
APPENDIX C

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the five-year review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION										
Site name: <u>Sudbury Landfill</u>	Date of inspection: <u>5/11/01</u>									
Location and Region: <u>Middlesex County, Mass. Region 1</u>	EPA ID: <u>MA0980520670</u>									
Agency, office, or company leading the five-year review: <u>Ray F. Weston, Inc</u>	Weather/temperature: <u>sunny - 80-85°</u>									
Remedy Includes: (Check all that apply) <input checked="" type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____										
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached										
II. INTERVIEWS (Check all that apply) <u>N/A</u>										
1. O&M site manager _____ <table border="0" style="width:100%"> <tr> <td style="text-align:center">Name</td> <td style="text-align:center">Title</td> <td style="text-align:center">Date</td> </tr> <tr> <td colspan="3">Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____</td> </tr> <tr> <td colspan="3">Problems, suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____		
Name	Title	Date								
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____										
Problems, suggestions; <input type="checkbox"/> Report attached _____										
2. O&M staff _____ <table border="0" style="width:100%"> <tr> <td style="text-align:center">Name</td> <td style="text-align:center">Title</td> <td style="text-align:center">Date</td> </tr> <tr> <td colspan="3">Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____</td> </tr> <tr> <td colspan="3">Problems, suggestions; <input type="checkbox"/> Report attached _____</td> </tr> </table>		Name	Title	Date	Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____			Problems, suggestions; <input type="checkbox"/> Report attached _____		
Name	Title	Date								
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____										
Problems, suggestions; <input type="checkbox"/> Report attached _____										

3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. *N/A*

Agency _____	_____	_____	_____
Contact _____	_____	_____	_____
Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

Agency _____	_____	_____	_____
Contact _____	_____	_____	_____
Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

Agency _____	_____	_____	_____
Contact _____	_____	_____	_____
Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

Agency _____	_____	_____	_____
Contact _____	_____	_____	_____
Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

4. Other interviews (optional) Report attached. *N/A*

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents <input checked="" type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input checked="" type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <input type="checkbox"/> N/A
3.	O&M and OSHA Training Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> N/A
8.	Leachate Extraction Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
9.	Discharge Compliance Records <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A

B. Other Access Restrictions			
1.	Signs and other security measures	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
Remarks <u>All signs in appropriate locations, and good condition</u>			
C. Institutional Controls			
1.	Implementation and enforcement	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Type of monitoring (e.g., self-reporting, drive by)	_____	
	Frequency	_____	
	Responsible party/agency	_____	
	Contact	_____	
		Name	Title
		Date	Phone no.
	Reporting is up-to-date	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	Reports are verified by the lead agency	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	Specific requirements in deed or decision documents have been met	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	Violations have been reported	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Other problems or suggestions: <input type="checkbox"/> Report attached	_____	
	<u>None observed.</u>	_____	
	_____	_____	
	_____	_____	
2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate
	Remarks _____	_____	
	_____	_____	
	_____	_____	
D. General			
1.	Vandalism/trespassing	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No vandalism evident
	Remarks _____	_____	
	_____	_____	
2.	Land use changes onsite	<input checked="" type="checkbox"/> N/A	
	Remarks _____	_____	
	_____	_____	
3.	Land use changes offsite	<input checked="" type="checkbox"/> N/A	
	Remarks _____	_____	
	_____	_____	

VI. GENERAL SITE CONDITIONS			
A. Roads	<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A	
1. Roads damaged	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A
Remarks _____			
B. Other Site Conditions			
Remarks <u>None.</u>			

VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Landfill Surface			
1. Settlement (Low spots)	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Settlement not evident	
Areal extent _____	Depth _____		
Remarks _____			
2. Cracks	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Cracking not evident	
Lengths _____	Widths _____	Depths _____	
Remarks _____			
3. Erosion	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Erosion not evident	
Areal extent _____	Depth _____		
Remarks _____			
4. Holes	<input checked="" type="checkbox"/> Location shown on site map	<input type="checkbox"/> Holes not evident	
Areal extent _____	Depth _____		
Remarks _____			
5. Vegetative Cover	<input checked="" type="checkbox"/> Grass	<input checked="" type="checkbox"/> Cover properly established	<input checked="" type="checkbox"/> No signs of stress
<input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram)			
Remarks _____			
6. Alternative Cover (armored rock, concrete, etc.)	<input checked="" type="checkbox"/> N/A		
Remarks _____			

7.	Bulges Areal extent _____ Height _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Bulges not evident	
8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map	Areal extent _____ Areal extent _____ Areal extent _____ Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of slope instability
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
C. Letdown Channels <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of degradation

3.	Erosion Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> No evidence of erosion
4.	Undercutting Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> No evidence of undercutting
5.	Obstructions Type _____ Size _____ Remarks _____	<input type="checkbox"/> Location shown on site map Areal extent _____	<input checked="" type="checkbox"/> No obstructions
6.	Excessive Vegetative Growth Type _____ Remarks _____	<input checked="" type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____	
D. Cover Penetrations <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Gas Vents <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input type="checkbox"/> Active <input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> Passive <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs O&M <input type="checkbox"/> Good condition <input type="checkbox"/> N/A
2.	Gas Monitoring Probes <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs O&M <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> N/A
3.	Monitoring Wells (within surface area of landfill) <input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs O&M <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> N/A
4.	Leachate Extraction Wells <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs O&M <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> N/A

5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed	<input checked="" type="checkbox"/> N/A
Remarks _____				
E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	Gas Treatment Facilities	<input type="checkbox"/> Flaring	<input type="checkbox"/> Thermal destruction	<input type="checkbox"/> Collection for reuse
		<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M	
Remarks _____				
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M	
Remarks _____				
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks _____				
F. Cover Drainage Layer <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A				
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> N/A	
Remarks _____				
2.	Outlet Rock Inspected	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input type="checkbox"/> N/A				
1.	Siltation	Areal extent _____	Depth _____	<input type="checkbox"/> N/A
	<input checked="" type="checkbox"/> Siltation not evident			
Remarks _____				
2.	Erosion	Areal extent _____	Depth _____	
	<input checked="" type="checkbox"/> Erosion not evident			
Remarks _____				
3.	Outlet Works	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> N/A	
Remarks _____				
4.	Dam	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> N/A	
Remarks _____				

H. Retaining Walls <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Deformations Horizontal displacement _____ Rotational displacement _____ Remarks _____	<input checked="" type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Deformation not evident Vertical displacement _____
2.	Degradation Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Degradation not evident
I. Perimeter Ditches/Off-Site Discharge <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Siltation Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Siltation not evident Depth _____
2.	Vegetative Growth <input type="checkbox"/> Vegetation does not impede flow Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A Type _____
3.	Erosion Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Depth _____
4.	Discharge Structure Remarks _____	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Settlement Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Depth _____
2.	Performance Monitoring <input type="checkbox"/> Performance not monitored Frequency _____ Head differential _____ Remarks _____	Type of monitoring _____ <input type="checkbox"/> Evidence of breaching

IX. GROUNDWATER/SURFACE WATER REMEDIES				<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines				<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Pumps, Wellhead Plumbing, and Electrical	<input type="checkbox"/> Good condition	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs O&M	<input checked="" type="checkbox"/> N/A
Remarks _____					

2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks _____					

3.	Spare Parts and Equipment	<input type="checkbox"/> Readily available	<input type="checkbox"/> Good condition	<input type="checkbox"/> Requires upgrade	<input type="checkbox"/> Needs to be provided
Remarks _____					

B. Surface Water Collection Structures, Pumps, and Pipelines				<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Collection Structures, Pumps, and Electrical	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks _____					

2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks _____					

3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____
C. Treatment System <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Treatment Train (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____ _____
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M Remarks _____ _____
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs O&M Remarks _____ _____
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M Remarks _____ _____
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____ _____
6.	Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs O&M <input type="checkbox"/> N/A Remarks _____ _____