5.10 Resource Commitments

Various energy and material resources would be committed in the implementation of any of the alternative groups. Estimates of major resources committed are summarized by alternative group in Table 5.32. (As a result of refined calculations of resource needs based on the Technical Information Document [FH 2004], the need for gravel and sand, silt/loam, and basalt for the action alternative groups increased by factors of approximately 1.8, 2.6, and 1.2, respectively, over those reported in the revised draft HSW EIS [DOE 2003].) In this section, Alternative Groups D_1, D_2, and D_3 are referred to collectively as Alternative Group D (and similarly for Alternative Groups E_1, E_2, and E_3). The resource commitments for Alternative Groups D and E are considered collectively because the activities under each essentially are the same—only the locations of the activities change. The location changes do not significantly alter the resource commitments.

The ILAW resources are broken out separately at the bottom of Table 5.32 because the resource requirements to handle this one waste category can be much greater than those of the other categories. Resource estimates for management of melters are included with other Hanford solid waste streams. The ILAW vault resource commitments would be added to the No Action Alternative values, the ILAW multiple trench commitments would be added to values for Alternative Groups A and B, and the ILAW single trench commitments would be added to values for Alternative Groups C, D, and E. Resource commitments of the alternative groups with the appropriate ILAW actions included are presented in Table 5.32.

Resource requirements for a number of materials are larger for Alternative Group B than for Alternative Groups A, C, D, or E because of the less-efficient trench design. Some activities under the No Action Alternative require more resources than the action alternatives. Under the No Action Alternative, ILAW is disposed of in vaults, which increases the diesel, steel, concrete, and water needs. In addition, 66 CWC waste storage buildings would be constructed, which increases the steel and concrete needs compared with those for the other alternative groups. The use of accelerated process lines would be expected to require only minor amounts of resources, regardless of where placed.

When considering the resource commitments by inventory volume within an alternative group, the Hanford Only waste volume generally requires the least resources; the Upper Bound waste volume requires the most. In many cases, the Hanford Only and Lower Bound waste volume resource commitments are not substantially different.

The resource commitments presented in Table 5.33 for actions excluding ILAW would not be expected to impact available supplies or activities requiring these same resources. The peak electrical power required for construction of operations associated with the management of Hanford solid waste for any of the alternative groups would not be expected to impact Hanford's existing capacity. The commitment of resources for ILAW actions would not cause any impacts beyond those described in the *Hanford Comprehensive Land-Use Plan Environmental Impact Statement* (DOE 1999) and the Hanford Waste Management Operations EIS (ERDA 1975).

Table 5.32. Resource Commitment Summary by Alternative Group and for ILAW[a]

Waste Volume	Total Electric (GWhr)	Diesel (m^3)	Gasoline (m^3)	Propane (t)	Asphalt[b] ($1000 m^3$)	Gravel/ Sand ($1000 m^3$)	Silt/Loam ($1000 m^3$)	Basalt ($1000 m^3$)	Bentonite Clay (t)	Steel (t)	Concrete ($1000 m^3$)	Total Water ($1000 m^3$)	Lead (t)	Land (ha)
Alternative Group A (without ILAW)														
Hanford Only	735	12,800	260	12,700	362	776	1,900	518	13,900	720	8.0	488	45	143
Lower Bound	735	12,800	260	12,700	364	782	1,910	521	13,900	870	9.6	488	45	144
Upper Bound	743	13,600	270	19,300	386	828	2,030	552	18,200	1,280	14	492	45	152
Alternative Group B (without ILAW)														
Hanford Only	5860	16,500	340	23,500	408	881	2,160	587	33,600	800	9.9	484	45	161
Lower Bound	5860	16,500	340	23,500	414	895	2,190	597	33,600	950	12	485	45	163
Upper Bound	587	20,500	430	38,300	468	1010	2,470	673	57,600	1,380	16	487	45	184
Alternative Group C (without ILAW)														
Hanford Only	735	12,800	260	12,700	362	776	1,900	518	13,900	720	8.0	488	45	143
Lower Bound	735	12,800	260	12,700	364	782	1,910	521	13,900	870	9.6	488	45	144
Upper Bound	743	13,600	270	19,300	386	828	2,030	552	18,200	1,280	14	492	45	152
Alternative Group D (without ILAW)														
Hanford Only	735	12,800	260	18,800	380	821	2,010	548	13,900	710	8.0	488	45	142
Lower Bound	735	12,800	260	20,300	382	824	2,020	549	13,900	870	9.9	488	45	142
Upper Bound	743	13,600	270	27,800	394	850	2,080	567	18,200	1,280	14	492	45	147
Alternative Group E (without ILAW)														
Hanford Only	735	12,800	260	18,800	360	772	1,890	515	13,900	710	8.0	488	45	142
Lower Bound	735	12,800	260	20,300	361	775	1,900	516	13,900	870	9.9	488	45	142
Upper Bound	743	13,600	270	27,800	373	801	1,960	534	18,200	1,280	14	492	45	147
No Action Alternative (without ILAW)														
Hanford Only	685	5,200	48	3,560	6	13	31	8	0	25,900	140	29.6	45	148
Lower Bound	685	5,300	50	3,560	6	13	31	8	0	26,000	142	29.6	45	149
ILAW														
Vault	NA	183,400	NA	0	20	2603[c]	NA	NA	NA	33,170	282	487	0	10
Multiple Trench	NA	120,100	NA	0	33	770[c]	NA	NA	NA	1,000	0.31	789	0	26
Single Trench	NA	53,100	NA	0	10	550[c]	NA	NA	NA	1,000	0	308	0	8

(a) Conversion factors: 1 m^3 (capacity) = 260 gal; 1 m^3 (volume) = 1.3 yd^3; and 1 t (metric tonne) = 1.1 tons.
(b) A fully prepared product including its components.
(c) Total fill (sand, gravel, silt, and rip rap).
NA = not applicable.

Table 5.33. Resource Commitment Summary by Alternative Group with ILAW Resources Included[(a)]

Waste Volume	Diesel (m^3)	Asphalt (1000 m^3)	Gravel/Sand, Silt/Loam, Basalt (1000 m^3)	Steel (t)	Concrete (1000 m^3)	Total Water (1000 m^3)
Alternative Group A						
Hanford Only	132,900	392	3,960	1,720	8.3	1,280
Lower Bound	132,900	394	3,990	1,870	9.9	1,280
Upper Bound	133,700	416	4,180	2,280	14	1,280
Alternative Group B						
Hanford Only	136,600	438	4,400	1,800	10	1,270
Lower Bound	136,700	444	4,450	1,950	12	1,270
Upper Bound	140,600	498	4,930	2,380	16	1,280
Alternative Group C						
Hanford Only	65,900	372	3,740	1,720	8.0	798
Lower Bound	65,900	374	3,770	1,870	9.6	798
Upper Bound	66,700	396	3,960	2,280	14	802
Alternative Group D						
Hanford Only	65,900	390	3,930	1,710	8.0	798
Lower Bound	65,900	392	3,940	1,870	9.9	798
Upper Bound	66,700	404	4,050	2,280	14	802
Alternative Group E						
Hanford Only	65,900	370	3,730	1,710	8.0	798
Lower Bound	65,900	371	3,740	1,870	9.9	798
Upper Bound	66,700	383	3,850	2,280	14	802
No Action Alternative						
Hanford Only	188,600	26	2,650	59,100	420	520
Lower Bound	188,700	26	2,650	59,200	422	520

(a) Conversion factors: 1 m^3 (capacity) = 260 gal; 1 m^3 (volume) = 1.3 yd^3; and 1 t (metric tonne) = 1.1 tons.