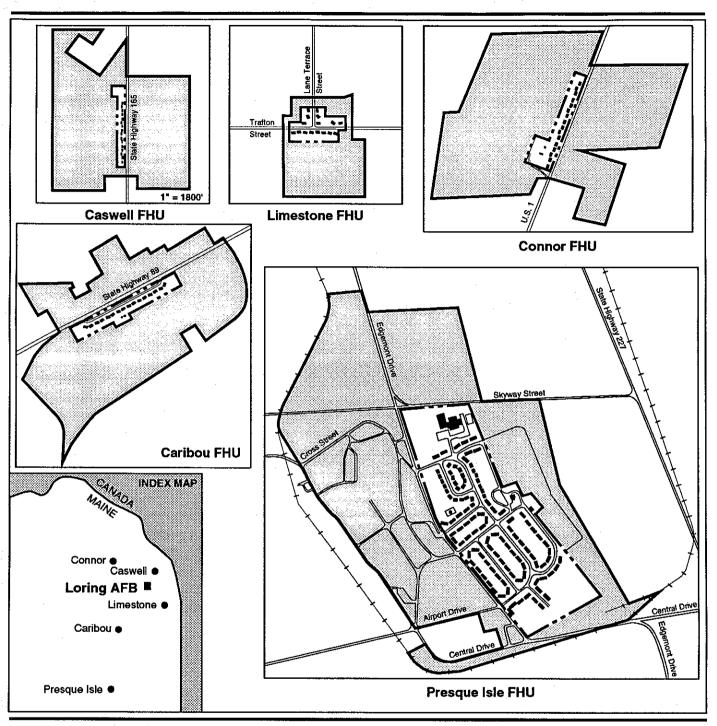
Survey Areas Main Base





Map Sources: U. S. Geological Survey, 1978a, 1978b.

Figure 1-1a



EXPLANATION

Survey Area

+---- Railroad

--- Base Boundary

Survey Areas Off-Site Parcels Family Housing Units (FHUs)

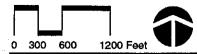
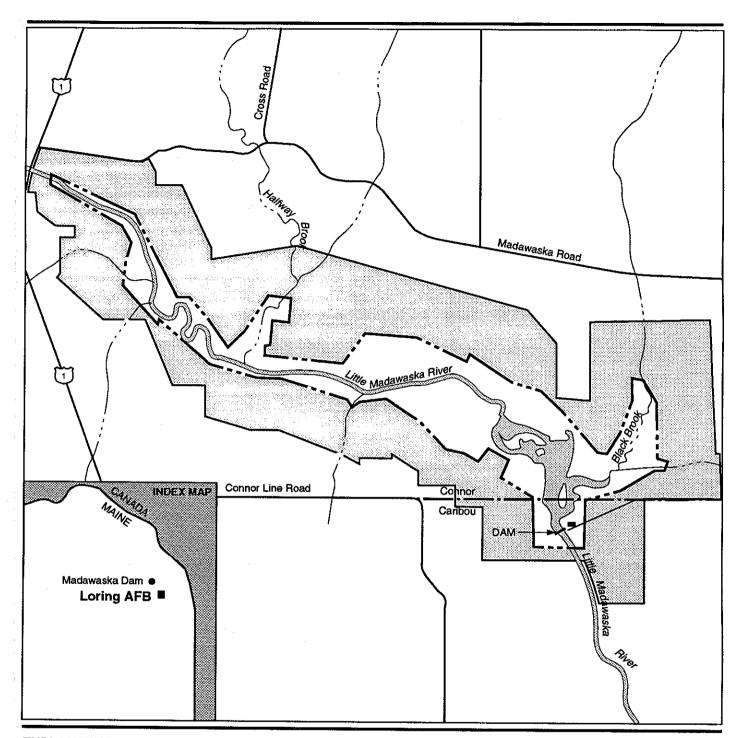
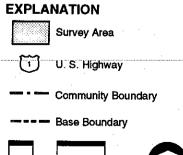


Figure 1-1b



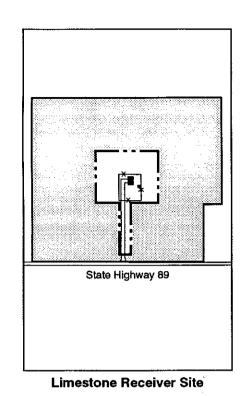


2500 Feet

Survey Areas Off-Site Parcel Madawaska Dam

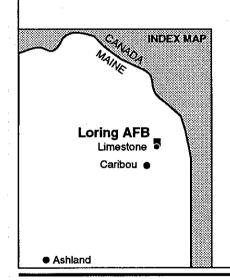
Figure 1-1c

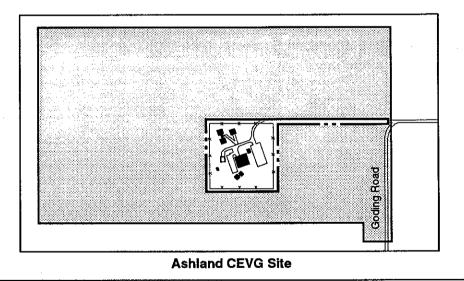
1250



1"=1600'

Caribou Communication Site





EXPLANATION

--- Base Boundary

Survey Area

Survey Areas
Off-Site Parcels
Caribou
Communication Site,
Ashland CEVG Site
and Limestone
Receiver Site



Figure 1-1d

2.0 SURVEY METHODOLOGY

The methods used to conduct the EBS of Loring AFB are described in this chapter.

2.1 APPROACH AND RATIONALE

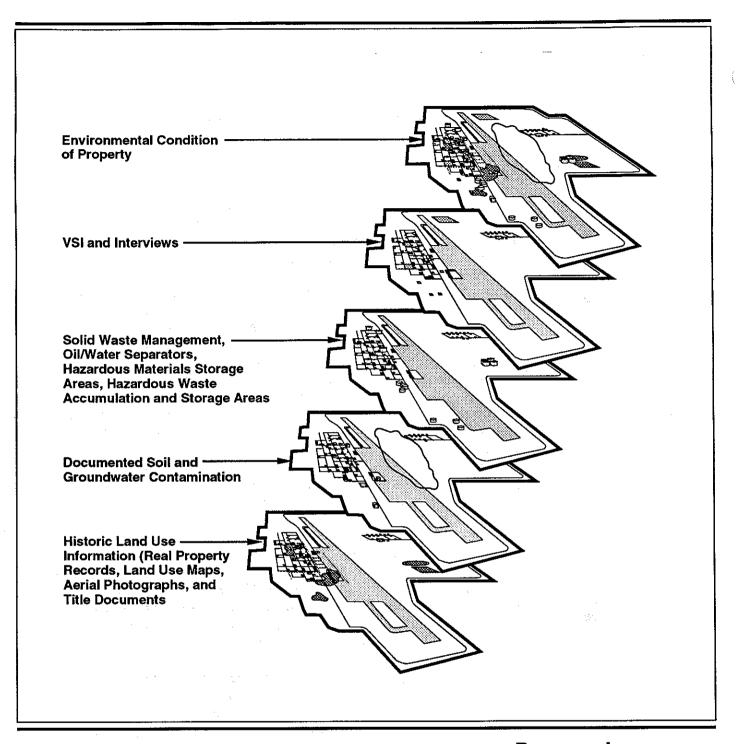
The EBS followed a methodical process in which available information was analyzed and conclusions were drawn about the condition of the property. The EBS began with a review of real property records, land use maps, and aerial photographs to identify historical land uses, which are a primary indicator of potential contamination. The record search identified areas of the base where industrial processes occurred; solid and hazardous wastes were stored, disposed of, or released; and hazardous materials were stored. These areas received the closest scrutiny. A review of recorded chain of title documents was also conducted to assess if any prior uses could reasonably contribute to existing environmental concerns. CERCLA and Resource Conservation and Recovery Act (RCRA) studies and field investigations were reviewed to identify areas where the presence (or absence) of contamination has been confirmed. Additionally, records from industrial shops, base supply, the fire department, the bioenvironmental engineer, environmental audits or surveys, and other federal agencies were reviewed to identify any other areas of concern. Types of surveys reviewed typically included asbestos, lead-based paint, and radon, where available. Finally, past and present employees were interviewed and physical inspections of the property and facilities were conducted to identify any additional evidence of spotting or stressed vegetation (i.e., anything that might indicate contamination).

The result is a collection of all available information into "layers" that, when laid over each other, provide a complete picture of the property's condition. This enables the researchers to categorize the property into defined environmental condition categories and identify data gaps (Figure 2-1).

The major components feeding into the analysis were document reviews (including interpretation of aerial photographs), inspections of on-base property, interviews with current and former personnel, and a chain of title review. Each of these components is described below. The approach for conducting the evaluation of off-base properties is presented in Chapter 4.

2.1.1 Description of Documents Reviewed

The records search of available documentation focused primarily on records, reports, and maps maintained by the 42nd Civil Engineering Squadron (CES), the 42nd Hospital/Bioenvironmental Engineering Services (HOSP/MGPB) office, and the 42nd Environmental Management Flight (CEV). Most of the



Resource Layer Approach

Figure 2-1

files and records pertained to activities that have occurred since 1980; however, some documents provided information about activities prior to 1976.

Various studies, investigations, and inspections that consider environmental conditions at the base, including regulatory compliance issues, have been conducted by the Air Force and other federal and state agencies in the past several years. The results of these studies and investigations provided the initial baseline used in developing this EBS and are referenced throughout this document. The primary types of studies or investigations include the following:

- Installation Restoration Program (IRP) studies
- RCRA Facility Assessment (RFA)
- Air Force Environmental Compliance Assessment and Management Program (ECAMP) reports
- Underground storage tank (UST) investigations
- National Environmental Policy Act (NEPA) documentation
- Base Closure Environmental Assistance Team (BCEAT) reports.

As part of the records search, a number of old maps and aerial photographs were reviewed and analyzed to assist in identifying past land uses and potential environmental contamination sources, and to verify other information found in the records search. Maps reviewed covered the period from prior to construction of the base (circa 1945) to the present. The primary map resources reviewed included the Base Comprehensive Plan series (scale of 1 inch = 400 feet), the Utility Block Map series (scale of 1 inch = 50 feet), and design and as-built engineering drawings and maps for specific facilities (as necessary). Historic aerial photographs dating back to the late 1940s were also reviewed.

The types of documents and records reviewed for each environmental media are described below. A detailed list of references used in preparing this EBS is presented in Appendix A.

Hazardous Materials/Petroleum Products Management. Activities within office areas and dormitories likely required the use of small quantities of hazardous material such as ammonia and other cleaning supplies. Hazardous materials use in specific industrial facilities on the base was determined through a review of Industrial Workplace Case Files maintained by the Bioenvironmental Engineering Services office. Specific items reviewed in each case file included historic and current Baseline Industrial Hygiene

Surveys, Industrial Hygiene Survey Data Sheet - General Forms (Air Force Form 2758), Master Workplace Exposure Data Summary Forms (Air Force Form 2755), Hazardous Material Data forms (Air Force Forms 2761), and relevant correspondence (e.g., Memos to the Record) contained in the files related to hazardous materials exposure. Sample forms are provided in Appendix B. Specific hazardous materials exposure incidents (e.g., spills or accidents) were noted and discussed with Bioenvironmental Engineering Services personnel.

A cumulative hazardous materials inventory was developed for each workplace based on a review of Hazardous Material Data Forms (Air Force Form 2761) listing all hazardous materials used in a particular workplace. Information on hazardous materials handling, including disposal methods, was also derived from a review of workplace case files. Information contained in these files generally covered the period from the early 1980s to the present.

Hazardous Waste/Petroleum Waste Management. Hazardous waste disposal practices were defined based on a review of Loring AFB Hazardous Waste Management Plans, hazardous waste manifest information, IRP documents, HOSP/MGPB documents, photochemical waste information, and other documents contained in the base files. Information on hazardous waste collection and disposal procedures was obtained from interviews with base personnel.

IRP Sites Identified to Date. The analysis of IRP sites consisted of a review of various Loring AFB IRP documents, including the Phase I - Records Search, Preliminary Assessments/Site Inspections (PA/SI), and Remedial Investigations/Feasibility Studies (RI/FS). Base files related to the IRP were also reviewed and interviews were conducted with base personnel responsible for implementing IRP activities.

Storage Tanks. An inventory of existing and historic aboveground storage tanks (ASTs), USTs, and associated piping systems was compiled from a review of the Loring AFB Storage Tank Management Plans, the Loring AFB Oil and Hazardous Substance Spill Prevention and Response Plans, various storage tank listings and documentation contained in the base files, storage tank listings provided by the 42nd Environmental Management Office, and current and historic Tab G-8, Liquid Fuels Systems maps. Additional information was obtained from a review of the CES map and engineering drawing files and the Real Property Accountable Records.

Oil/Water Separators. An inventory of oil/water separators (OWSs) was compiled from a review of the various listings and documentation contained in the base files. In addition, information was obtained from a review of the installation map and engineering drawing files, the Real Property Accountable Records, and visual inspections conducted as part of this EBS.

Information on the other separation devices was obtained from a review of the Utility Block Map series, the Real Property Accountable Records, facilityspecific drawings, and documents in the base files.

Pesticides. Information on pesticide storage and use was obtained from entomology shop and golf course personnel, the IRP Phase I report, the Pest Management Plan, and the 42nd HOSP/MGPB Industrial Workplace Case Files for the entomology shop and golf course maintenance facility.

Medical/Biohazardous Waste. Information on the generation and disposal of medical/biohazardous waste was obtained from the 42nd HOSP/MGPB and documents in the base files.

Ordnance. The locations of sites on base where the use of firearms or disposal of ordnance may have resulted in residual soil contamination were obtained through interviews with base personnel and a review of historic and current real property records, installation maps, IRP documents, and photographs.

Wastewater Discharges. A review of the base files and various published documents was conducted to determine wastewater treatment and disposal practices on the base.

Limestone and Presque Isle FHUs are serviced by the town of Limestone and city of Presque Isle, respectively. An inventory of historic and existing wastewater treatment systems for the main base and off-site properties was compiled from a review of current and historic Tab G-2, Sanitary Sewer System maps, Real Property Accountable Records, other historic maps and facility-specific drawings, and other listings and documentation contained in the base files.

Radioactive and Mixed Waste. Information on radioactive materials and mixed waste was obtained from IRP reports, the Real Property Accountable Records, the base historian, and the Civil Engineering and Bioenvironmental Engineering Services files.

Nonhazardous Solid Waste. Information on current solid waste disposal practices was obtained from the Loring AFB Conversion and Reuse EIS. Information on past solid waste disposal sites at Loring AFB was obtained from IRP documentation.

Asbestos. Information on facilities with asbestos-containing material (ACM) at Loring AFB was obtained from the partial Basewide Asbestos Survey conducted in 1989, the Asbestos Facility Verification Register Listing, and the Real Property Accountable Records for individual facilities. The Asbestos Facility Verification Register Listing documents the results of

asbestos surveys conducted for buildings on the base prior to renovation or demolition of a facility.

Polychlorinated Biphenyls (PCBs). Information on PCB-containing equipment on the base was obtained from the base environmental and CES personnel, and various other documents in the base files.

Radon. Results of radon testing conducted at Loring AFB as part of the Air Force Radon Assessment and Mitigation Program was obtained from the 42nd HOSP/MGPB.

Lead-Based Paint. Real Property Accountable Records were reviewed to determine which facilities may potentially contain lead-based paint.

2.1.2 Inspection of Properties Conducted

Visual site inspections (VSIs) were performed during the EBS analysis. General visual reconnaissance surveys (VRSs) were conducted over large areas of the base to identify areas with potential environmental contamination or concerns. For some areas of the base, the VRSs consisted of only a windshield survey. More focused VSIs, involving exterior and interior (walk-through) inspections, were conducted at most facilities on the base, including all industrial facilities, to identify readily apparent concerns or attributes. Additionally, the results of a basewide site inspection conducted by Loring AFB in 1991 were also reviewed.

The VSIs of most facilities on the base were conducted to determine or confirm the presence of environmental contamination or concerns, including unusual odors, stained soils, stressed vegetation, evidence of leaching, or other indications of potential contamination. VSIs were conducted for all industrial facilities and most administrative and community (including commercial) facilities. Each facility was evaluated for unique characteristics and potential environmental concerns. The base Real Property Accountable Records (Air Force Forms 1430-1433) were reviewed to identify specific facility characteristics, such as construction materials, utility hookups, renovations, changes in facility utilization, and distinctive features (e.g., emergency electric power generators or storage tanks). More detailed inspections were conducted at those facilities that had been used for industrial purposes or that included specific features such as storage tanks, OWSs, septic systems, or IRP sites. For residential facilities (e.g., dormitories and military family housing), only a representative sample of the facilities was inspected. For many of the administrative and community facilities, only a general walk-through of each facility was conducted.

A list of facilities on the base summarizing key characteristics and facility specific environmental information is presented in Table 5-1. A copy of the form used during the VSIs is presented in Appendix B.

2-6

In addition, for those facilities that contain industrial workplaces tracked by the Bioenvironmental Engineering Services office, a summary of workplace environmental data related to hazardous material use was compiled based on a review of the industrial workplace case files. Some facilities contain multiple industrial workplaces. The summary of workplace environmental data includes a cumulative inventory list of the hazardous materials known to have been used and/or stored in the facility based on available documentation (Appendix C).

2.1.3 Personnel interviews

Primary contacts made during the conduct of the EBS were with personnel from the 42nd CES, 42nd HOSP/MGPB office, and 42nd CEV. Principal CES contacts were made with CEV and Real Estate and Industrial Engineering (CER) personnel, and CES Drafting (CEEE); contact was also made with the Fire Department (CEF), and Operations (CEO) personnel. Personnel from the Defense Reutilization and Marketing Office (DRMO) were also contacted.

During the records search and VSIs, interviews were conducted with base personnel from other organizations, particularly those involved with flightline and other industrial activities, to identify potential environmental concerns related to recent and historic operations at Loring AFB and to verify information found in the records search. A list of personnel interviewed is provided in Table 2-1.

Table 2-1. Personnel Interviewed

Organization	Interviewed
42nd Bombardment Wing	
42nd Supply Squadron	2 Technicians, 3 Managers, 1 Administrator
42nd Transportation Squadron	2 Technicians, 7 Managers
42nd Field Maintenance Squadron	1 Technician, 12 Managers, 1 Administrator
42nd Organizational Maintenance Squadron	2 Managers, 1 Administrator
42nd Munitions Maintenance Squadron	6 Technicians, 8 Managers
42nd Consolidated Headquarters Squadron	1 Technician, 5 Managers
42nd Combat Support Group	11 Managers
42nd Mission Support Squadron	2 Managers
42nd Civil Engineering Squadron	20 Technicians, 9 Managers, 1 Administrator
42nd Security Police Squadron	4 Managers
42nd Services Squadron	7 Managers
42nd Hospital Squadron	2 Managers, 2 Administrators
Tenants and Off-Site Parcels	
Army-Air Force Exchange System	3 Managers
Commissary Sales	1 Manager
102nd Fighter Intercept Wing (DET1)	2 Administrators
1st Combat Evaluation Group (DET7)	2 Managers
2192nd Communications Squadron	2 Technicians, 7 Managers
Civil Air Patrol, Presque Isle	1 Manager
Defense Reutilization and Marketing Office	2 Managers
Moscow-Over the Horizon Radar Site	1 Technician
Columbia Falls-Over the Horizon Radar Site	1 Technician
Limestone Receiver Site	2 Managers
Caribou Communication Site	2 Managers
Blotner Site #1	1 Technician
Caswell Family Housing Unit	1 Technician
Presque Isle Family Housing Unit	1 Technician, 1 Manager

This chapter of the EBS presents the findings of the records search, VSI, and personnel interviews for the main base property and the nine off-site parcels. Section 3.1 provides a history of the base, while Section 3.2 gives a description of the environmental setting of the base, including utilities. Sections 3.3 and 3.4 describe resource findings and conclusions. These sections have been subdivided into discussions for the main base and off-site parcels.

Based on a review of existing documentation and/or the VSI, some sites were identified as potentially requiring remediation. If necessary, remediation of sites not currently undergoing restoration will be accomplished as part of the IRP or other environmental programs.

The data within each resource have been organized into tables, which are provided after Section 3.4.4. The Resource Map is provided as Figure 5-1 (oversized) after Section 5.4. The data listed in the tables and shown on the Resource Map are based on information obtained from Loring AFB during the records search and VSI. Because historic data were incomplete, data gaps are footnoted at the bottom of the tables.

3.1 HISTORY AND CURRENT USAGE

On April 5, 1947, the Army initiated a directive authorizing land acquisition and construction of Limestone Army Air Field. With the creation of the Air Force as an independent agency in September 1947, it was established that once operational, the base would be under the Air Force. The construction period lasted until February 25, 1953, and Limestone AFB became home to the 42nd Bombardment Wing. The base was one of the first to be designed and built to accommodate high speed aircraft, and its layout was different from older, converted Army posts. In late 1953, the Weapons Storage Area operated by the 3080th Aviation Deport Group was renamed Caribou Air Force Station. In September 1954, the U.S. Army activated the 548th Anti-Aircraft Artillery Battalion at several sites on and near the base.

In October 1954, the base was renamed Loring AFB in honor of Charles J. Loring, Jr., a Portland, Maine native, who earned the Distinguished Flying Cross and Air Medal after having spent 5 months in a German prisoner of war camp during World War II. Major Loring died on November 22, 1952 during the Korean War after deliberately diving his damaged aircraft into an enemy artillery installation, thereby destroying it.

In 1955, the mission of the wing expanded with the assignment of KC-135 Stratotanker fueling aircraft to the 42nd Air Refueling Squadron. Under direction from Strategic Air Command (SAC), the base received its first

bombers, B-36 Peacemakers, and in 1956 and shortly thereafter converted to the B-52C Stratofortress. Three years later, the wing converted to the B-52G model, which continued to operate at Loring AFB for more than 30 years.

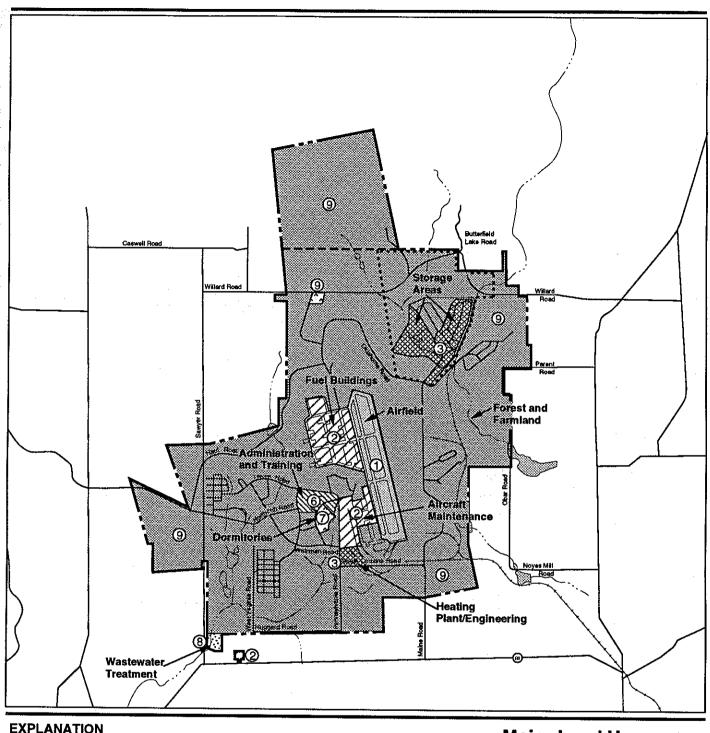
By the end of 1961, the former Presque Isle AFB had closed and its personnel were reassigned to Loring AFB. In July 1962, control of the Caribou Air Force Station was transferred to SAC. In 1966, the Air Force transferred to the Army most of its property north of Willard School Road and, in turn, received from the Army four family housing areas located throughout the region.

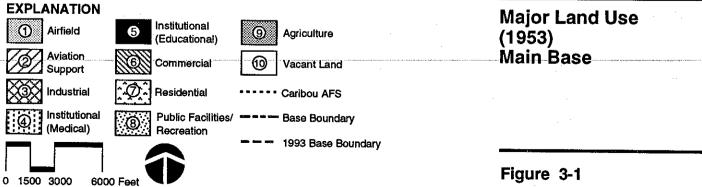
Loring AFB was considered for reduction to a forward operation base in 1976, when the Air Force announced its intention to deactivate the 42nd Bombardment Wing. Several environmental and socioeconomic documents and studies were prepared in the next 3 years. This decision was retracted in 1979 and several capital improvements were made to the base during the 1980s.

The 42nd Bombardment Wing was deployed in support of Operation Desert Storm in 1991. As part of the 4300th Provisional Bomb Wing, the wing supported B-52 operations in the Middle East against Iraq. The base came under the control of the Air Combat Command (ACC) in June 1992, with the disestablishment of SAC.

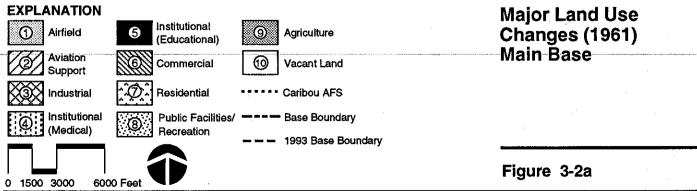
Prior to development of the base, Loring AFB and the surrounding area consisted primarily of forested lands and farmland. Much of the property for the main base was acquired in 1947, 1948, and between 1950 and 1953, which included the Limestone Receiver Site, located south of the base, on State Highway 89. At the time the base opened in 1953, major land uses included the airfield, which, although operational, was not complete, and aviation support areas (taxiways, fuel buildings, maintenance hangars, and the off-site Limestone Receiver Site) (Figure 3-1). Other land uses included the industrial areas associated with the weapons and waste storage areas of Caribou Air Force Station located in the northeast quadrant of the Air Force property, the heating plant and engineering shops located southwest of the airfield, administration and training areas in the central portion of the base and the adjacent dormitories, and the public facility use associated with the wastewater treatment plant in the extreme southwest corner of the base. Uncleared land remained mostly forested or in agricultural production.

With the expansion of the mission and growth of the base's population, new facilities were built and other sites were acquired. Major land use changes during this time reflect the growth of the base (Figure 3-2a). Two family housing areas were developed with an adjacent elementary school, and more aircraft maintenance hangars were added adjacent to the existing taxiway system. The airfield was lengthened, and additional industrial storage and









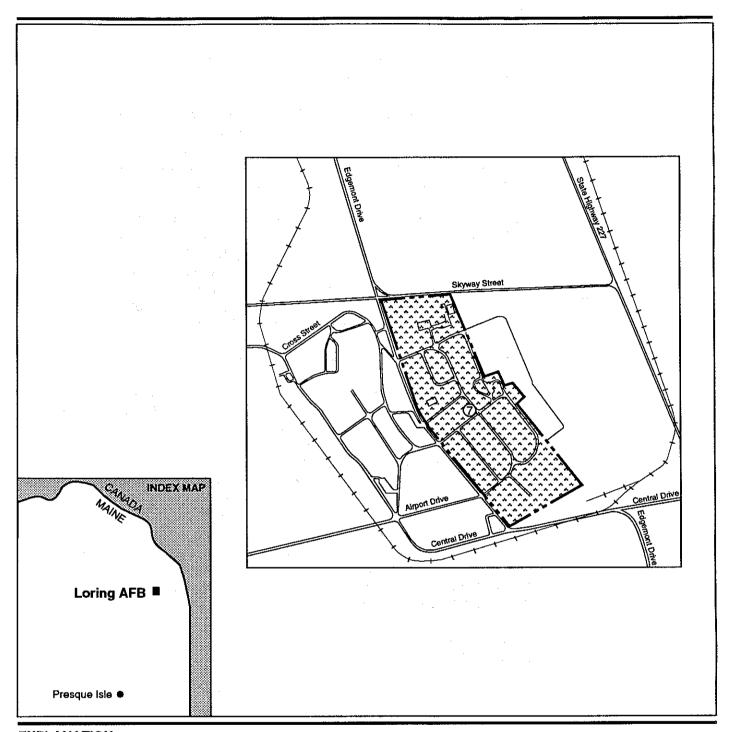
administration space was added to the base inventory. For recreation, a nine-hole golf course was developed in the northwest portion of the base.

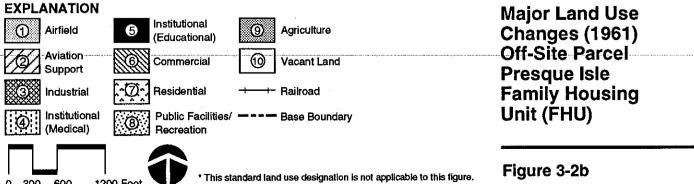
With closure of Presque Isle AFB in 1961, personnel and equipment were transferred to Loring AFB, including a family housing area, built in 1958 (Figure 3-2b). At that time, a portion of the Little Madawaska River west of the base was acquired, and a reservoir and filtration plant were developed to supply the increase in water used by the base (Figure 3-2c).

Development of the base slowed in the 1960s, but changes continued. In 1962, the Weapons Storage Area (WSA) (Caribou Air Force Station) was transferred to SAC and became a part of Loring AFB. In 1966, some areas to the north of Willard School Road were transferred to the Army (Figure 3-3a), and at the same time, four Army parcels, each containing 16 FHUs, were transferred to Loring AFB. These are located in the city of Caribou and the towns of Limestone, Caswell, and Connor (Figure 3-3b). In 1969, the Army also transferred to Loring AFB the Caribou Communication Site, which included administration buildings and a recreation court (Figure 3-3c).

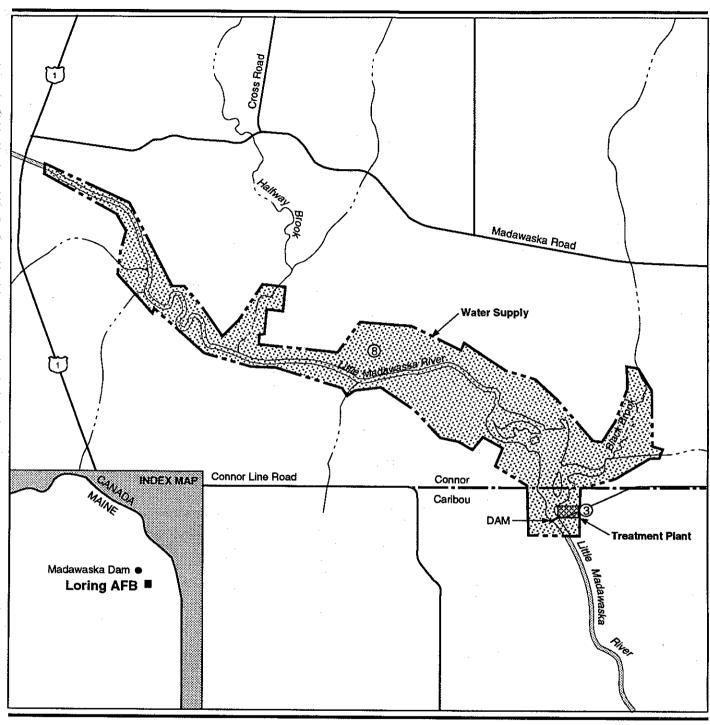
Very few improvements were made to the base in the 1970s while closure status was pending. Once the decision to reduce Loring AFB was retracted, however, another site was acquired by the base for electronic warfare exercises, the CEVG Site in Ashland. In addition, many other improvements were made to the base throughout the 1980s, including expanded aviation support and industrial areas, new community areas and a dormitory complex, an institutional (medical) land use associated with a 25-bed hospital, and developed recreation areas. Existing land uses for the on-site area include the airfield and its associated clear zones, and portions of the base which remain in agriculture and forested land (Figure 3-4a). Existing land uses at the off-site parcels include residential at the five FHUs (Figure 3-4b), public facilities and industrial at the Madawaska Dam parcel (Figure 3-4c), commercial and recreation at the Caribou Communication Site, and the commercial land use associated with administration buildings located at the Ashland CEVG Site (Figure 3-4d). Loring AFB is scheduled to close on September 30, 1994.

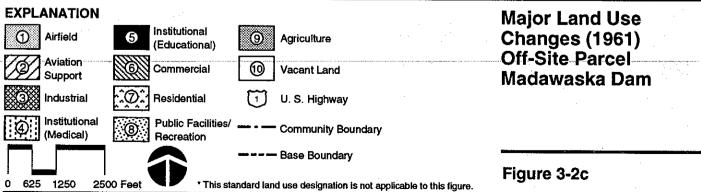
The area that now comprises the main base and nine off-site parcels at Loring AFB includes 146 parcels acquired by transfer fee purchase or Declaration of Taking between 1947 and 1979. A recorded chain of title search was conducted for on-base parcels to determine prior ownership or uses that could reasonably have contributed to an environmental concern. The title search included ownership of parcels from June 1933 through June 1993. A review of the data obtained from the title search did not identify any areas of environmental concern related to past property usage. A description of each parcel is provided in Appendix D.

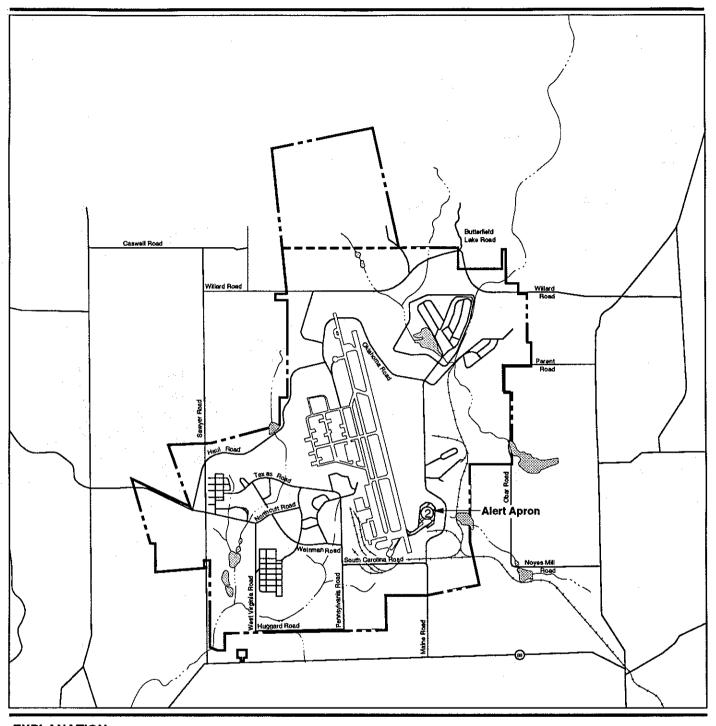


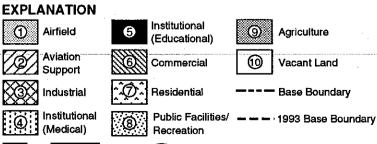


300









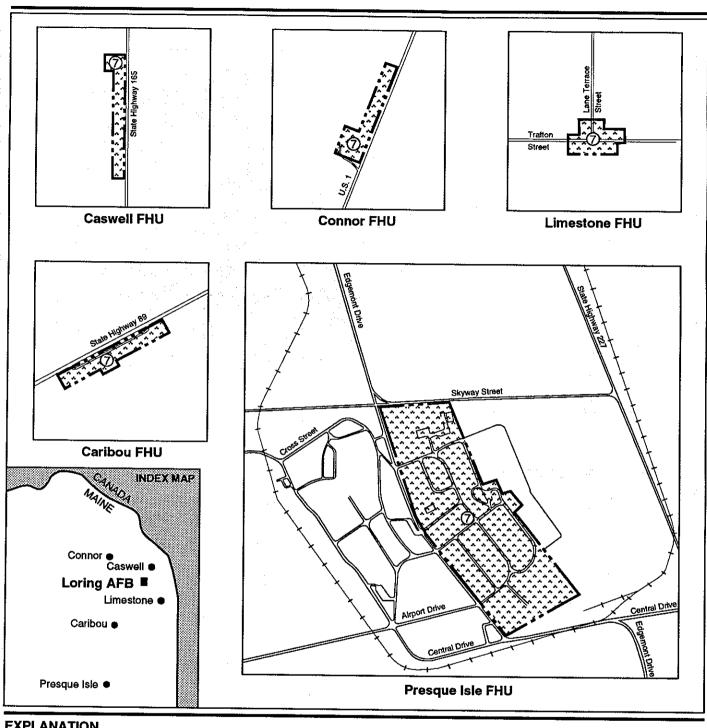
Major Land Use Changes (1972) Main Base

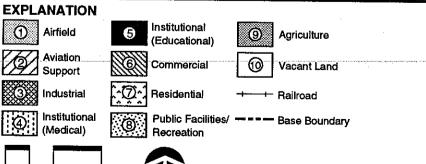
Figure 3-3a

0 1500 3000

6000 Feet

Note: Detail of Limestone Receiver Site on Figure 3-3c





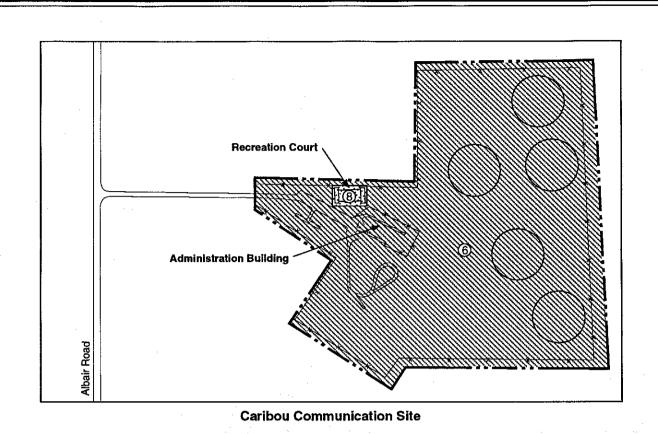
Major Land Use Changes (1972) Off-Site Parcels Family Housing Units (FHUs)

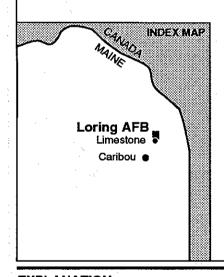
Figure 3-3b

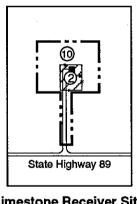
1200 Feet

300

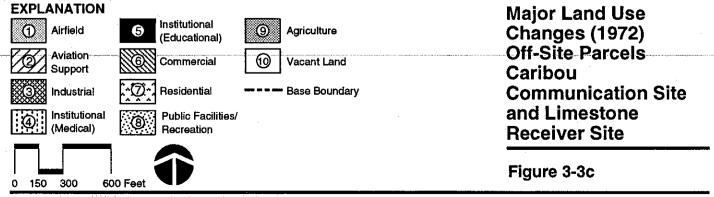
* This standard land use designation is not applicable to this tigure.

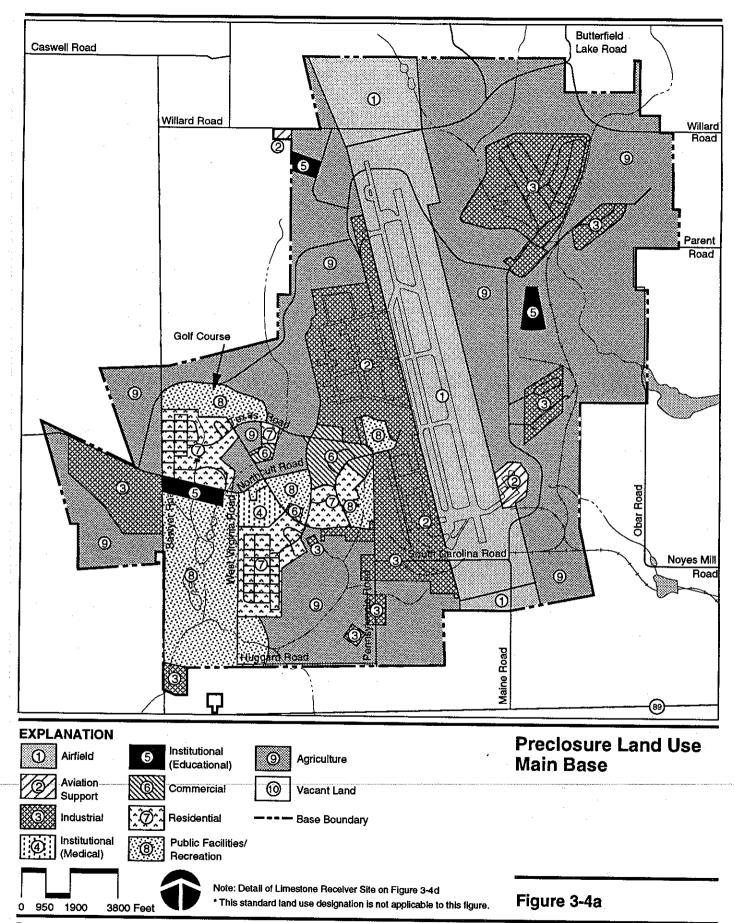


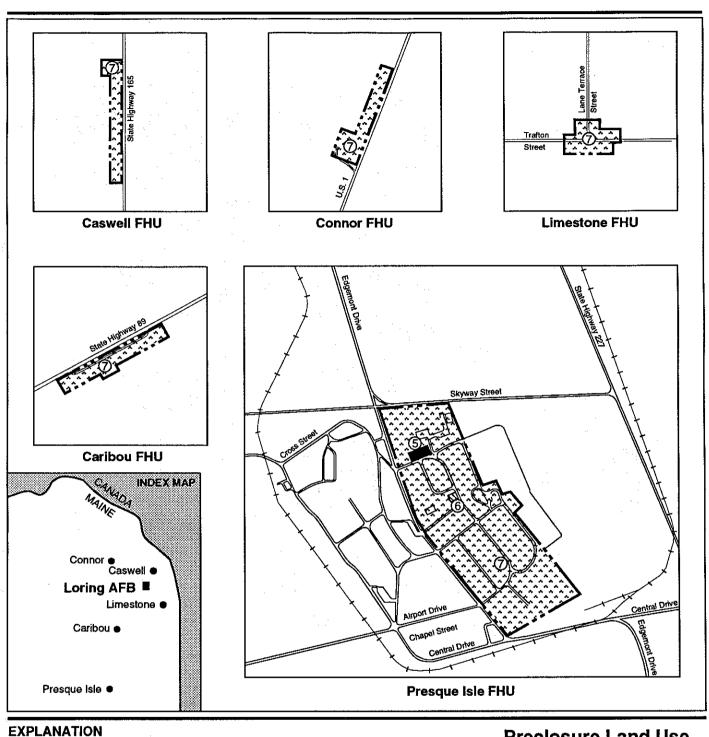


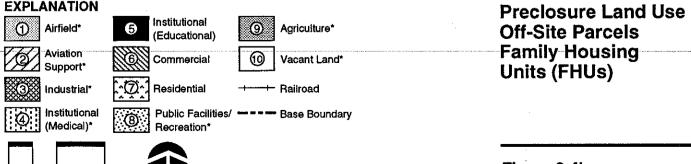


Limestone Receiver Site





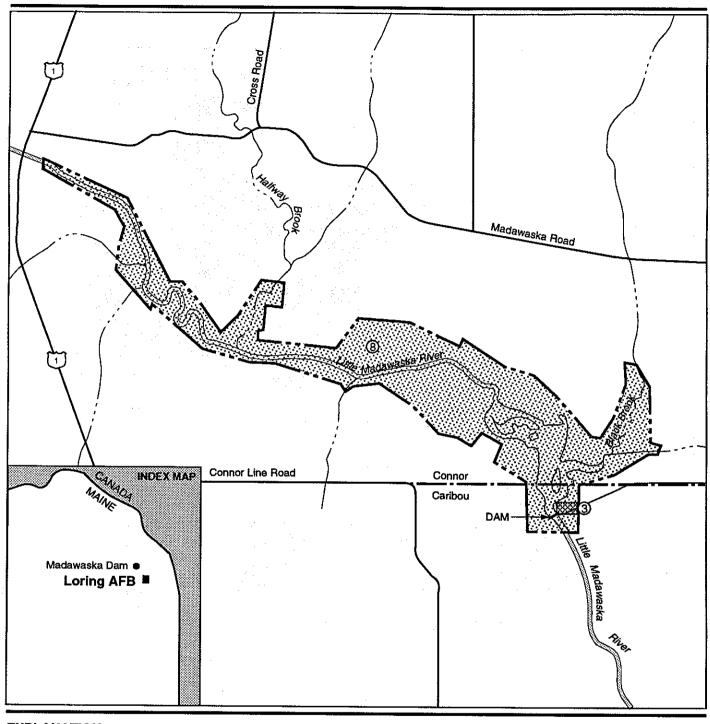


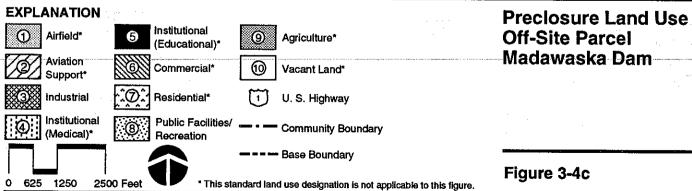


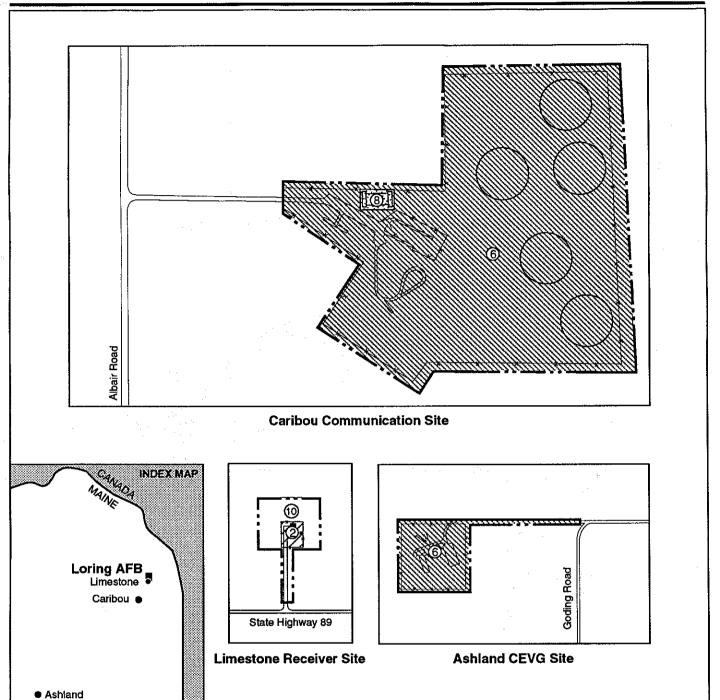
300 600 1200 Feet

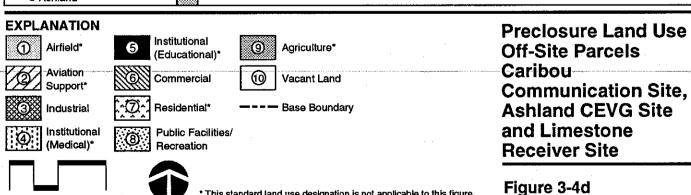
* This standard land use designation is not applicable to this figure.

Figure 3-4b









150 3-14

* This standard land use designation is not applicable to this figure.

Historical facility usage at the base was also researched. Facilities that were converted to accommodate different uses, as well as facilities that have been demolished, are listed in Appendix E.

3.2 ENVIRONMENTAL SETTING

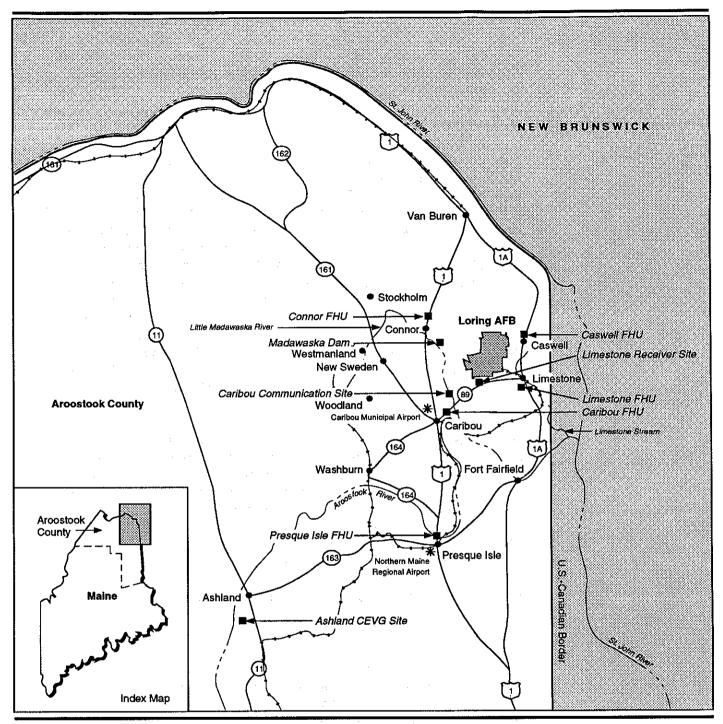
The main base portion of Loring AFB is located in the northeastern corner of Maine, in Aroostook County, approximately 5 miles west of the Canadian border at New Brunswick, Canada, and 400 miles north of Boston (Figure 3-5). The on-site area totals 8,702 acres and is located 5 miles northeast of Caribou, Maine, and 18 miles north of Presque Isle, Maine. The topography of the base is gently rolling, with several brooks cutting through the terrain. The main base elevations range from 746 feet above mean sea level (MSL) on the main runway to approximately 570 feet above MSL in the southeast portion of the base. The average main base elevation is 650 to 700 feet above MSL. Nine off-site parcels, totaling 780 acres, are geographically separated from, but integral to, the mission of Loring AFB and are scattered throughout various portions of Aroostook County. Topography of these parcels is rolling, with elevations ranging from 400 feet above MSL along the Aroostook River in Caribou, to approximately 750 feet above MSL near Ashland.

The climate in northern Aroostook County is a severe continental type, with frigid winters and cool summers. July is the hottest month of the year with an average maximum daily temperature of 76°F. The coldest month is January with an average minimum daily temperature of 0°F. The average annual precipitation is over 36 inches, which occurs predominantly in summer and autumn. The average annual relative humidity varies within the 60- to 80-percent range. In this region, flooding can occur during periods of prolonged heavy rainfall and during spring thaws.

The utilities provided to Loring AFB are briefly described below.

Water Supply

Main Base. The main base obtains water for domestic and industrial uses from a reservoir on the Little Madawaska River. The reservoir is formed by Madawaska Dam, and both are within the Madawaska Dam parcel, a 606-acre area developed by the Air Force in 1958. The rock-fill dam was built in 1960. Water is pumped from the reservoir to the Madawaska Dam treatment facility where it is filtered, chlorinated, and piped to the main base. The facility has a treatment capacity of 2.3 million gallons per day (MGD). The base also has 18 wells that can provide untreated domestic or industrial water. Most of the wells were abandoned after 1960 when Madawaska Dam was built; five wells remain in use and can produce 0.45 MGD.





- (1) U.S. Highway
- (11) State Highway
- Off-Site Parcel
- * Airport

---- Bangor and Aroostook Railroad



Regional Map

Figure 3-5

Water is stored on the base in five storage facilities: a large underground reservoir (approximately 1,000,000 gallons), two ground level tanks (1,152,000 gallons and 75,000 gallons), and two elevated towers (500,000 gallons each). Total storage capacity of these facilities is 3,227,000 gallons. In addition, emergency fire protection water is stored in an underground reservoir in the runway area (750,000 gallons).

Off-Site Parcels. The Madawaska Dam area obtains water directly from the water treatment system. The Caswell and Connor FHUs, Caribou Communication Site, the Limestone Receiver Site, and the Ashland CEVG Site obtain potable water from individual wells. The Presque Isle, Limestone, and Caribou FHUs are serviced by the communities in which they are located, and their sources of water are described below.

The city of Presque Isle obtains water from the Presque Isle Stream. The treatment system is standard coagulation and filtration/chlorination with a maximum capacity of 2.16 MGD.

The town of Limestone obtains water from impoundments on Limestone Stream and Silver Spring Brook. The treatment system is standard coagulation and filtration with a maximum capacity of 0.28 MGD.

The city of Caribou obtains water from the Aroostook River. The treatment system is filtration/chlorination with a maximum capacity of 1.90 MGD.

Wastewater

Main Base. The base wastewater treatment plant (WWTP) is located near Sawyer Road, 2 miles southeast of the cantonment. The WWTP includes sludge drying beds, a chlorine disinfection building, a dechlorination chamber, a gravity thickener, two secondary clarifiers, two vacuators, two digesters with sedimentation tanks, emergency storage, and a sludge dewatering facility. The facility provides primary and secondary treatment for all main base wastewater and can treat up to 6.6 MGD. Treated water is discharged off site into the Little Madawaska River about 2 miles west of the treatment facility. The treatment facility is operating under a National Pollutant Discharge Elimination System (NPDES) permit issued March 14, 1993.

Fifteen active and inactive on-site wastewater treatment systems are located on Loring AFB. These sites are shown on Figure 5-1 and include: the conventional munitions shops (Facilities 368 and 9010), a water pump station (Facility 1200), West Gate Visitor Center (Facility 1500), the liquid fuels pump station (Facility 7800), East Gate (Facility 7992), DRMO (Facility 8935), a weather observation facility (Facility 8000), the runway supervision unit (Facility 8010), the Former Jet Engine Test Cell (Facility 8450), east base storage (Facilities 8950 and 8951), family recreation (Facility 8968),

the Alert Facility (Facility 8970), and the coal/storage area (Facility 14220). An inactive wastewater holding tank is located at the Tactical Air Command alert area (Facility 8410).

Off-Site Parcels. The Connor FHU, the Limestone Receiver Site, and the Madawaska Dam area have individual on-site wastewater treatment systems; the Presque Isle, Limestone, and Caribou FHUs are connected to community sewage facilities. Inactive wastewater treatment systems remain in place at the Caribou and Caswell FHUs, the Caribou Communication Site, and the Ashland CEVG Site.

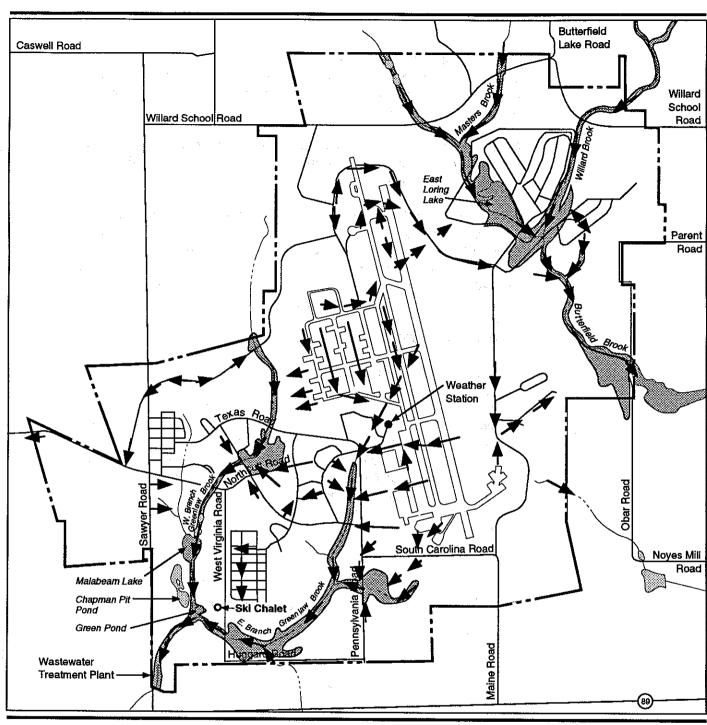
The city of Presque Isle has a secondary treatment facility with a maximum capacity of 5.4 MGD. All of the flow handled by the facility is from nonindustrial sources. Like many local communities, Presque Isle has frequent high flows due to infiltration/inflow problems, which result primarily from foundation drains, roof drains, and other unauthorized connections. The city is studying ways to resolve these problems.

The town of Limestone has a secondary treatment facility with a design capacity of 0.30 MGD. Much of the flow is due to groundwater infiltration and storm water inflow, which frequently cause flow to exceed capacity. The storm water inflow problem will be reduced in the future by requiring disconnection of roof and cellar drains from the sewerage system.

The city of Caribou has an innovative secondary treatment facility with a reed bed sludge disposal system. The facility has a maximum capacity of 4.5 MGD.

Drainage Patterns

Main Base. The Aroostook River eventually receives flow from all of the properties at Loring AFB (Figure 3-6). The main base is situated on a gently sloping plateau on a drainage divide between tributaries of the Aroostook River. The runway is located approximately at the crest of the divide. Drainage from the runway and areas west of the runway is collected by Greenlaw Brook. In addition to receiving flow from several ditches and culverts draining the western portion of the base, Greenlaw Brook has two primary tributaries, which merge in the southwest portion of the base. The East Branch of Greenlaw Brook collects most of the runoff from the flightline and the runway. The West Branch of Greenlaw Brook drains parts of the housing and cantonment areas. Greenlaw Brook also receives discharge from the WWTP located in the southwest corner of the base. Greenlaw Brook exits the base, flowing southwest, and discharges into the Little Madawaska River, which eventually flows south into the Aroostook River.







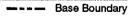
100 Year Flood Plain



State Highway

Surface Hydrology Main Base

Direction of Drainage





Surface Water





Figure 3-6

The east side of the main base is drained by Butterfield Brook, its primary tributary Willard Brook, and several smaller drainage ditch tributaries. Butterfield Brook, flowing southeast, discharges into Limestone Stream, which enters the Aroostook River in New Brunswick, Canada.

Off-Site Parcels. Off-site parcels drain into several streams and rivers that ultimately discharge into the Aroostook River. Drainage from the Limestone Receiver Site is to Greenlaw Brook, and the Ashland CEVG Site drains into Squaw Pan Stream, which eventually flow into the Aroostook River. The Little Madawaska River receives runoff from the Caribou Communication Site, the Madawaska Dam parcel, and the Connor FHU. Drainage from the Caswell FHU enters Lavoie Brook, which then discharges into Limestone Stream, which also receives runoff from the Limestone FHU. The Presque Isle FHU discharges runoff into Presque Isle Stream, and the Caribou FHU drains directly to the Aroostook River.

Nonhazardous Solid Waste

Main Base. Nonhazardous solid waste is hauled off base and placed in the Tri-Community Recycling and Sanitary Landfill in Fort Fairfield. This landfill received an average of 110 tons per day in 1991 and is scheduled for closure in 1994. A new landfill is planned adjacent to the existing one. Coal ash from the power plant is sent to the Presque Isle landfill. The base recycles scrap metals (steel, copper, stainless steel) by sale through the DRMO. Biohazardous/medical wastes are burned in the hospital incinerator and the ash is disposed of as a special waste through a contractor to a permitted landfill. The base also utilizes a construction debris landfill. The landfill is less than 1 acre in size and is located at the south end of Pennsylvania Road. Wood waste materials are segregated and burned.

Off-Site Parcels. Nonhazardous solid waste from all off-site parcels is disposed of in either the Tri-Community landfill or Presque Isle landfill.

Electricity

Main Base. Maine Public Service Company delivers electricity through a 69-kilovolt-ampere transmission line. The on-base substation and the distribution system are owned by the Air Force. Feeder lines emanate from the substation and supply electricity throughout the base via overhead and underground services.

Off-Site Parcels. Maine Public Service Company supplies electricity to all nine off-site parcels.

Natural Gas

Main Base. No natural gas service is provided to the main base; coal, propane, and fuel oil are used. Coal is burned in the central heating plant on base. Residential units are heated with fuel oil. Fifty-three propane tanks are located at various facilities throughout the base, including some Wherry housing units.

Off-Site Parcels. No natural gas service is provided to any of the off-site parcels. Facilities are heated with fuel oil.

3.3 PROPERTY CATEGORIZATION RESOURCES

The following section describes resources used in property categorization. Items within each resource have been given a specific resource category. Findings for each resource were then reviewed to obtain the overall property category (see Table 5-1).

Category 2 through 7 properties were identified based upon the methodology presented in Chapter 2. All remaining areas were determined to be Category 1.

Areas that stored hazardous materials and/or generated hazardous waste were considered Category 2 unless a suspected or confirmed release was identified. These include dormitories and offices where it is likely that household or office products containing hazardous substances were stored.

Category 3 designations for the airfield were based upon existing documentation (e.g., personnel interviews, VSIs, written information). No known spills occurred within these areas; however, based on the activities that took place over time, minor releases associated with aircraft operations may have occurred. Contaminant levels, if present are considered to be below action levels.

Areas where known or suspected contamination has occurred were classified as Category 4 through 7 properties based upon the current program status. In addition, new areas of potential contamination identified as a result of this EBS were classified as Category 7.

3.3.1 Hazardous Substances

3.3.1.1 Hazardous Materials/Petroleum Products Management

Main Base

Hazardous materials commonly utilized at Loring AFB include aviation and motor fuels; various grades of petroleum, oil, and lubricant (POL) products;

industrial solvents and cleaners; hydraulic fluids; deicing fluids; paints; thinners; and pesticides (see Section 3.3.5).

Base records were reviewed to identify quantities and types of hazardous materials stored in base facilities. Appendix C identifies historical data on hazardous materials (including types and quantities) for facilities that are known to have stored these substances (Table C-1).

Properties were evaluated based upon whether storage of hazardous materials exceeded the quantities specified in 40 Code of Federal Regulations (CFR) 373.2, U.S. Environmental Protection Agency's (EPA's) Hazardous Substance Reporting Requirements for Toxin at Federal Facilities, or the hazardous substance reportable quantities under CERCLA listed in 40 CFR 302.4. Of the 119 facilities at Loring AFB that stored hazardous substances, 40 stored 1,000 kilograms (kg) or more or the substance's CERCLA reportable quantity (Table C-2). Table 5-1 lists the locations and Figure 5-1 plots the locations of facilities in which hazardous materials were stored. A list of former facilities that may have utilized hazardous material and/or petroleum products is provided in Appendix E.

Based upon the methodology presented in Chapter 2, no evidence of a release occurring was identified at 180 of the 190 facilities; therefore, they are considered Category 2. A known release was identified at the ten remaining facilities. The release was determined to be below remediation action levels; therefore, these are considered Category 3 properties. These facilities are discussed within Hazardous Waste/Petroleum Waste Management or IRP Sites Identified to Date (Sections 3.3.1.2 and 3.3.2, respectively). Specific resource categories for these facilities are listed in Table 5-1. Storage of petroleum products is discussed in Section 3.3.3.

Off-Site Parcels

With the exception of the Auto Hobby Shop located in the Presque Isle Dormitory (Facility 100), which used hazardous materials and petroleum products, no hazardous materials or petroleum products are or have been used or stored at any of the off-site parcels.

Off-site FHUs are considered Category 1 since no storage of hazardous materials was identified at these sites. Based on the methodology presented in Chapter 2, no evidence of a release was identified at the Ashland CEVG Site, the Limestone Receiver Site, the Caribou Communication Site, and the Auto Hobby Shop-located at the Presque-Isle FHU; therefore, they are considered Category 2 properties. Specific resource categories for these facilities are listed in Table 5-1. Storage of petroleum products is discussed in Section 3.3.3.

3.3.1.2 Hazardous Waste/Petroleum Waste Management

Main Base

The following discussion relates to management practices and facilities used pursuant to the requirements of RCRA (enacted in 1978). Waste management practices in use prior to RCRA's requirements are, to the extent that they caused or contributed to environmental contamination, primarily the subject of the Air Force's IRP program. Hazardous wastes generated at Loring AFB include waste oils, fuels, wastewater treatment and OWS sludge, PCBs, corrosives, batteries, and solvent residues. Base records were reviewed to identify quantities and types of hazardous wastes generated or stored in base facilities. There are 65 facilities that generated or stored hazardous waste.

An historical overview of accumulation points and types of wastes stored at Loring AFB is provided in Table 3-1. Figure 5-1 shows the locations of facilities in which hazardous wastes were generated or stored.

The Environmental Management Flight oversees the management of hazardous wastes generated at Loring AFB. Currently, 15 satellite accumulation points and 2 90-day accumulation points are located throughout the industrial areas of the base. In the past, approximately 30 accumulation points and additional satellite accumulation points were known to have been in operation at Loring AFB. Table 3-1 provides an inventory of both active and inactive accumulation points. Sites designated as satellite accumulation points can store up to 55 gallons of hazardous waste for an indefinite period of time. Once the 55-gallon limit is reached, the waste must be transferred to an accumulation point within 72 hours. Hazardous wastes generated at these sites are collected and transferred to the DRMO accumulation point (Facility 405) in the northeast portion of the base. This facility acts as a temporary storage facility for hazardous wastes prior to disposal off base. The DRMO facility and the base laundry (Facility 7330) are the only accumulation points at Loring AFB that can store an unlimited amount of hazardous waste for up to 90 days. The base is currently operating under a hazardous waste generator status; therefore, no state permit is issued and wastes generated are stored at on-site accumulation points for no longer than 90 days.

Loring AFB initially operated under a Part A permit, which was issued in 1981 for five on-base facilities, including: the central heating plant (Facility 7310), the WWTP (Facility 1800), a drum storage bunker (Facility 9081), and two PCB storage bunkers (Facility 8956 and 9062). The three latter facilities are located in the east Loring area and are presently undergoing a state-approved RCRA closure proceeding. Additionally, the battery shop (Facility 8262) was recently closed as a licensed facility under RCRA. This closure has been approved by the state.

Loring AFB generated an average of 250,000 pounds of hazardous, nonhazardous, and special wastes in 1989 through 1990. These wastes included contaminated fuels, solvents, PCBs, spill residues, OWS sludges, paint, and thinners. In 1991 and 1992, only 200,000 pounds (approximately) was generated, and in 1993 wastes generated declined to approximately 175,000 pounds. Non-RCRA wastes are defined as wastes excluded from hazardous waste regulations and include recyclable wastes. Special wastes are defined by the state as wastes that are neither listed nor have the characteristics of hazardous waste but still need to be managed to prevent harm to human health and the environment (e.g., motor oils, hydraulic fluids, and synthetic oils). Waste oils generated at the vehicle maintenance shop (Facility 7500) and the aircraft maintenance shop (Facility 8713) were burned on site as heating fuel during the winter months until 1992.

Facilities that generated or stored hazardous wastes were physically inspected during October 1992. Areas where staining and/or stressed vegetation were noted are summarized below.

- Floor staining was identified at Facility 6570 (Auto Hobby Shop) under ASTs.
- Stained soil was observed in ditch immediately south of Facility
 7820 in Fuel Tank Farm.
- Staining was identified in Pumphouse 8112.
- Extensive floor stains related to vehicle maintenance were identified at Snow Barn (Facility 8390).
- Recent staining was observed at Facility 8629 (Nose Dock).
- Floor drains in Facility 3633 (Nose Dock) were noted to have surface staining and sludge.
- Stains were identified on hangar floor and fuel hydrant switching station pit, Facility 8634 (Nose Dock).
- Stressed vegetation was observed southeast of Facility 8705.
- Oil stains and stressed vegetation were identified at Facility 8935 (DRMO).

Loring AFB is licensed to operate a silver recovery unit for treating photochemical wastes. These wastes are or were generated at four locations at Loring AFB: the hospital X-ray (Facility 3502), dental X-ray (Facility 3502), the base photographic laboratory (Facility 5055), and the non-destructive inspection laboratory (Facility 8250). As recently as

3-24

November 1993, wastes were collected and brought to the hospital X-ray unit for treatment. However, the hospital treatment unit has been taken out of service and all photochemical wastes are now taken to the base photographic laboratory following treatment; the effluent is discharged to the sanitary sewer with sampling conducted monthly to ensure that the silver content is below 5 ppm.

Based on the methodology presented in Chapter 2, no evidence of a release occurring was identified at 63 of the 66 facilities; therefore they are considered Category 2. The two PCB storage facilities and a drum storage facility have undergone RCRA closure and are considered Category 4. Specific resource categories for facilities that generated or stored hazardous waste are listed in Table 5-1 and shown on Figure 5-1. Storage of petroleum wastes is discussed in Sections 3.3.3 and 3.3.4.

Off-Site Parcels

Non-RCRA spill residues generated at the Ashland CEVG Site and special wastes generated at the Auto Hobby Shop at Presque Isle FHU were delivered to and stored by DRMO and disposed of off base prior to the off-site closure. No hazardous wastes (RCRA waste) or petroleum wastes have been generated at any off-site parcel.

No evidence of contamination associated with hazardous waste/petroleum wastes was identified for the off-site parcels at Loring AFB. Therefore, these facilities are considered Category 1 for this resource. Storage of petroleum wastes is discussed in Section 3.3.3.

3.3.2 IRP Sites Identified to Date

The IRP was established to identify, characterize, and remediate CERCLA-related contamination on Air Force installations. The program is designed to evaluate past disposal sites, control the migration of contaminants, and control potential hazards to human health and the environment. The Loring IRP activities conducted prior to 1991 are discussed in Appendix F.

Main Base

Since the announcement of the closure of Loring AFB scheduled for September 30, 1994, the Federal Facility Agreement (FFA) has been renegotiated to reflect base closure, Operable Unit (OU) designations, and accelerated schedules. On January 15, 1993, the Air Force, U.S. EPA Region 1, and Maine Department of Environmental Protection (MDEP) agreed to a revised schedule, which is now the only enforceable schedule. The new FFA including some language change is expected to be signed by all parties in the near future.

Fifteen OUs have been developed to better manage the IRP at Loring AFB. The majority of the OUs (i.e., OU-1, OU-2, OU-2a, OU-5, OU-6, OU-7, OU-7a, OU-8, OU-9, OU-10, and OU-11) were developed to target source areas (soils) at sites within specific geographic areas of the base. OU-1, and OU-7a also include assessment and remediation of groundwater at the Low-Level Radioactive Waste Disposal Site, and the Limestone Receiver Site. The remaining source area OUs include the landfills and disposal areas (OU-2 and OU-2A); the Nose Dock Area, Base Exchange service station, and Former Jet Engine Test Cell (OU-5); the Railroad Maintenance Yard, and the East Gate Waste Storage Tank and Fuel Drop sites (OU-6); the Quarry (OU-7); the Fire Training Area and Underground Transformer Site (OU-8); the north and south flightline areas (OU-10 and OU-9); and the coal storage area, Fly Ash Disposal Areas, and Fuel Tank Farm/maintenance areas (OU-11). Sites are undergoing Preliminary Assessments/Site Investigations (PA/SI) as part of OU-3 to determine if they should be classified as an area of concern (AOC). OU-4 was developed to expedite the assessment/remediation of possible groundwater contamination at the landfills. OU-12 was established to manage the assessment/remediation of basewide groundwater quality, while OU-13 was established to manage the assessment/remediation of surface water bodies on base.

The OU schedule was developed partially based on the status of the RI/FS progress for a particular OU. For example, the field work to support the RIs for OU-2 and OU-6 is complete. Therefore, in order to accelerate the program, the RI/Focused FSs were conducted and were the first documents to be delivered under the revised FFA. In addition, 60 percent designs were completed for OU-2 and OU-6 prior to the development of the Proposed Plan and Record of Decision in order to meet the Air Force goal of having as many Remedial Actions (RAs) in place as possible at the time of base closure. Other OUs were also conceived based on geographical proximity, contaminant similarity, or anticipating similar remedial technologies.

An AOC Screening Process Review and Evaluation was conducted in December 1992. This evaluation reviewed RCRA/CERCLA documentation to determine if sites were correctly designated as AOCs, as specified in the FFA. The RCRA/CERCLA documentation review resulted in a recommendation to add two sites as AOCs. The Coal Storage Area and Fly Ash Disposal Site were added to OU-11.

A major initiative at Loring AFB was to program and fund all required fieldwork for all OUs for the 1993 field season. To expedite the field program planning, several brainstorming sessions were held with the project team; work plans were developed by OU and submitted to the regulators for final concurrence. Additional contractors and drilling crews were required to support this effort. Work plans were developed to minimize the possibility of data shortfalls. The only fieldwork planned for 1994 is in support of OU-3, OU-4, OU-12, and OU-13. In addition, Interim Remedial Action (IRA)

and treatability study (TS) activities were initiated during the 1993 field session and included an evaluation of free product at the Former Jet Engine Test Cell and at the Fuels Tank Farm and a bioventing project at the Base Exchange Service Station.

Since July 1991, base Environmental Management personnel have been conducting comprehensive aerial photograph study/site visits for all open or forested land on base. These studies identified 17 sites that require additional investigation as part of OU-3. A PA/SI was conducted during the 1993 field season and consisted of a comprehensive records review and site investigation of the 17 sites. A PA/SI report has been submitted for 15 of the sites. The remaining two sites will be incorporated in the PA/SI report at a later date, pending the completion of fieldwork. An additional PA is under way at the Base Laundry as part of OU-11. As restoration and compliance activities continue at Loring AFB, additional sites may be discovered. However, at this time the base has no plans to perform additional formal PA/SI activities.

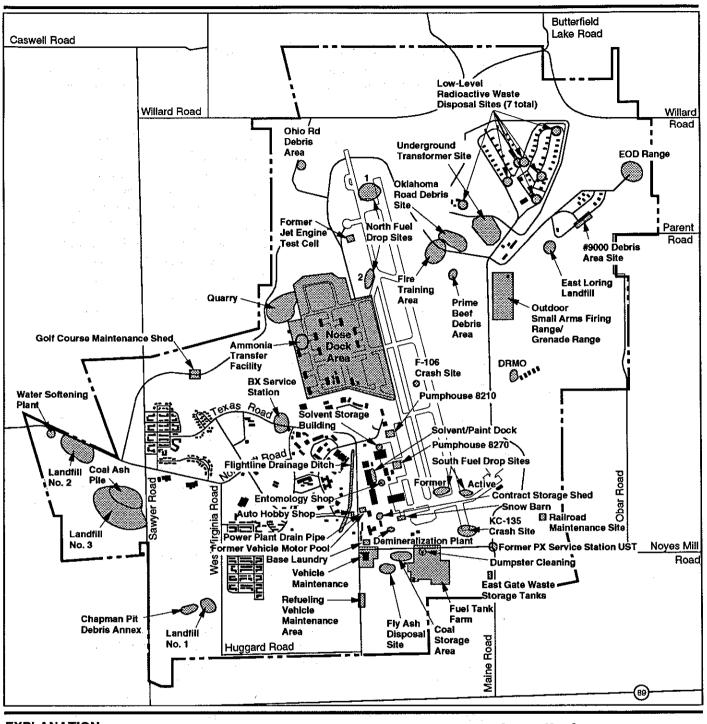
Figures 3-7 and 5-1 identify the IRP sites at Loring AFB, while Table 3-2 provides a brief description of each site.

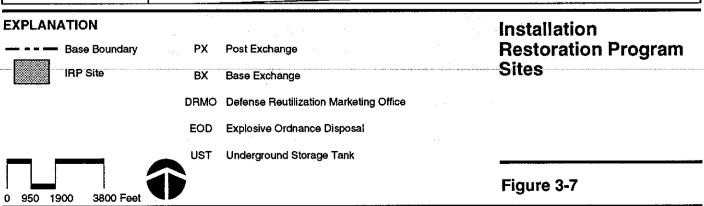
In addition to the mandates of the IRP, the Air Force must also comply with the provisions of CERCLA Section 120(h) and CERFA, prior to the transfer of any property at Loring AFB. CERCLA Section 120(h) requires that, before property can be transferred from federal ownership, the United States must provide notice of specific hazardous waste activities on the property and include in the deed a covenant warranting that "all remedial action necessary to protect human health and the environment with respect to any substance remaining on the property has been taken before the date of such transfer." Furthermore, the covenant must also warrant that "any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States."

Of the 52 IRP sites identified at Loring AFB, 6 sites have undergone some remediation measures and, therefore, are considered Category 5 properties; 23 sites, or portions of sites, have confirmed contamination and are undergoing an RI/FS and are considered Category 6 properties; 17 sites are undergoing PAs to determine the presence or absence of contamination and are considered Category 7 properties; 6 additional sites are awaiting state approval of a no further action recommendation, and are therefore considered Category 7 properties. Specific resource categories for IRP sites are listed in Table 3-2.

Off-Site Parcels

The Limestone Receiver Site, south of Loring AFB, has been identified as an IRP site. This site has known soil and groundwater contamination and is





considered a Category 6 property (see Table 3-2). This site is discussed above, and is shown on Figure 3-7.

3.3.3 Storage Tanks

The following sections describe the findings for ASTs and USTs based on the records search and VSIs. It should also be noted that the removal of storage tanks at Loring AFB is an ongoing process and that the data provided below and in Tables 3-3 and 3-4 were current as of October 1993. An overview of pipelines, hydrant fueling, and transfer systems is also provided. Findings for OWSs are discussed in Section 3.3.4.

3.3.3.1 Aboveground Storage Tanks

Main Base

Table 3-3 summarizes the history and status of the 184 ASTs at Loring AFB, and Figure 5-1 shows their locations.

The largest ASTs are utilized for storing heating oil and JP-4, and are located in the bulk fuels storage yard in the southern portion of the main base. Bulk heating oil is stored in two tanks with a total capacity of 3.4 million gallons. Three JP-4 ASTs with a total capacity of almost 8 million gallons are supplied by an 8-inch underground pipeline which is operated by the Defense Fuels Supply Center and originates in Searsport, Maine.

Based upon the methodology presented in Chapter 2, no evidence of a release occurring was identified for any of the 184 ASTs during facility inspections; therefore they are considered Category 2. Specific resource categories for these tanks are listed in Tables 3-3 and 5-1, and locations are shown in Figure 5-1.

Off-Site Parcels

Table 3-3 summarizes the status of 245 ASTs at the off-site parcels, and Figures 5-2 through 5-9 show their locations.

Based upon the methodology presented in Chapter 2, no evidence of a release was identified at any of the 245 off-site ASTs; therefore they are considered Category 2.

3.3.3.2 Underground Storage Tanks

Main Base

USTs at Loring AFB are managed under the UST Management Plan and the Spill Response Plan. Table 3-4 summarizes the history and status of the

358 USTs at Loring AFB, and Figure 5-1 shows their locations. The base plans to remove numerous tanks in order to comply with state and federal UST regulations. All tanks associated with the hydrant fueling system would be removed, as would heating oil tanks associated with Wherry housing. Loring AFB currently has a number of contracts in place for the removal and/or replacement of USTs that do not meet state and federal compliance standards.

Based upon the methodology presented in Chapter 2, no evidence of a release occurring was identified at 167 of the 358 USTs; therefore they are considered Category 2. The remaining 191 USTs are considered Category 7 since the tank and subsurface soil conditions are unknown. Specific resource categories for these tanks are listed in Tables 3-4 and 5-1 and the locations are shown in Figure 5-1. Any release above action levels, resulting in a possible cleanup action, is discussed under Hazardous Waste/Petroleum Products Management or IRP Sites Identified to Date (Sections 3.3.1.2 and 3.3.2, respectively).

Upon removal, soil samples must be taken beneath the removed UST. If hazardous constituents above action levels are identified during soil analysis, remediation must be performed in accordance with applicable regulations.

Off-Site Parcels

Table 3-4 summarizes the status of the 70 USTs at the off-site parcels, and Figures 5-2 through 5-9 show their locations.

Based upon the methodology presented in Chapter 2, no evidence of a release was identified for any of the 70 USTs associated with the off-site parcels; therefore, they are considered Category 2. Upon removal, soil samples must be taken beneath the removed UST. If hazardous constituents above action levels are identified during soil analysis, remediation must be performed in accordance with applicable regulations.

3.3.3.3 Pipelines, Hydrant Fueling, and Transfer Systems

Main Base

The Searsport pipeline supplied both JP-4 and heating oil to Loring AFB until 1991. Currently the pipeline only supplies JP-4 to the base; heating oil is now trucked to the base by a private contractor, who supplies heating oil to individual facilities. The 205-mile pipeline originates at Searsport, Maine, and services a number of facilities before terminating at the Loring AFB bulk fuels storage yard. Two 400,000-gallon ASTs, located in the Nose Dock Area, are also supplied directly by the Searsport pipeline and distribute the JP-4 to the underground hydrant fueling system located throughout the Nose Dock Area. USTs associated with two additional pumphouses

(Facilities 8210 and 8270), located on both sides of the Arch Hangar (Facility 8250), were removed in 1992 under the IRP.

The hydrant fueling system has been identified as Category 7, since fuel lines, storage tanks, and subsurface conditions are unknown.

Off-Site Parcels

No pipelines, hydrant systems, or transfer systems are located at any of the nine off-site parcels.

3.3.4 Oil/Water Separators

Main Base

OWSs are flow-through systems designed to separate oil, fuel, and grease from water. Other contaminants potentially present in water discharged to an OWS, such as solvents, cannot be removed by this process. Water from an OWS typically discharges to an industrial or sanitary sewer, and is treated at a WWTP; however, several OWSs at Loring AFB discharge to local surface water drainages. Table 3-5 summarizes the history of the 16 OWSs at Loring AFB and Figure 5-1 shows their locations.

Based upon the methodology presented in Chapter 2, one of the 16 OWSs is being investigated under the IRP as part of the Flightline Drainage Ditch (SD-10), which is undergoing an RI/FS and is therefore considered Category 6. Conditions for the remaining 15 OWSs have not been determined and are considered Category 7. Specific resource categories are listed in Tables 3-5 and 5-1.

Off-Site Parcels

There are no OWSs associated with any of the off-site parcels.

3.3.5 Pesticides

Main Base

The majority of pesticides utilized at Loring AFB are herbicides, used for weed control during spring and summer at the golf course. Pesticides were stored at the Golf Course Maintenance Shed (Facility 2006) until July 1993 and are currently stored at the pest management shop located within Facility 7610. Pesticides were also stored at Facility 8265, which housed the former Entomology Shop until 1992. An inventory of pesticides stored at these facilities is provided in Table 3-6. Pesticides stored at the Entomology Shop are not being restocked in an effort to reduce the amount of hazardous waste generated from this shop at the time of closure.

The pest management shop was established at Facility 7610 in October 1992 and contains bermed storage areas and other spill prevention/containment systems. Based upon the methodology presented in Chapter 2, no evidence of a release occurring was identified at Facility 7610; therefore it is considered Category 2. The Golf Course Maintenance Shed (Facility 2006) is presently undergoing a PA, and the former Entomology Shop (Facility 8265) is undergoing an RI/FS under the IRP and are therefore considered Category 6.

Off-Site Parcels

Grounds maintenance is conducted by the occupants of the five off-site FHU parcels and at the Ashland CEVG Site. At Madawaska Dam, the Limestone Receiver, and the Caribou Communication sites, the base entomologist provides grounds maintenance.

Based upon the methodology presented in Chapter 2, no evidence of a release occurring was identified at any of the off-site parcels.

3.3.6 Medical/Biohazardous Waste

Main Base

Loring AFB operates the 15-bed, 42nd Strategic Hospital, which offers services to both active and retired military personnel and their dependents. These services include general surgery, internal medicine, clinical pathology, obstetrics and gynecology, labor and delivery, physical therapy, pharmacy, radiology, mental health, dental, and emergency room. Beginning in 1993, hospital services have gradually been reduced with the approach of base closure.

A veterinary clinic (Facility 6580) is also operated part-time. Animal vaccination and minor veterinary surgery are provided.

Approximately 26,500 pounds of biomedical wastes were generated by the hospital and veterinary clinic activities during calendar year 1992. These wastes were then destroyed using a licensed incinerator located within the hospital. An additional 5,000 pounds of goods (e.g., fruits) confiscated by customs agents at the U.S.-Canadian border were also disposed of by incineration at the hospital. All incinerator ash is drummed and disposed of as a special waste in a permitted landfill. Expired pharmaceuticals are either incinerated or disposed of in accordance with the Department of the Army methods (U.S. Department of the Army, 1991). In 1993, the amount of medical/biohazardous wastes generated were reduced due to the drawdown of hospital services.

Loring AFB also generates photochemical wastes and is licensed to operate a silver recovery unit for treatment of these wastes. This treatment process is discussed in Section 3.3.1.

Based upon the methodology presented in Chapter 2, no evidence of a release of medical/biohazardous wastes were identified at these facilities; therefore they are considered Category 2.

Off-Site Parcels

Medical/biohazardous wastes are not generated or stored at any of the offsite parcels.

3.3.7 Ordnance

Main Base

Loring AFB operated an Explosive Ordnance Disposal (EOD) Range from 1965 to 1988. The EOD range is located in the northeast corner of the base (see Figure 3-1) and consists of an open field approximately 200 feet in diameter. In addition, the base operates a 22-acre 40-millimeter grenade range, located immediately south of the WSA. The grenade range was constructed in 1985.

Ordnance disposal operations were halted in 1988 due to the requirement that an RCRA permit was required to operate the range. The EOD Range was used on a monthly basis during the summer for ordnance disposal proficiency testing by the explosive ordnance squadron. Squadron personnel utilized an average charge size of approximately 1 pound per detonation.

The Loring AFB Security Police operate indoor and outdoor small arms firing ranges. The indoor range (Facility 101) is a 25-meter range, designed for smaller caliber weapons (less than 9 millimeters), and is utilized daily during the winter months. Bullets are deflected off a metal plate through a deceleration unit and onto trays at the back of the range. These bullets are regularly removed and disposed through DRMO. The indoor range was constructed in 1965.

The outdoor range, constructed in 1977, is approximately 1 acre and consists of three earthen berms that form an open-ended rectangle. The outdoor range is utilized during the summer months and can accommodate larger caliber weapons such as the M-16 rifle and M-60 machine gun. Bullets are fired into an earthen berm at the back of the range, which is sifted for spent bullets. The spent lead is sold through DRMO.

The grenade range is utilized once a month by the Security Police, who utilize inert practice grenades, which contain a colored spotting powder

been identified to date; however, the grenade range will require a certificate of clearance prior to disposal.

The munitions maintenance squadron inspects and maintains all munitions (e.g., ammunition and flares) at Loring AFB. If determined to be unserviceable, munitions are stored in igloos at the WSA (Facility 247 or 282) to await final disposal. Unserviceable munitions are accumulated because the base is not properly permitted for treatment (disposal by detonation) of these munitions, the EOD Range is authorized to conduct proficiency tests only, and the state will not allow ground transportation of these materials. The base is currently working to transport accumulated unserviceable munitions to a permitted EOD facility.

All usable and accumulated unserviceable ordnance remaining on base at the time of closure will be properly packaged and transported off base for utilization or disposal by other Air Force units. The outdoor firing range will be cleared of lead contamination above applicable standards to a depth of 3 feet, and the EOD and grenade ranges will be cleared of all ordnance prior to closure.

The outdoor small arms firing, grenade, and EOD ranges at Loring AFB are undergoing investigation as part of the IRP and are considered Category 7 properties.

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Off-Site Parcels

Ordnance has never been used or stored at any of the off-site parcels.

3.3.8 Wastewater Discharges

Main Base

Wastewater discharges from WWTP and storm water runoff are routinely monitored by base personnel in accordance with an NPDES permit and federal, state, and local regulations. In addition, twelve active and/or abandoned on-site wastewater treatment systems and an abandoned wastewater holding tank are located on base. These systems are shown on Figure 5-1.

Based upon the methodology presented in Chapter 2, no evidence of contamination associated with the on-site wastewater systems was identified. However, wastewater discharges located downstream from two IRP sites (the Flightline Drainage Ditch and the POL Fuel Tank Farm) are identified as Category 7, due to the possibility of contamination from these sites.

Off-Site Parcels

On-site wastewater treatment systems are located at seven off-site parcels. Active systems are located at Connor FHU, the Limestone Receiver Site, and Madawaska Dam area. Abandoned systems remain in place at the Caswell and Caribou FHUs, Caribou Communication Site, and the Ashland CEVG Site.

No evidence of contamination associated with wastewater discharges was identified at any of the off-site parcels.

3.3.9 Radioactive and Mixed Waste

Main Base

Seven former low-level radioactive waste disposal sites, which include five USTs and two trenches, have been identified at the East Loring WSA. These sites are being investigated under the IRP. These sites may have been utilized during the 1950s; the two trenches are suspected of containing rags, boxes, and personal protective equipment, which may be contaminated with radionuclides and solvents. The storage tanks tested negative for radiological or chemical contaminants.

The seven sites are considered Category 6 properties due to the possible contaminants associated with the site. Additionally, the two trenches and five USTs are programmed to undergo a removal action during summer 1994. A building decommissioning survey, which will include additional testing for radiological contaminants, will be conducted on munition storage igloos and support facilities within the WSA.

Off-Site Parcels

There are no radioactive and mixed waste issues at any of the off-site parcels.

3.3.10 Nonhazardous Solid Waste

Loring AFB (including off-site parcels) currently has one active on-base construction debris landfill located at the south end of Pennsylvania Road. This 0.7-acre landfill has been in use since 1991. Nonhazardous solid waste is currently hauled off base by a private contractor to the Tri-Community landfill. In the past, solid waste was disposed of at five landfills, and additional solid waste disposal occurred at five debris disposal areas located on base property. These sites are being investigated under the IRP and are listed in Table 3-2.

The five inactive on-base landfills and the five debris areas are being investigated under the IRP. The boundaries of these landfills are known and they are considered Category 6 due to contaminants associated with these sites. The active construction debris landfill is considered Category 1 since no evidence of contamination was identified for the construction debris.

3.4 DISCLOSURE RESOURCES

Disclosure resources include asbestos, PCBs, radon, and lead-based paint. These resources were not used in property categorization. In the event that an issue arises regarding any of these resources, it will be discussed within the appropriate resource in Section 3.3, the resource is managed under another regulatory mechanism (i.e., RCRA, CERCLA).

3.4.1 Asbestos

Main Base

A comprehensive asbestos survey for Loring AFB has not been performed. However, a basewide asbestos hazard assessment was completed in 1989. The hazard assessment examined 179 buildings for the presence of suspected friable ACM only (U.S. Air Force, 1989a). The survey identified 127 facilities with suspected friable ACM. An additional asbestos survey of 58 facilities most likely to be utilized during reuse was completed in October 1993; final results will be available in January 1994. Table 3-7 provides an inventory of surveyed facilities and survey results, and Figure 5-1 shows locations of known ACM. All friable asbestos identified by the 1989 survey and determined to be a health risk has been abated.

An ACC-sponsored comprehensive basewide asbestos survey is programmed to be conducted in 1994.

Off-Site Parcels

Comprehensive asbestos surveys were conducted at all of the off-site parcels in October 1993 as part of a separate EBS effort; final results are not yet available. Locations of known ACM identified by base personnel prior to facility maintenance or renovation activities are shown in Figures 5-2 through 5-9.

3.4.2 Polychlorinated Biphenyls

Main Base

The Environmental Management Flight is responsible for PCB management at Loring AFB. A history of transformers at Loring AFB is provided in Table 3-8. The base tested all transformers, capacitors, and oil switches for PCBs

during the mid-1980s; however, the test kits used were determined to work properly for PCB concentrations of 500 parts per million (ppm) or more but found to be unreliable for concentrations below 500 ppm PCBs. The base retested all equipment found to contain PCBs below 500 ppms in 1993, with any PCB-contaminated equipment replaced or retrofilled immediately afterward. Prior to retesting, the only known PCB-contaminated equipment at Loring AFB consisted of one transformer and 28 oil switches all located at the power plant (Facility 7240). Four IRP sites have been associated with PCB disposal: LF-02, SS-05, SS-17, and SS-48 (see Section 3.3.2).

Off-Site Parcels

The Ashland CEVG Site's electrical transformers are owned and maintained by Maine Public Service Company. All other off-site parcels have been retested for PCBs. All equipment with PCB levels of 50 ppm or above have been retrofilled or replaced; no evidence of contamination associated with PCBs was identified at any of the off-site parcels.

3.4.3 Radon

Main Base

The initial screening for radon at Loring AFB was performed in May 1988 by the bioenvironmental engineer. Thirty-five samples were taken from a number of occupied facilities including FHUs, the child-care center, billeting, and dormitories. Only one sample detected radon levels above the U.S. EPA's recommended mitigation level of 4 picocuries per liter (pCi/l). Having exceeded this level, an additional and more detailed radon survey was conducted and involved analyzing 1,928 samples taken from occupied facilities, results of which were released in November 1992. Only 35 samples resulted in radon levels of 4 pCi/l and above, which is the action level for radon based on a 95-percent confidence level. The highest radon level was recorded at 10.9 pCi/l (Table 3-9). Based on these results, mitigation measures were not recommended; however, a letter providing survey results and voluntary radon mitigation techniques was sent to occupants of all facilities registering above the 4 pCi/l level.

Off-Site Parcels

All off-site FHUs and the Ashland CEVG Site have been screened for the presence of radon. Only Presque Isle FHU (see Table 3-9) was found to have radon above the U.S. EPA action level of 4 pCi/l. Radon screening has not taken place at the following off-site parcels: Madawsaka Dam, the Caribou Communication Site, and the Limestone Receiver Site.

3.4.4 Lead-based Paint

Main Base

The use of lead-based paints declined after 1978. A comprehensive basewide survey to determine the use of lead-based paint at the main base has not been conducted. Facilities constructed prior to the implementation of the DOD ban on the use of lead-based paint in 1978 are likely to contain such paint. All military FHUs and 320 facilities at Loring AFB were constructed prior to or during 1978.

Off-Site Parcels

A lead-based paint survey is being conducted at the off-site FHUs and the Ashland CEVG site. Facilities constructed prior to the implementation of the DOD ban on the use of lead-based paint in 1978 are likely to contain such paint. All off-site FHUs and 33 additional off-site facilities were constructed prior to or during 1978.

Table 3-1. Hazardous Waste Accumulation Points
Page 1 of 3

Facility ^(e) (Use)	Waste Stored	Documented Years of Storage	Amount Stored/ Time Period	Program Status	Specific Resources Category
Satellite Accun	nulation Points (up to 55 gallo	ns)			
NRCH 216/	1-1-1 Trichloroethane	1989-1992	28 gallons/year	Closed	2
232	Paint waste		28 gallons/year	May	
·				1992	
NRCH 241	Unserviceable munitions	1989-1992	200 pounds (total	RCRA	2
NRCH 243		1989-1992	for all buildings)		
WITCH 245		1909-1992			
NRCH 247	*.	1989-Present			
NDOLL 077		1000 1000			
NRCH 277		1989-1992		4.1	•
NRCH 279		1989-1992			
NRCH 282		1989-Present		•	
NRCH 284	:	1989-1992			
NRCH 368	Contaminated soil	1989-1992	Unknown	Closed	2
	Paint waste		·	Jan	
	Chemical waste			1993	
·	Lead/chromate waste				
NRCH 3502	Photo fixer with silver	1992-present	100 gallons/year	RCRA	2
NRCH 5906	Photo fixer with silver	1992-present	10 gallons/year	RCRA	2
NRCH 6570	Paint waste	1989-present	400 pounds/year	RCRA	2
	Used motor oil		150 gallons/year		
NRCH 7240 ^(b)	Chemical waste	1989-1993	400 pounds/year	Closed	2
				June	
			·	1993	
NRCH 7500	Chemical waste	1989-Present	200 pounds/month	RCRA	2
	Mixed petroleum waste		200 gallons/week		
NRCH 7501	Mixed petroleum waste	1992-Present	55 gallons/month	RCRA	2
	Asbestos brake pads	1990-Present	50 pounds/quarter		
	Paint waste	1989-Present	55 gallons/year		

Notes: (a) All facilities located on main base.

(b) Facility also listed as a special waste collection point.

NRCH = Main base.

RCRA = Resource Conservation and Recovery Act.

Table 3-1. Hazardous Waste Accumulation Points
Page 2 of 3

Facility ^(e) (Use)	Type of Waste Stored	Documented Years of Storage	Amount Stored/ Time Period	Program Status	Specific Resources Category
NRCH 7802	Mixed petroleum waste	1992-Present	100 gallons/year	RCRA	2
NRCH 8121	Mixed petroleum waste	1989-Present	Unknown	RCRA	2
NRCH 8155	Mixed petroleum waste	1989-Present	Unknown	RCRA	2
NRCH 8250	Chemical waste	1989-Present	994 gallons/year	RCRA	2
¥	Mixed petroleum waste		1,000 gallons/year		
NRCH 8251	Paint waste	1989-Present	55 gallons/quarter	RCRA	2
NRCH 8260	Paint waste	1991	200 gallons/year	Closed	2
	Chemical waste	1988-1991	600 gallons/year	Aug:	
	Mixed petroleum waste		600 gallons/year	1991	
NRCH 8262	Chemical waste (neutralized battery acid)	1988-1992	400 gallons/year	Closed Apr 1991	2
NRCH 8390®	Paint waste	1989-1993	55 gallons/year	Closed Mar 1993	
NRCH 8410	Mixed petroleum waste	1991-1993	350 gallons/year	Closed June 1993	2
NRCH 8710	Mixed petroleum waste	1987-1992	200 gallons/year	Closed	2
	Chemical waste	·	100 gallons/year	June 1992	
NRCH 8713	Battery acid	1989-1993	25 gallons/year	Closed 1993	
NRCH 8716	Mixed petroleum waste	1992-Present	55 gallons/quarter	RCRA	2
NRCH 8800(b)	Chemical waste	1987-1991	300 gallons/year	RCRA	2
	Mixed petroleum waste		100 gallons/year		
	Nicad batteries	1993	100 pounds/year		

Notes: (a) All facilities located on main base.

(b) Facility also listed as a special waste collection point.

NRCH = Main base.

RCRA = Resource Conservation and Recovery Act.

Table 3-1. Hazardous Waste Accumulation Points
Page 3 of 3

Facility ^(a) (Use)	Type of Waste Stored	Documented Years of Storage	Amount Stored/ Time Period	Program Status	Specific Resources Category
90-day Accumi	ulation Points				
NRCH 405	Mixed petroleum waste	1992-Present	Unknown	RCRA	2
: :	Paint waste				
	TCLPs, PCBs				
NRCH 7330	Perchloroethylene	1987-Present	300 gallons/year	RCRA	2
NRCH 8956	Mixed petroleum waste	1981-1992	Unknown	Closed	7
	PCBs			Oct	
	Paint waste		39 pounds/year	1992	
• •	Chemical waste		555 pounds/year		
:	Asbestos waste		Unknown		
·	NI-CAD batteries		143 pounds/year		
NRCH 9062	PCBs	1981-1993	2,500 pounds/year	RCRA	7
NRCH 9081	Chemical Wastes	1981-1990	Unknown	RCRA	7
Special Waste (Collection Points				
NRCH 2510 th	Used batteries	1990-Present	Unknown	RCRA	2
	Mixed petroleum waste (used oil)		150 gallons/quarter		
NRCH 5301	Mixed petroleum waste	1992	Unknown	RCRA	2
NRCH 7240	Mixed petroleum waste (used oil)	1989-Present	150 gallons/quarter	RCRA	2
NRCH 7301	Mixed petroleum waste	1992	Unknown	RCRA	2
NRCH 7600	Solid miscellaneous petroleum waste	1992	400 pounds/year	RCRA	2
	Liquid miscellaneous petroleum waste	1992	1,000 gallons/year		•
NRCH 8390	Mixed petroleum waste	1988-1993	200 gallons/year	RCRA	2
NRCH 8634	Mixed petroleum waste	1992	Unknown	RCRA	2
NRCH 8713	Mixed petroleum waste	1989-Present	1,000 gallons/year	RCRA	2
NRCH 8830	Mixed petroleum waste	1991-1993	500 pounds/year	Closed	2
				Oct	
			,	1993	

Notes: (a) All facilities located on main base.

(b) Facility also listed as a special waste collection point.

PCBs = Polychlorinated biphenyls.

NRCH = Main base.

RCRA = Resource Conservation and Recovery Act.

TCLPs = Toxicity Characteristics Leaching Procedure.

Sources: U.S. Air Force, 1989d, 1990c, 1992c, 1993b, 1993c; U.S. Environmental Protection Agency, 1988.

Table 3-2. Installation Restoration Program Sites Page 1 of 5

	Operable		Known or Suspected Material	Dates of		Specific Resource
Site ^(a)	Unit	Site Description	Disposed of	Operation	Program Status	Category
LF-01	2a, 4	Landfill No. 1	Construction debris and flightline wastes	1952-56	RI/FS, RD	ပ
LF-02	2, 4	Landfill No. 2	Oil, hydraulic fluids, solvents, thinners, paints, PCBs, flightline wastes, phenol, PHC, sewage, sludge, construction rubble, domestic garbage	1956-1974	RI/FS, RD	9
SS-03	6, 12	South Fuel Drop Site- Former	JP-4	1952-present	RI/FS, RD	9
SS-04	7а	Limestone Receiver Site	Fuel oil, PHC	early 1970s	RI/FS	5
SS-05	7, 12	Ouarry	PCB industrial garbage, drums of nonhazardous/uncertain nature, PHC, wire, paint cans, acid cans, concrete, asphalt	late 1950s - early 1980s	RI/FS	9
ST-06	11, 12	Fuel Tank Farm	POL, JP-4	1952-present	RI/FS	9
FT-07	8, 12	Fire Training Area	Liquid wastes-burned, fuels, oils, solvents, thinners, JP-4 only, PHC	1952-1974 1974-1989	RI/FS	9
80-88	6, 12	Railroad Maintenance Site	Drums of oil and antifreeze, PHC, POL, solvents	early 1980s	RI/FS, RD	9
LF-09	1	East Loring Landfill	Construction debris	unknown	NFA ^{tb)} recommended	7
SD-10	13	Flightline Drainage Ditch	Fuel, oil, solvents	1952-present	RI/FS	9
ST-11	5, 12	Nose Dock Area	Fuel, waste oil, solvents	1954-present	RI/FS	5
Material I	CHANGE EC CITA LACATE					

X

Notes: (a) WIMS-ES Site Identifier.

(b) No further action recommendation has not been approved by Marine Department of Environmental Protection.

IRA = Interim Remedial Action.

NFA = No further action.

PCB = Polychlorinated biphenyl.

PHC = Petroleum hydrocarbon.

POL = Petroleum, oil, and lubricants.

RD = Remedial Design.

RI/FS = Remedial Investigation/Feasibility Study.

Table 3-2. Installation Restoration Program Sites Page 2 of 5

					ı		Specific
	Sito(a)	Operable	Sito Cooriotion	Known or Suspected Material	Dates of	à	Resource
i	2010	5	olle Description	Uisposed or	Operation	Program Status	Category
X	OT-12	2a, 4	Coal Ash Pile	Coal ash, drums, paint cans, domestic refuse	1974-1991	RI/FS	9
χ	ST-13	5, 12	BX Service Station	Fuel, POL, solvents	1955-present	RI/FS, TS	9
J.	SS-14	6, 12	North Fuel Drop Site-1	JP-4	1952-present	NFA ^(b)	7
) \		~				recommended	
Å	ST-15	10, 12	Pumphouse 1 (Facility 8270) Flightline Area	Sodium chromate, VOC, and SVOC, JP-4	1950s-1963	RI/FS	5
¥	ST-16	6, 12	East Gate Waste Storage	MOGAS, solvents, waste fuels,	only MOGAS	RI/FS RD	5
			Tanks	strippers, crankcase oils, gear oils, hydraulic fluids, brake fluid, PHC	until 1980		
X	SS-17	8, 12	Underground Transformer Site	PCB, oil, polyaromatic hydrocarbons	1972	RI/FS	2
) 	OT-18	11, 12	Fly Ash Disposal Site (inactive)	Fiy ash	1953-mid- 1980s	RI/FS	9
₩ 1	OT-19	11, 12	Coal Storage Area	Low sulfur coal	1953-present	RI/FS	9
	LF-20	2, 4	Landfill No. 3	Domestic garbage	1974-	RI/FS, RD	9
					December 1991		
1							

Notes: (a) WIMS-ES Site Identifier.

(b) No further action recommendation has not been approved by Maine Department of Environmental Protection.

= Base Exchange.

= No further action. BX BX NFA BANGGAS BCB

= Motor gasoline.

Polychlorinated biphenyl. = Petroleum hydrocarbon.

Petroleum, oil, and lubricants.

Remedial Design. PHC POL RD RI/FS

Remedial Investigation/Feasibility Study.
 Semi-volatile organic compound.

svoc

Treatability Study.

= Volatile organic compound.

Table 3-2. Installation Restoration Program Sites Page 3 of 5

		Operable		Known or Suspected Material	Dates of		Specific Resource
i	Site	Unit	Site Description	Disposed of	Operation	Program Status	Category
×	ST-21	10, 12	Pumphouse 2 (Facility 8210), Flightline Area	Sodium chromate, VOC, and SVOC, JP-4	1950s-1963	RI/FS	വ
\times	SS-22	6, 12	South Fuel Drop Site - Active	JP-4	1952-present	NFA ^(b) recommended	7
i	SS-23	6, 12	North Fuel Drop Site - 2	JP-4	1952-present	NFA ^(b) recommended	7
I	RW-24	-	Low-level Radioactive Waste Disposal Site(s)	Low-level radiation; solid waste rags, gloves, boxes	early 1950s- 1961	RI/FS, IRA	6, 7
	ST-25	9, 12	Auto Hobby Shop, Flightline Area	Waste crankcase oil	1952-1992	RI/FS	9
I ×	SS-26	9, 12	Snow Barn, Flightline Area	Oils and greases	1952-1992	RI/FS	9
ı	SS-27	10, 12	Former Solvent Storage Building, Flightline Area	Solvents	1952- unknown	RI/FS	9
1	SS-28	11, 12	Base Laundry	Perchloroethylene	1960 to present	PA/SI	7
· ,	SS-29	3, 12	Contract Storage Shed - (Facility 7321), Flightline Area)	POL solvents, PCB	1959 to unknown	PA/SI	7
	0E-SS	3, 12	Dumpster Cleaning (Facility 7841)	Facility Solvents, metals	unknown	PA/SI	7

Notes: (a) WIMS-ES Site Identifier.

(b) No further action recommendation has not been approved by Maine Department of Environmental Protection.

IRA = Interim Remedial Action.

IRA NFA PCB POL

= No further action.

Polychlorinated byphenyl.Petroleum, oil, and lubricants.

Remedial Design.

Remedial Investigation/Feasibility Study. RI/FS 8

 Semi-volatile organic compound.
 Preliminary Assessment/Site Investigation.
 Volatile organic compound. svoc PA/SI

00 V

				Identifier,	IMS-ES Site	Notes: (a) WIMS-ES Site Identifier.
7	NFA recommended ^{to}	1940s-1958	Sulfuric acid, fuels	Water Softening Plant USTs (Facility 1008)	1	ST-41
9	RI/FS	1952-1992	Solvents, organophosphate pesticides	Entomology Shop (Facility 8265), Flightline Area	10, 12	WP-40
7	PA/SI	1977 to present	Lead	Small Arms/Grenade Range	3, 12	0T-39
9	RI/FS	1947-1963	Waste POL, hydraulic fluid, antifreeze	Former Vehicle Motor Pool (currently site of Facility 7270), Flightline Area	9, 12	SD-37
7	PA/SI	1987. unknown	POL, solvents, heavy metal	Solvent/paint dock area - (Facility 7220), Flightline Area	3, 12	SS-36
9	RI/FS, IRA	1957-86	Oil, hydraulic fluids, JP-4, POL, and solvents	Former Jet Engine Test Cell, Flightline Area	5, 12	SS-35
7	PA/SI	1970 to present	Unserviceable munitions	EOD Range	3, 12	OT-34
မ	RI/FS	1954-present	POL and solvents	Vehicle Maintenance (Facility 7500)	11, 12	SS-33
9	RI/FS	unknown	POL and solvents	Power Plant Drain Pipe, Flightline Area	9, 12	SD-32
9	RI/FS	1984-present	POL and solvents	Refueling Vehicle Maintenance Area (Facility 7600)	11, 12	SS-31
Specific Resource Category	Program Status	Dates of Operation	Known or Suspect Material Disposed of	Site Description	Operable Unit	Site(a)

Notes: (a) WIMS-ES Site Identifier.

(b) No further action recommendation has not been approved by Maine Department of Environmental Protection.

EOD = Explosive Ordnance Disposal.

IRA = Interim Remedial Action.

NFA = No further action.

PA/Si = Preliminary Assessment/Site Investigation.

POL = Petroleum, oil, and lubricants.

RI/FS = Remedial Investigation/Feasibility Study.

SI = Site Investigation.

UST = Underground storage tank.

Table 3-2. Installation Restoration Program Sites Page 5 of 5

				٠		Specific
	Operable	Φ.	Known or Suspect Material Disposed	Dates of		Resource
Site(a)	Unit	Site Description	of	Operation	Program Status	Category
ST-42	ł	Ammonia Transfer Facility	Ammonia	1960-1974	NFA ^(b)	7
		(Facility 8719)			recommended	
LF-43	3, 4	Chapman Pit Debris Annex	Construction rubble	unknown	PA/SI	7
LF-44	3, 12	Prime BEEF Debris Area	Construction rubble	unknown	PA/SI	7
LF-45	3, 12	Ohio Road Debris Area	Uncontrolled dumping	unknown	PA/SI	7
LF-46	3, 12	Oklahoma Road Debris Area	Construction rubble	unknown	PA/SI	7
SS-47	3, 12	Demineralization Plant (Facility 7321)	Metais	unknown	PA/SI	7
SS-48	3, 12	DRMO (salvage yard) (Facilities 8951 and 8960)	PCBs, SVOC	unknown	PA/SI	7
SS-49	3, 12	Golf Course Maintenance Shed (Facility 2006)	Pesticide	1954 to 1993	PA/SI	7
LF-50	3, 12	9000 Debris Area	Construction debris	unknown	PA/SI	7
SS-51	3, 12	KC-135 Crash site	JP-4		PA/SI	7
SS-52	3, 12	F-106 crash site	POL	September 1965	PA/SI	7
ST-53	3, 12	Former Base Exchange gas station UST	POL	unknown- 1960s	PA/SI	7
Mr. 4-1 14	THE TAIL OF STREET AND ADDRESS.					

Notes:

(a) WIMS-ES Site Identifier.

(b) No further action recommendation has not been approved by Maine Department of Environmental Protection. DRMO = Defense Reutilization and Marketing Office.

NFA = No further action.

NFA = No further action.

PCBs = Polychilorinated biphenyls.

PCBs = Polychilorinated biphenyls.

PCL = Petroleum, oil, and lubricants.

SI = Site Investigation.

SYOC = Semi-volatile organic compound.

UST = Underground storage tank.

Sources: ABB Environmental Services, 1991a, 1993a; CH2M Hill, 1984; E.C. Jordan Company, 1990; U.S. Air Force, 1992d; Roy F. Weston, Inc., 1988.

Table 3-3. Aboveground Storage Tanks Page 1 of 11

Facility	Contents	Capacity in gallons ^(o)	Status	Years of Operation	Program Status	Specific Resource Category
MAIN BASE						
NRCH 0101	Propane	500	Active	1952-Present	NFPA	2
NRCH 1090	Heating Fuel	294,000	Inactive	1953	MOSFB	2
NRCH 1200	Heating Fuel	275	Active	1954	MOSFB	2
NRCH 1350	Propane	120	Active	1956-Present	NFPA	2
NRCH 1853	Spill Containment	1,000	Active	1954-Present	NFPA	2
NRCH 2100	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2101	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2102	Heating Fuel	550	Active	1954-Present	MOSFB	2 .
NRCH 2103	Heating Fuel	550	Active	1954-Present	MOSFB	.2
NRCH 2104	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2105	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2106	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2107	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2108	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2109	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2110	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2111	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2112	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2113	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2114	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2116	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2117	Heating Fuel	550	Active	1954-Present	MOSFB	· 2
NRCH 2118	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2120	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2122	Heating Fuel	550	Active	1954-Present	MOSFB	2

(a) Numbers in parentheses indicate number of tanks if more than one.

MOSFB = Maine Oil and Solid Fuel Board.

NFPA = National Fire Protection Association's National Fire Code.
NRCH = Main base.

Table 3-3. Aboveground Storage Tanks
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						Specific
Facility	Contents	Capacity in gallons ^(a)	Status		Program Status	Resource Category
NRCH 2201	Heating Fuel	275	Active	•	MOSFB	2
NRCH 2202	Heating Fuel	275	Active		иOSFB	2
NRCH 2203	Heating Fuel	300	Active		MOSFB	2
NRCH 2204	Heating Fuel	275	Active		MOSFB	2
NRCH 2301	Heating Fuel	275	Active	1957-Present	MOSFB	2
NRCH 2303	Heating Fuel	275	Active	1957-Present	MOSFB	2
NRCH 2305	Heating Fuel	275	Active	1957-Present	MOSFB	2
NRCH 2307	Heating Fuel	275	Active		MOSFB	2
NRCH 2510	Propane	500	Active	1951-Present N	NFPA	2
NRCH 2550	Propane	1000	Active		NFPA	2 .
NRCH 2602	Propane	120	Active		NFPA	2
NRCH 2622	Propane	120	Active	1951-Present	NFPA	2
NRCH 2640	Propane	120	Active	1951-Present	NFPA	2
NRCH 2666	Heating Fuel	500	Active	1954-Present	MOSFB	2
NRCH 2702	Propane	120	Active	1980-Present	NFPA	2
NRCH 2722	Propane	120	Active	1985-Present	NFPA	2
NRCH 2730	Propane	120	Active	1985-Present N	NFPA	2
NRCH 2740	Propane	120	Active	1985-Present	NFPA	2
NRCH 2750	Propane	120	Active	1985-Present	NFPA	2
NRCH 2800	Propane	120	Active	1954-Present 1	NFPA	2
NRCH 2820	Propane	120	Active	1954-Present	NFPA	2
NRCH 2830	Propane	120	Active	1954-Present	NFPA	2
NRCH 2900	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2901	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2902	Heating Fuel	550	Active	1954-Present	MOSFB:	2
NRCH 2903	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2904	Heating Fuel	550	Active		MOSFB	2
NRCH 2905	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2906	Heating Fuel	550	Active	1954-Present	MOSFB	2
NRCH 2907	Heating Fuel	550	Active		MOSFB	2
NRCH 2908	Heating Fuel	550	Active		MOSFB	2
NRCH 2909	Heating Fuel	550	Active		MOSFB	2
NRCH 2910	Heating Fuel	550	Active		MOSFB	2
NRCH 2911	Heating Fuel	550	Active		MOSFB	2

(a) Numbers in parentheses indicate number of tanks if more than one.

MOSFB = Maine Oil and Solid Fuel Board.

NFPA = National Fire Protection Association's National Fire Code.

NRCH = Main base.

Table 3-3. Aboveground Storage Tanks
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			3 -				
Facility	Contents	Capac gal	city in lons ^(a)	Status	Years of Operation	Program Status	Specific Resource Category
NRCH 2912	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2913	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2914	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2915	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2916	Heating Fuel	100	550	Active	1954-Present	MOSFB	2
NRCH 2917	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2918	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2919	Heating Fuel	$\cdot = \cdot \cdot \cdot_{i}$	550	Active	1954-Present	MOSFB	2
NRCH 2920	Heating Fuel	• .	550:	Active	1954-Present	MOSFB	2
NRCH 2921	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2922	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2923	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2924	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2925	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2926	Heating Fuel	+ 1-	550	Active	1954-Present	MOSFB	2
NRCH 2927	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 2928	Heating Fuel		550	Active	1954-Present	MOSFB	2
NRCH 3005	Heating Fuel	· :	550	Active	1956-Present	MOSFB	2
NRCH 3006	Diesel		185	Active	1956-Present	NFPA	2
NRCH 3360	Heating Fuel	!	550	Active	1973-Present	MOSFB	2
NRCH 3502	Propane	. !	500	Active	1988-Present	NFPA	2
NRCH 4100	Heating Fuel	. !	550	Active	1953-Present	MOSFB	2
NRCH 4101	Heating Fuel	· !	550	Active	1953-Present	MOSFB	2
NRCH 4102	Heating Fuel		550	Active	1953-Present	MOSFB	2
NRCH 4104	Heating Fuel		550	Active	1953-Present	MOSFB	2
NRCH 4105	Heating Fuel	·	550	Active	1953-Present	MOSFB	2
NRCH 4106	Heating Fuel	. [550	Active	1953-Present	MOSFB	2
NRCH 4107	Heating Fuel	ĺ	550	Active	1953-Present	MOSFB	2
NRCH 4108	Heating Fuel		550	Active	1953-Present	MOSFB	2
NRCH 4109	Heating Fuel		550	Active	1953-Present	MOSFB	2
NRCH 4111	Heating Fuel		550	Active	1953-Present	MOSFB	2
NRCH 4112	Heating Fuel	į	550	Active	1953-Present	MOSFB	2
NRCH 4113	Heating Fuel		550	Active	1953-Present	MOSFB	2

(a) Numbers in parentheses indicate number of tanks if more than one.

MOSFB = Maine Oil and Solid Fuel Board.

NFPA = National Fire Protection Association's National Fire Code.

NRCH = Main base.

Table 3-3. Aboveground Storage Tanks
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Facility	Contents	Capacity in gallons ^(a)	Status	Years of Operation	Program Status	Specific Resource Category
NRCH 4116	Heating Fuel	550	Active	1953-Present	MOSFB	2 : 1
NRCH 4200	Heating Fuel	550	Active	1953-Present	MOSFB	2
NRCH 4201	Heating Fuel	550	Active	1953-Present	MOSFB	2 .
NRCH 4202	Heating Fuel	550	Active	1953-Present	MOSFB	2
NRCH 4203	Heating Fuel	550	Active	1953-Present	MOSFB	2
NRCH 4205	Heating Fuel	550	Active.	1953-Present	MOSFB	2
NRCH 4400	Propane	120	Active	1954-Present	NFPA	2
NRCH 4404	Propane	120	Active	1985-Present	NFPA	. 2
NRCH 4432	Propane	120	Active	1954-Present	NFPA	2
NRCH 4452	Propane	120	Active	1985-Present	NFPA	2
NRCH 4470	Propane	120	Active	1954-Present	NFPA	2
NRCH 4482	Propane	120	Active	1986-Present	NFPA	2
NRCH 4502	Propane	120	Active	1986-Present	NFPA	2
NRCH 4510	Propane	120	Active	1954-Present	NFPA	2
NRCH 4530	Propane	120	Active	1986-Present	NFPA	2 .
NRCH 4542	Propane	120	Active	1985-Present	NFPA	2
NRCH 4550	Propane	120	Active	1954-Present	NFPA	2
NRCH 4562	Propane	120	Active	1985-Present	NFPA.	2
NRCH 4570	Propane	120	Active	1980-Present	NFPA	2
NRCH 4580	Propane	120	Active	1954-Present	NFPA	2
NRCH 4602	Propane	120	Active	1986-Present	NFPA	2
NRCH 4620	Propane	120	Active	1986-Present	NFPA	2
NRCH 4640	Propane	120	Active	1954-Present	NFPA	2
NRCH 4660	Propane	120	Active	1985-Present	NFPA	2
NRCH 4680	Propane	120	Active	1986-Present	NFPA	2
NRCH 4805	Heating Fuel	500	Active	1953-Present	MOSFB	2
NRCH 5002	Heating Fuel	275	Active	1954-Present	MOSFB	2
NRCH 5007	Diesel	275	Active	1983-Present	NFPA	2
NRCH 5050	Heating Fuel	500	Active	1954-Present	MOSFB	2
NRCH 5055	Heating Fuel	275	Active	1953-Present	MOSFB	2
NRCH 5300	Heating Fuel	275	Active	1953-Present	MOSFB	2
NRCH 5900	Heating Fuel	1,000	Active	1953-Present	MOSFB	2

(a) Numbers in parentheses indicate number of tanks if more than one.

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NFPA = National Fire Protection Association's National Fire Code.

NRCH = Main base.