

1 **5.2.2 Alternative Group B**
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3 Project activities that would generate air quality impacts under Alternative Group B include the use of
4 diesel-fueled equipment to construct additional trenches of current design and the ILAW and melter
5 trenches, backfilling and capping activities in the LLBGs, construction of a new waste processing facility,
6 and the excavation of materials at the borrow pit. In addition, propane would be used to fuel vehicles at
7 the CWC and to operate pulse driers used to treat leachate from the MLLW trenches. Fugitive dust would
8 be associated with all major construction and operation activities.

9 For Alternative Group B (Hanford Only and Lower Bound waste volumes), the largest air quality
10 impacts would occur during two different periods of project operation. In 2011, ILAW trench
11 construction, LLW trench construction, and MLLW capping and backfill operations would be underway.
12 The heavy use of construction equipment for short periods of time would produce the maximum pollutant
13 concentrations for CO, SO₂, and NO₂. After disposal operations cease, LLBG and ILAW capping
14 operations would be in full swing. This sustained activity would produce maximum 24-h and annual
15 concentrations of PM₁₀ that would be slightly greater than in 2011.
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17 For Alternative Group B (Upper Bound waste volume), the largest air quality impacts would occur
18 during three different periods of project operation. In 2006, the heavy use of construction equipment
19 would produce the maximum pollutant concentrations over the relevant 1-hour, 3-hours, 8-hours, and
20 24-hr averaging periods for CO and SO₂. In 2011, LLW and ILAW trench construction, coupled with
21 MLLW melter capping and backfilling operations, would generate the maximum annual SO₂ and NO₂
22 concentrations. After disposal operations cease, LLBG and ILAW capping operations would be in full
23 swing. This sustained activity would produce the maximum 24-hr and annual concentrations of PM₁₀.
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25 Estimates of the maximum air quality impacts to the public from activities in the 200 Areas under
26 Alternative Group B are summarized in Table 5.7. Estimates of the maximum air quality impacts from
27 Area C activities are the same for all Alternative Groups (see Table 5.6).
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29 All air quality impacts to the public under Alternative Group B would be within ambient air quality
30 standards (see Table 4.5, Section 4.3.2). The largest potential impact to the public from activities at Area
31 C would result from SO₂ and CO emissions. The largest potential air quality impacts to the public from
32 200 Area emissions would involve the 24-hr PM₁₀ air concentration. Even using the series of
33 conservative assumptions employed in the dispersion modeling, the maximum air quality impact to the
34 public for the Upper Bound waste volume would be about 60 percent of the applicable air quality
35 standard. Maximum impacts for the Hanford Only and Lower Bound waste volumes would be less than
36 47 percent of the applicable standards.
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38 **5.2.3 Alternative Group C**
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40 Project activities that would generate air quality impacts under Alternative Group C include the use of
41 diesel-fueled equipment to construct new expandable trenches for LLW and for MLLW, construction of
42 the ILAW and Melter trenches, backfilling of trenches, capping the LLBGs and the ILAW trench at
43 closure, performing routine CWC and T Plant operations, modifying T Plant for new waste processing

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Table 5.7. Alternative Group B: Maximum Air Quality Impacts to the Public from Activities in the 200 Areas

Pollutant	Averaging Time	Ambient Air Quality Standard (µg/m ³)	Hanford & Lower Bound Volume		Upper Bound Volume	
			Maximum Air Quality Impacts (µg/m ³)	Percent of Standard	Maximum Air Quality Impacts (µg/m ³)	Percent of Standard
PM ₁₀	24 hr	150	71	47	90	60
	Annual	50	0.62	1.2	0.65	1.3
SO ₂	1 hr	1,000	130	13	180	18
	3 hr	1,300	61	4.7	85	6.5
	24 hr	260	4.7	1.8	6.4	2.5
	Annual	50	0.021	0.042	0.021	0.042
CO	1 hr	40,000	2500	6.3	3400	8.5
	8 hr	10,000	800	8.0	1100	11
NO ₂	Annual	100	1.0	1.0	1.1	1.1

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capability, and the excavation and transportation of materials from the borrow pit. In addition, propane engines would be used at the CWC and to operate pulse driers used to treat leachate from the MLLW trenches. Fugitive dust would be associated with all major construction and operation activities.

For Alternative Group C (Hanford Only and Lower Bound waste volumes), the largest air quality impacts would occur during three different periods of project operation. In 2007, the heavy use of construction equipment would produce the maximum pollutant concentrations over 1-hr and 3-hr averaging periods for SO₂. In 2018, ILAW trench construction and MLLW capping and backfill operations would be under way. This use of construction equipment for long periods of time would produce the maximum 24-hr and annual concentrations for SO₂ and the maximum 1-hr and 8-hr pollutant concentrations for CO. After disposal operations cease, LLBG and ILAW capping operations would be in full swing. This sustained activity would produce the maximum 24-hr and annual concentrations of PM₁₀ and the maximum annual concentration of NO₂.

For Alternative Group C (Upper Bound waste volume), the largest air quality impacts would occur during four different periods of project operation. In 2007, the construction of ILAW, LLW, and MW trenches would produce the maximum concentrations over 1-hr and 3-hr averaging periods for SO₂ and an 8-hr averaging period for CO. In 2018, ILAW trench construction, coupled with MLLW melter capping and backfilling operations, would generate the maximum 24-hr and annual concentrations of SO₂, annual concentrations of NO₂, and 1-hr concentrations of CO. After disposal operations cease, LLBG and ILAW capping operations would be in full swing. This sustained activity would produce the maximum 24-hour and annual concentrations of PM₁₀.

Estimates of the maximum air quality impacts to the public from activities in the 200 Areas under Alternative C are summarized in Table 5.8. Estimates of the maximum air quality impacts from Area C activities are the same for all Alternative Groups (see Table 5.6).

Table 5.8. Alternative Group C: Maximum Air Quality Impacts to the Public from Activities in the 200 Areas

Pollutant	Averaging Time	Ambient Air Quality Standard ($\mu\text{g}/\text{m}^3$)	Hanford & Lower Bound Volume		Upper Bound Volume	
			Maximum Air Quality Impacts ($\mu\text{g}/\text{m}^3$)	Percent of Standard	Maximum Air Quality Impacts ($\mu\text{g}/\text{m}^3$)	Percent of Standard
PM ₁₀	24 hr	150	60	40	61	41
	Annual	50	0.53	1.1	0.54	1.1
SO ₂	1 hr	1,000	79	7.9	80	8.0
	3 hr	1,300	36	2.8	37	2.8
	24 hr	260	2.9	1.1	2.9	1.1
	Annual	50	0.018	0.036	0.018	0.036
CO	1 hr	40,000	1500	3.8	1500	3.8
	8 hr	10,000	460	4.6	470	4.7
NO ₂	Annual	100	0.79	0.79	0.78	0.78

All air quality impacts to the public from Alternative Group C would be within ambient air quality standards (see Table 4.5). The largest potential impacts to the public from activities at Area C would result from SO₂ and CO emissions. The largest potential air quality impacts to the public from activities in the 200 Areas would involve the 24-hour PM₁₀ concentration. Even using the series of conservative assumptions employed in the dispersion modeling, this maximum air quality impact would be about 40 percent of the applicable air quality standard.

5.2.4 Alternative Groups D₁, D₂, and D₃

Project activities that would generate air quality impacts under Alternative Group D₁, D₂, and D₃ (collectively referred to as Alternative D) include the use of diesel-fueled equipment to construct a lined modular facility to hold the LLW, MLLW, ILAW and melters, backfilling and capping activities in the LLBGs, the modification of T Plant, and the excavation of materials at the borrow pit. In addition, propane would be used at the CWC and to operate pulse driers used to treat leachate from the MLLW trenches. Fugitive dust would be associated with all major construction and operation activities. Alternative Groups D₁, D₂, and D₃ postulate different locations for the Lined Modular Facility. In conducting air quality modeling, a conservative 200 West Area source location was assumed in all cases for the lined modular facility. As a result, the air quality estimates for D₁, D₂, and D₃ are equivalent.

For Alternative Group D (Hanford Only, Lower Bound, and Upper Bound waste volumes), the largest air quality impacts would occur during two different periods of project operation. In 2006, the lined modular facility construction and capping of an existing MLLW trench would be under way. The heavy use of construction equipment for short periods of time would produce the maximum average pollutant concentrations for CO and SO₂. After disposal operations cease, the lined modular facility capping operations would be in full swing. This sustained activity would produce the maximum 24-hour and annual concentrations of PM₁₀ and the maximum annual concentrations of NO₂.