

APPENDIX A
SITE INSPECTION FORMS

Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site 4	Date of inspection: 9/23/2013												
Location and Region: Former March AFB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Landfill cover/containment</td> <td style="width: 50%;"><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
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Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 4-1													
II. INTERVIEWS (Check all that apply) SEE INTERVIEW RECORD FORM APPENDIX G													
1. O&M site manager _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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 _____			_____		
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2. O&M staff _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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 _____			_____		
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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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<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 _____ _____ _____ _____ _____			
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Landfill Surface			
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input type="checkbox"/> Holes not evident
<small>Holes along the fence lines due to rodent activity were inspected and repaired as a part of routine maintenance, and do not impact the protectiveness of the remedy.</small>			
5.	Vegetative Cover <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____	<input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established	<input checked="" type="checkbox"/> No signs of stress
6.	Alternative Cover (armored rock, concrete, etc.) Remarks _____	<input checked="" type="checkbox"/> N/A	
7.	Bulges Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Height _____	<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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input checked="" type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input checked="" type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input checked="" type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input checked="" type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input checked="" type="checkbox"/> Located	<input checked="" type="checkbox"/> Routinely surveyed <input 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 Maintenance	
Remarks _____				

2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
Remarks _____				

3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<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 checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> N/A	
Remarks _____				

G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
Remarks _____				

2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
Remarks _____				

3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input checked="" 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input checked="" type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SUBJECT
TO
FLOODING

[Damaged diamond-shaped sign]

**IRP SITE #4
LANDFILL #6**

- OPERATED 1955 THRU 1968
8.25 ACRES
25 FEET DEEP
CAPACITY 835,000 YARDS
- COST - STREAM IMPROVEMENT \$2 M
- LANDFILL CAP \$3 M
- CONSTRUCTION
- STARTED JUNE 94
- COMPLETED NOV 94

FOR INFORMATION
REGARDING THIS SITE
CALL AECOM AT
(909) 579-3093



SITE 4 - LANDFILL NO. 6



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site 5	Date of inspection: 9/23/2013												
Location and Region: March ARB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input checked="" type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
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Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 4-2													
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SEE INTERVIEW RECORD FORM APPENDIX G													
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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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , self-reporting, drive by) _____				
	Frequency _____				
	Responsible party/agency _____				
	Contact _____				
	Name	Title	Date	Phone no.	
	Reporting is up-to-date		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		

2.	Adequacy	<input type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

VI. GENERAL SITE CONDITIONS					
A. Roads <input type="checkbox"/> Applicable <input type="checkbox"/> N/A					
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A	
	Remarks _____				

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

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
	<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
		<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance
		<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
Remarks _____			

X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
No Further Action in OUI ROD.			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE .			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 5 - LANDFILL NO. 3



SITE 5 - LANDFILL NO. 3



Site Inspection Checklist

I. SITE INFORMATION			
Site name: Site 7	Date of inspection: 9/23/2013		
Location and Region: Former March AFB	EPA ID:		
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input checked="" 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 _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input checked="" 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 _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls
<input type="checkbox"/> Landfill cover/containment <input checked="" 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 _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls		
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 4-3			
II. INTERVIEWS (Check all that apply) <small>SEE INTERVIEW RECORD FORM APPENDIX G</small>			
1. O&M site manager _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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 _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<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 _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	Cracks <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____ _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	Holes <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____ _____	
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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 type="checkbox"/> N/A Remarks _____ _____	
7.	Bulges <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____ _____	

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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____		
D. Cover Penetrations <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____		
2.	Gas Monitoring Probes	<input checked="" type="checkbox"/> Properly secured/locked	<input checked="" type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	<input checked="" type="checkbox"/> Properly secured/locked	<input checked="" type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed <input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	Areal extent _____	Depth _____	<input type="checkbox"/> N/A
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion	Areal extent _____	Depth _____	
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

IX. GROUNDWATER/SURFACE WATER REMEDIES <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input checked="" 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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	WATER TREATED AT SITE 31
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 Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____			
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____			
D. Monitoring Data				
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality			
2.	Monitoring data suggests: <input checked="" type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining			

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
	Remarks _____		

X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
<p style="text-align: center;">SITE IS RESTRICTED FROM RESIDENTIAL USE. NO RESIDENTIAL LAND USE ON SITE.</p>			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
<p style="text-align: center;">NONE REQUIRED.</p>			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 7 - FIRE PROTECTION TRAINING AREA NO. 2



SITE 7 - FIRE PROTECTION TRAINING AREA NO. 2



SITE 7 - FIRE PROTECTION TRAINING AREA NO. 2



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site 18	Date of inspection: 9/23/2013												
Location and Region: March ARB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 4-4													
SEE INTERVIEW RECORD FORM APPENDIX G II. INTERVIEWS (Check all that apply)													
1. O&M site manager _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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 _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)				
1.	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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			

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A
	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 on site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

3.	Land use changes off site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

VI. GENERAL SITE CONDITIONS				
A. Roads <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A
	Remarks _____			

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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.) Remarks _____ _____	<input type="checkbox"/> N/A
7.	Bulges Areal extent _____ Height _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident

8.	Wet Areas/Water Damage	<input 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 _____
	<input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____ _____		
9.	Slope Instability	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability	Areal extent _____ Remarks _____ _____
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	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks _____ _____		
2.	Bench Breached	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks _____ _____		
3.	Bench Overtopped	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks _____ _____		
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" 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	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement	Areal extent _____ Depth _____ Remarks _____ _____
2.	Material Degradation	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation	Material type _____ Areal extent _____ Remarks _____ _____
3.	Erosion	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion	Areal extent _____ Depth _____ Remarks _____ _____

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		

5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		

6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____		

D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	
	<input type="checkbox"/> N/A		
	Remarks _____		

2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		

3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		

4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		

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

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" type="checkbox"/> N/A
1.	Treatment Train (Check components that apply)	<input type="checkbox"/> Metals removal <input type="checkbox"/> Air stripping <input type="checkbox"/> Filters <input type="checkbox"/> Additive (<i>e.g.</i> , chelation agent, flocculent) <input type="checkbox"/> Others	<input type="checkbox"/> Oil/water separation <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Bioremediation
		<input type="checkbox"/> Good condition <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	<input type="checkbox"/> Needs Maintenance
	Remarks _____		
2.	Electrical Enclosures and Panels (properly rated and functional)	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
	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 Maintenance
	Remarks _____		
4.	Discharge Structure and Appurtenances	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
	Remarks _____		
5.	Treatment Building(s)	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Chemicals and equipment properly stored	<input type="checkbox"/> Needs repair
	Remarks _____		
6.	Monitoring Wells (pump and treatment remedy)	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> All required wells located	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A
	Remarks _____		
D. Monitoring Data			
1.	Monitoring Data	<input checked="" type="checkbox"/> Is routinely submitted on time	<input type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests:	<input type="checkbox"/> Groundwater plume is effectively contained	<input checked="" type="checkbox"/> Contaminant concentrations are declining

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
Remarks _____			

X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
THE REMEDY CONSISTING OF ICs, SKIMMING AND MONITORING IS FUNCTIONING			
EFFECTIVELY.			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE.			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 18 - ENGINE TEST CELL



SITE 18 - ENGINE TEST CELL



Site Inspection Checklist

I. SITE INFORMATION			
Site name: Site 29	Date of inspection: 9/23/2013		
Location and Region: March ARB	EPA ID:		
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input 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 _____ _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table>		<input 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 _____ _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls
<input 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 _____ _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls		
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 4-5			
<small>SEE INTERVIEW RECORD FORM APPENDIX G</small> II. INTERVIEWS (Check all that apply)			
1. O&M site manager _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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 _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<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 _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	Cracks <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____ _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	Holes <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____ _____	
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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 type="checkbox"/> N/A Remarks _____ _____	
7.	Bulges <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____ _____	

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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
	<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	Areal extent _____	Depth _____	<input type="checkbox"/> N/A
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion	Areal extent _____	Depth _____	
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
	Remarks _____		<input type="checkbox"/> N/A
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
SITE IS RESTRICTED FROM RESIDENTIAL USE. NO RESIDENTIAL LAND USE ON SITE.			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE REQUIRED.			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 29 - FIRE PROTECTION TRAINING AREA NO. 1



SITE 29 - FIRE PROTECTION TRAINING AREA NO. 1



Site Inspection Checklist

I. SITE INFORMATION			
Site name: Site 31	Date of inspection: 9/23/2013		
Location and Region: March ARB	EPA ID:		
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear		
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls
<input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls		
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 4-6			
II. INTERVIEWS (Check all that apply) SEE INTERVIEW RECORD FORM APPENDIX G			
1. O&M site manager _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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 _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)				
1.	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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 <input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached			

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A
	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 on site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

3.	Land use changes off site	<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 _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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.) Remarks _____ _____	<input type="checkbox"/> N/A
7.	Bulges Areal extent _____ Height _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input 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 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 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
	<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input 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 checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input checked="" 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Treatment Train (Check components that apply)	<input type="checkbox"/> Metals removal <input type="checkbox"/> Air stripping <input type="checkbox"/> Filters <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) <input type="checkbox"/> Others	<input type="checkbox"/> Oil/water separation <input checked="" type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Bioremediation
		<input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input checked="" type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually <input type="checkbox"/> Quantity of surface water treated annually	<input type="checkbox"/> Needs Maintenance
Remarks _____			
2.	Electrical Enclosures and Panels (properly rated and functional)	<input type="checkbox"/> N/A Remarks _____	<input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance
3.	Tanks, Vaults, Storage Vessels	<input type="checkbox"/> N/A Remarks _____	<input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance
4.	Discharge Structure and Appurtenances	<input type="checkbox"/> N/A Remarks _____	<input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance
5.	Treatment Building(s)	<input type="checkbox"/> N/A <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____	<input checked="" type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair
6.	Monitoring Wells (pump and treatment remedy)	<input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> All required wells located Remarks _____	<input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A
D. Monitoring Data			
1.	Monitoring Data	<input checked="" type="checkbox"/> Is routinely submitted on time	<input type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests:	<input checked="" type="checkbox"/> Groundwater plume is effectively contained	<input type="checkbox"/> Contaminant concentrations are declining

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 31 - SOLVENT SPILL



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Ukg"56"	Date of inspection: ; 454235												
Location and Region: Ocej "CTD"	EPA ID:												
Agency, office, or company leading the five-year review: CHEGE	Weather/temperature: Emct												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
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<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 4-7													
II. INTERVIEWS <small>SEE INTERVIEW RECORD FORM APPENDIX G</small> (Check all that apply)													
1. O&M site manager _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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 _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<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 _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	Cracks <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____ _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	Holes <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____ _____	
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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 type="checkbox"/> N/A Remarks _____ _____	
7.	Bulges <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____ _____	

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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____ _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
	<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
	Remarks _____		

X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
SITE IS RESTRICTED FROM RESIDENTIAL USE. NO RESIDENTIAL LAND USE ON SITE.			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE REQUIRED.			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 34 - PRITCHARD REFUELING SYSTEM



SITE 34 - PRITCHARD REFUELING SYSTEM



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Ukg'3"	Date of inspection: ; 454235												
Location and Region: Ocej "CTD"	EPA ID:												
Agency, office, or company leading the five-year review: CHEGE	Weather/temperature: Emct												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<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 checked="" type="checkbox"/> Site map attached See Figure 5-1													
II. INTERVIEWS <small>SEE INTERVIEW RECORD FORM APPENDIX G</small> (Check all that apply)													
1. O&M site manager _____ x _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> 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 _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: 20px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)				
1.	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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			

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A
	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 on site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

3.	Land use changes off site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

VI. GENERAL SITE CONDITIONS				
A. Roads <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A
	Remarks _____			

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	Cracks <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____ _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	Holes <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____ _____	
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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 type="checkbox"/> N/A Remarks _____ _____	
7.	Bulges <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____ _____	

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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
	<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
	Remarks _____		<input type="checkbox"/> N/A
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
SITE IS RESTRICTED FROM RESIDENTIAL USE. NO RESIDENTIAL LAND USE ON SITE.			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE REQUIRED.			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 1 - AIRCRAFT ISOLATION AREA/FUEL DRAINAGE AREA



WARNING
Restricted Area
All persons are restricted from entering this area without the permission of the responsible commander.
Unauthorized entry into this area may result in disciplinary action.
All persons entering this area must wear their seat belts.
No alcohol, drugs, or weapons are allowed.

**ENTRY
CONTROL POINT**

23
Control Point

SITE 1 - AIRCRAFT ISOLATION AREA/FUEL DRAINAGE AREA



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site 6	Date of inspection: 9/23/2013												
Location and Region: Former March AFB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input checked="" type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 5-2													
II. INTERVIEWS SEE INTERVIEW RECORD FORM APPENDIX G (Check all that apply)													
1. O&M site manager _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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 _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<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 _____ _____ _____ _____ _____		
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 Areal extent _____ Depth _____ Remarks _____ _____	<input checked="" type="checkbox"/> Settlement not evident
2.	Cracks <input type="checkbox"/> Location shown on site map Lengths _____ Widths _____ Depths _____ Remarks _____ _____	<input checked="" type="checkbox"/> Cracking not evident
3.	Erosion <input type="checkbox"/> Location shown on site map Areal extent _____ Depth _____ Remarks _____ _____	<input checked="" type="checkbox"/> Erosion not evident
4.	Holes <input type="checkbox"/> Location shown on site map Areal extent _____ Depth _____ Remarks _____ _____	<input checked="" type="checkbox"/> Holes not evident
5.	Vegetative Cover <input type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input 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 <input type="checkbox"/> Location shown on site map Areal extent _____ Height _____ Remarks _____ _____	<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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input checked="" type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input checked="" type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input checked="" type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input checked="" type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input checked="" type="checkbox"/> Located	<input checked="" type="checkbox"/> Routinely surveyed <input 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 Maintenance		
Remarks _____				

2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
Remarks _____				

3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<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 checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> N/A	
Remarks _____				

G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
<input type="checkbox"/> Siltation not evident				
Remarks _____				

2.	Erosion Areal extent _____	Depth _____		
<input type="checkbox"/> Erosion not evident				
Remarks _____				

3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input checked="" 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input checked="" type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Based on the analytical results and statistical comparisons of the groundwater monitoring wells and subdrain system (MH-2), the Detection Monitoring Program has been discontinued per recommendations in the regulatory approved Final Annual 2012 Landfill Remedial Action-Operation Report (AECOM 2013d)

SITE 6 - LANDFILL NO. 4



SITE 6 - LANDFILL NO. 4



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site 11	Date of inspection: 9/23/2013												
Location and Region: March ARB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
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<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 5-3													
II. INTERVIEWS (Check all that apply) <small>SEE INTERVIEW RECORD FORM APPENDIX G</small>													
1. O&M site manager _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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 _____			_____		
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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 style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)				
1.	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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			

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A
	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 on site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

3.	Land use changes off site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

VI. GENERAL SITE CONDITIONS				
A. Roads <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A
	Remarks _____			

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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.) Remarks _____ _____	<input type="checkbox"/> N/A
7.	Bulges Areal extent _____ Height _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
	<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	Areal extent _____	Depth _____	<input type="checkbox"/> N/A
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion	Areal extent _____	Depth _____	
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" type="checkbox"/> N/A
1.	Treatment Train (Check components that apply)	<input type="checkbox"/> Metals removal <input type="checkbox"/> Air stripping <input type="checkbox"/> Filters <input type="checkbox"/> Additive (<i>e.g.</i> , chelation agent, flocculent) <input type="checkbox"/> Others	<input type="checkbox"/> Oil/water separation <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Bioremediation
		<input type="checkbox"/> Good condition <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	<input type="checkbox"/> Needs Maintenance
	Remarks _____		
2.	Electrical Enclosures and Panels (properly rated and functional)	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
	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 Maintenance
	Remarks _____		
4.	Discharge Structure and Appurtenances	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
	Remarks _____		
5.	Treatment Building(s)	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Chemicals and equipment properly stored	<input type="checkbox"/> Needs repair
	Remarks _____		
6.	Monitoring Wells (pump and treatment remedy)	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> All required wells located	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Good condition <input type="checkbox"/> N/A
	Remarks _____		
D. Monitoring Data			
1.	Monitoring Data	<input type="checkbox"/> Is routinely submitted on time	<input type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests:	<input type="checkbox"/> Groundwater plume is effectively contained	<input type="checkbox"/> Contaminant concentrations are declining

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 11 - BULK FUELS STORAGE AREA



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Ukg'39"	Date of inspection: ; 454235												
Location and Region: Hqto gt'O ctej 'CHD"	EPA ID:												
Agency, office, or company leading the five-year review: CHEGE	Weather/temperature: Emct												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
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<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 5-4													
II. INTERVIEWS (Check all that apply) SEE INTERVIEW RECORD FORM APPENDIX G													
1. O&M site manager _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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 style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)				
1.	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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 <input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____	

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A
	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 on site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

3.	Land use changes off site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

VI. GENERAL SITE CONDITIONS				
A. Roads <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A
	Remarks _____			

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	Cracks <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____ _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	Holes <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____ _____	
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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 type="checkbox"/> N/A Remarks _____ _____	
7.	Bulges <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____ _____	

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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
	<input type="checkbox"/> Needs Maintenance		<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
	<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 17 - SWIMMING POOL FILL



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site 19	Date of inspection: 9/23/2013												
Location and Region: Former March AFB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 5-5													
II. INTERVIEWS (Check all that apply) SEE INTERVIEW RECORD FORM APPENDIX G													
1. O&M site manager _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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 style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<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 _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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.) Remarks _____ _____	<input type="checkbox"/> N/A
7.	Bulges Areal extent _____ Height _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
			<input 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 Maintenance	
	Remarks _____			

2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			

3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			

F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			

2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			

3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
	Remarks _____		

X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
<u>SITE IS RESTRICTED FROM RESIDENTIAL USE. NO RESIDENTIAL LAND USE</u> <u>ON SITE.</u>			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE.			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 19 - WEST MARCH SLUDGE DRYING BEDS



SITE 19 - WEST MARCH SLUDGE DRYING BEDS



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site 33	Date of inspection: 9/23/2013												
Location and Region: March ARB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
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<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 6-1													
II. INTERVIEWS (Check all that apply)													
SEE INTERVIEW RECORD FORM APPENDIX G													
1. O&M site manager _____ <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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 style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 40%; text-align: center;">Name</td> <td style="width: 20%; text-align: center;">Title</td> <td style="width: 40%; 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> <tr> <td colspan="3">_____</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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)					
1.	Implementation and enforcement		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not properly implemented		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Type of monitoring (<i>e.g.</i> , 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	<input type="checkbox"/> N/A
	Reports are verified by the lead agency		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
	Violations have been reported		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		_____		
	_____			_____	
	_____			_____	
2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A	
	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 on site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

3.	Land use changes off site	<input checked="" type="checkbox"/> N/A			
	Remarks _____				

VI. GENERAL SITE CONDITIONS					
A. Roads <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A					
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A	
	Remarks _____				

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	Cracks <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____ _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	Holes <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____ _____	
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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 type="checkbox"/> N/A Remarks _____ _____	
7.	Bulges <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____ _____	

8.	Wet Areas/Water Damage	<input 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 _____
	<input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____ _____		
9.	Slope Instability	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability	Areal extent _____ Remarks _____ _____
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	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks _____ _____		
2.	Bench Breached	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks _____ _____		
3.	Bench Overtopped	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
	Remarks _____ _____		
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" 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	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement	Areal extent _____ Depth _____ Remarks _____ _____
2.	Material Degradation	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation	Material type _____ Areal extent _____ Remarks _____ _____
3.	Erosion	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion	Areal extent _____ Depth _____ Remarks _____ _____

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
			<input 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 Maintenance	
	Remarks _____			
2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
	Remarks _____			
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____			
F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	Areal extent _____	Depth _____	<input type="checkbox"/> N/A
	<input type="checkbox"/> Siltation not evident			
	Remarks _____			
2.	Erosion	Areal extent _____	Depth _____	
	<input type="checkbox"/> Erosion not evident			
	Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
	Remarks _____			

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
			<input type="checkbox"/> N/A
	Remarks _____ _____		
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
THE REMEDY CONSISTING OF ICs, SKIMMING AND MONITORING IS FUNCTIONING			
EFFECTTIVELY.			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE .			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE 33 - PANERO AIRCRAFT REFUELING FACILITY



SITE 33 - PANERO AIRCRAFT REFUELING FACILITY



Site Inspection Checklist

I. SITE INFORMATION													
Site name: Site L	Date of inspection: 9/23/2013												
Location and Region: Former March AFB	EPA ID:												
Agency, office, or company leading the five-year review: AFCEC	Weather/temperature: Clear												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached See Figure 7-1													
II. INTERVIEWS <small>SEE INTERVIEW RECORD FORM APPENDIX G</small> (Check all that apply)													
1. O&M site manager _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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 _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> 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.

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<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"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input 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 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 type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A

C. Institutional Controls (ICs)				
1.	Implementation and enforcement			
	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 (<i>e.g.</i> , 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			

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A
	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 on site	<input checked="" type="checkbox"/> N/A		
	Remarks _____			

3.	Land use changes off site	<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 _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____ _____	
2.	Cracks <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks _____ _____	
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ _____	
4.	Holes <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Areal extent _____ Depth _____ Remarks _____ _____	
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input 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 type="checkbox"/> N/A Remarks _____ _____	
7.	Bulges <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Areal extent _____ Height _____ Remarks _____ _____	

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 type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input 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 type="checkbox"/> Applicable <input checked="" 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 type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input 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 _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active	<input type="checkbox"/> Passive
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs Maintenance
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed
			<input 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 Maintenance	
Remarks _____				

2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	
Remarks _____				

3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
Remarks _____				

F. Cover Drainage Layer			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

G. Detention/Sedimentation Ponds			<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A	
	<input type="checkbox"/> Siltation not evident			
Remarks _____				

2.	Erosion Areal extent _____	Depth _____		
	<input type="checkbox"/> Erosion not evident			
Remarks _____				

3.	Outlet Works	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

4.	Dam	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks _____				

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement_____	Vertical displacement_____	
	Rotational displacement_____		
	Remarks_____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks_____		

I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent_____	Type_____	
	Remarks_____		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent_____	Depth_____	
	Remarks_____		

4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks_____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent_____	Depth_____	
	Remarks_____		

2.	Performance Monitoring	Type of monitoring_____	
	<input type="checkbox"/> Performance not monitored		
	Frequency_____	<input type="checkbox"/> Evidence of breaching	
	Head differential_____		
	Remarks_____		

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 properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance 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 checked="" 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 (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <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 Maintenance 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 Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (<i>esp.</i> 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 Maintenance <input type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
	Remarks _____		<input type="checkbox"/> N/A
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
SITE IS RESTRICTED FROM RESIDENTIAL USE. NO RESIDENTIAL LAND USE ON SITE.			

B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			
NONE REQUIRED.			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

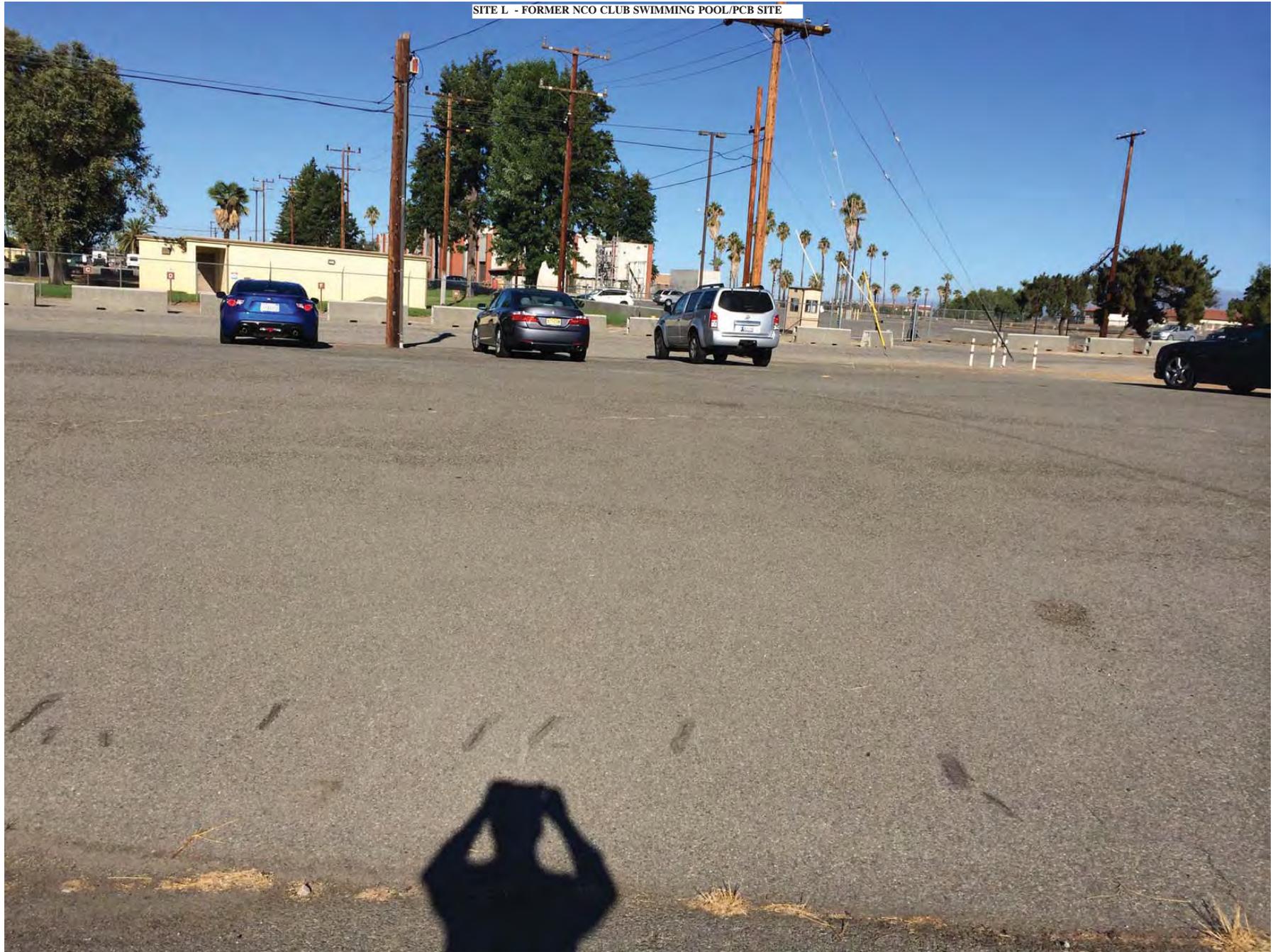
NONE .

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

NONE .

SITE L - FORMER NCO CLUB SWIMMING POOL/PCB SITE



SITE L - FORMER NCO CLUB SWIMMING POOL/PCB SITE



Inspection Roster Form - Details of Site Inspections – 3rd Five Year Review

Inspection Date	Inspection Participants
23 September 2013	AECOM <ul style="list-style-type: none"><li>• Gaurav Dhody<li>• Tony English

APPENDIX B
NOVEMBER 2013 RAB MEETING MINUTES

**March Air Force Base/Air Reserve Base
Restoration Advisory Board (RAB)
November 6, 2013**

AGENDA

Administrative

Welcome and introductions

Election of Community Co-Chair

Perchlorate Update

Five Year Review

Update on Cleanup Program Status (handout)

Groundwater Level Update

Federal Budget Impact on March Environmental Programs

Future agenda items

Open Discussion

Schedule Next Meeting and Site Tour

**Minutes of the
March Air Force Base Restoration Advisory Board (RAB)
November 6, 2013**

The next RAB meeting will be held in Late April 2014, tentative location, March Joint Powers Authority Conference Room.

A site tour will be held 9:00 a.m. on Saturday, January 25, 2014. The tour will start at the March ARB Visitor Control Center.

Introduction

Gerald Budlong and Eric Lehto, the Co-Chairs, welcomed everybody to the meeting. The minutes from the April 24, 2013 meeting were approved. A future agenda item on the State Water Resources Control Board Low-Threat Underground Storage Tank Case Closure Policy was deferred to a later meeting.

Election of Community Co-Chair

Gerald Budlong was re-elected as the Community Co-Chair.

Perchlorate Update

Eric Lehto provided an update. Perchlorate is a component of solid rocket fuel and fireworks. It also occurs naturally and is found in some imported fertilizers. The California drinking water standard (Maximum Contaminant Level) for perchlorate is 6 parts per billion. March ARB groundwater was sampled in 2007 and perchlorate was found at 3-4 parts per billion with no indication that activities at March added to the perchlorate levels.

The California Public Health Goal for perchlorate in drinking water is also 6 parts per billion. In December 2012, the California Office of Environmental Health Hazard Assessment released a Draft Technical Support Document on a Proposed Public Health Goal of 1 part per billion for perchlorate in drinking water. If the Public Health Goal is lowered to 1 part per billion, it may or may not affect the groundwater cleanup at March.

Fireworks are currently being stored in the former Weapons Storage Area bunkers on the former March AFB. The fireworks arrive and are stored in finished form. The fireworks are not built, manufactured or altered in the facilities on the former March AFB. The fireworks facilities are permitted and inspected by Riverside county agencies.

Robert Newman asked about known health effects from naturally occurring perchlorate. Eric Lehto said he would check on it for the next meeting.

Ralph Smith expressed a concern about the security at the former Weapons Storage Area, which led to a discussion of the munitions that were previously stored there. A review of the previous investigations into possible radioactive contamination at the Weapons Storage Area will be part of the next meeting.

Five Year Review

Bob Simpson distributed a handout and made a presentation the third five year review at March. The Air Force is performing a review of the environmental decisions that were made for the cleanup of past spills or hazardous waste disposal practices on March ARB/Former March AFB. These reviews are done every five years in accordance with EPA guidance. Five year reviews were previously done in 2003 and 2009.

The handout is attached to the minutes.

Robert Newman asked about the source of the remaining contamination at Site 19, West March Sludge Drying Beds. Eric Lehto will report on it at the next meeting.

Cleanup Program Status Update

Eric Lehto went over the cleanup program status using a handout. The handout is also attached to the minutes.

Additional soil removal has been done at Site 7. Additional information on the soil used for backfill will be presented at the next meeting.

Additional soil removal is planned at Site 34. Additional information the soil disposal will be presented at the next meeting.

Groundwater Levels

Groundwater levels continue to rise.

Site Tour

The annual site tour is planned for Saturday, January 25, 2014.

ATTENDEES

Gerald Budlong
Patricia Hannon
Matthew Hansen
Eric Lehto
Robert Newman II
Ric Olalde
Naeem Qureshi
Bob Simpson
Ralph W. Smith
Danielle Wheeler

Air Force Third Five Year Review of Remedial Decisions

March Air Reserve/Former Air Force Base, California

RAB Meeting – 6:30 PM

6 November 2013

The Third Five-Year Review

The Air Force is performing a review of the environmental decisions made for cleanup of past spills or hazardous waste disposal practices on March Air Reserve/Former March Air Force Base. These reviews are conducted every five years in accordance with Comprehensive Five-Year Review Guidance issued by the USEPA (USEPA 2001). This is the third review of the decisions at March ARB. The first review was conducted in 2003 and the second review in 2009.

The review covers the status of selected remedies to protect human health and the environment that have been chosen for individual sites in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The review includes a brief description and history of each site, documents current conditions at the site, identify all environmental concerns, and describe the selected remedy chosen.

In addition, the review will document any regulatory requirements, changed conditions, or updated standards for each site.

Five –Year Review Objectives

Assess Remedy Performance

Is the remedy functioning as intended? Are exposure assumptions, toxicity data, cleanup levels and remedial action objectives (RAOs) used at the time of the selection of the remedy still valid?

Protectiveness determinations for active (operating) and non-active (Monitored Natural Attenuation) Remedies

Is the selected remedy currently protective of human health and the environment, or will be protective into the future? Has any other information come to light that could call into question the protectiveness of the remedy ?

March Records of Decision

- The select remedies were documented in the following decision documents:
 - Operable Unit 1 Record of Decision (USAF 1996)
 - Operable Unit 2 AFRPA Record of Decision (USAF 2004)
 - Operable Unit 2 AFRC Record of Decision (USAF 2005)
 - Operable Unit 4 ROD (USAF 2005)

Five Year Review Team

The Remediation Advisory Board (RAB) members and public are invited to participate in the review process along with the Regulatory agencies. A public notice was run in the Press Enterprise (local newspaper). Questionnaires are available upon request. All comments are welcome. The final document will be issued to the regulatory agencies for signature in July 2014.

The 2014 Review is being performed by AECOM on behalf of the Air Force. The AECOM Contact is:

Mr. Jagadish Gundarlahalli, (714) 689-7277 email: jagadish.gundarlahalli@aecom.com

Question for the sites may also be directed to remedial project managers:

Air Force Reserve, Mr. Eric Lehto (951) 655-5060, email: eric.lehto@us.af.mil

USEPA Region 9, Mr. John Lucey (415) 972-3145, email: lucey.john@epamail.epa.gov

DTSC, Mr. Stephen Niou, (714) 484-5458, email: Snou@dtsc.ca.gov

Ms. Patricia Hannon (951) 782-4498, email: phannon@waterboards.ca.gov

Five-Year Review Sites

The following 15 sites will be evaluated as part of the 3rd Five-Year Review

1. **Site 1- Aircraft Isolation Area/Fuel Drainage Area:** Restricted from residential use in ROD due to surface PAH contamination
2. **Site 4 – Landfill No. 6:** Currently, post closure monitoring and maintenance including cap maintenance; groundwater (GW) and landfill gas (LFG) monitoring are being conducted.
3. **Site 5 – Landfill No. 3:** Land Use Controls (LUCs) implemented through Base General Plan.
4. **Site 6 – Landfill No. 4:** Currently, post-closure monitoring and maintenance including leachate disposal; cap maintenance; GW, leachate, and LFG monitoring are being conducted.
5. **Site 7– Fire Protection Training Area No. 2:** Currently long-term monitoring (LTM) monitoring and skimming are being conducted, LUCs to prevent residential usage.
6. **Site 11 – Bulk Fuels Storage Area:** Restricted from residential use in ROD due to surface PAH contamination.
7. **Site 17 – Swimming Pool Fill:** The selected remedy in the ROD is restriction from residential use and digging more than 7 feet due to PCB contamination in the soil.
8. **Site 19 – West March Sludge Drying Beds:** The selected remedy in the ROD is restriction from residential use due to PAHs, PCBs, hexavalent chromium, and thallium in the surface soil.

Five-Year Review Sites

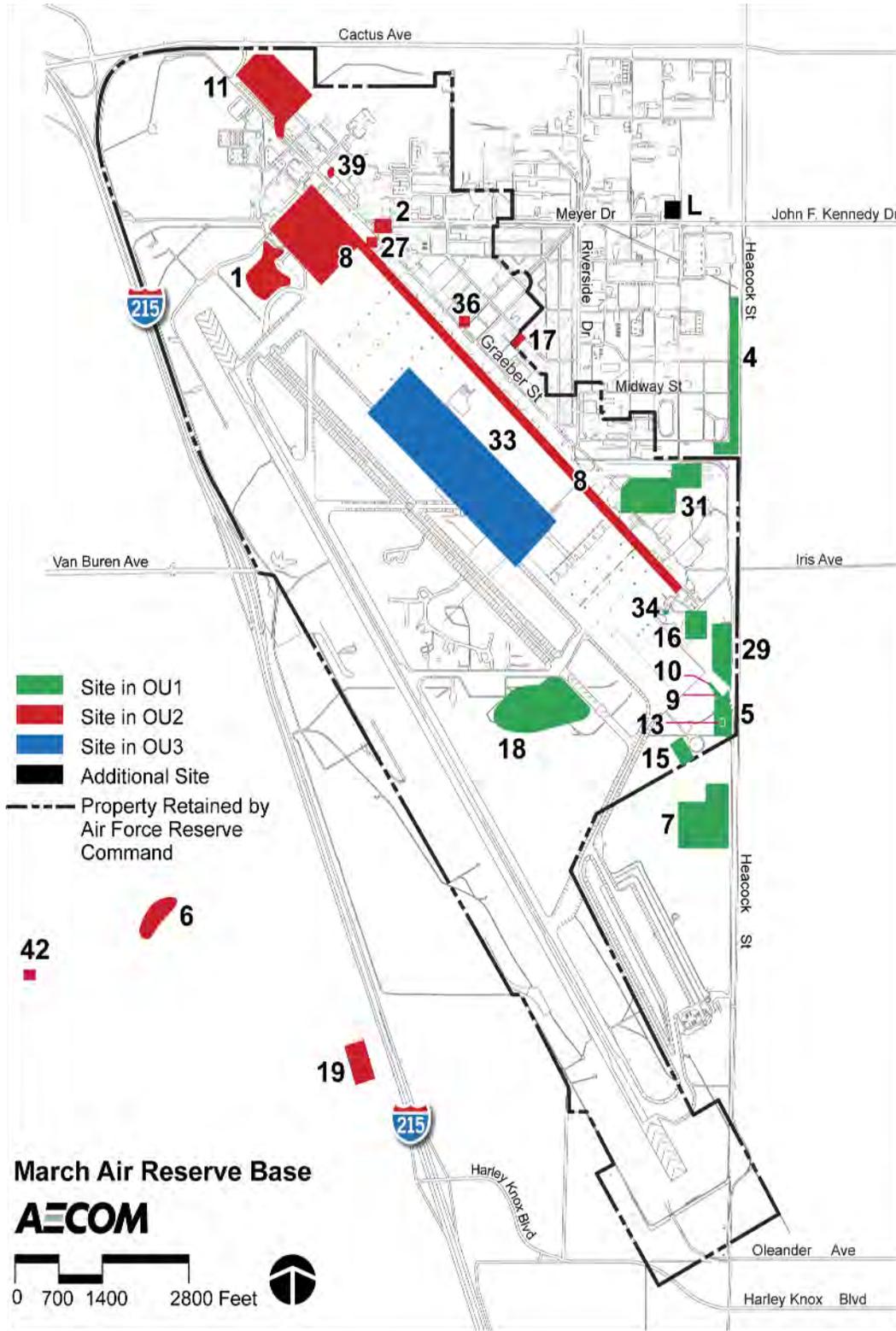
9. **Site 29 – Fire Protection Training Area No. 1:** Restricted from residential use in ROD due to beryllium, lead, manganese, and dioxins in the surface soil.
10. **Site 31 – Solvent Spill:** Currently, groundwater extraction is being conducted primarily due to elevated TCE levels. Further evaluation of the surface soil contamination indicates no further action is the appropriate remedy and a proposed plan to document this change is currently being reviewed by the agencies.
11. **Site 34 – Pritchard Refueling System:** Restricted from residential use in ROD due to surface PAH contamination.
12. **Operable Unit 1 Groundwater Plume:** Currently, long-term monitoring and extraction and treatment for VOCs as required by ROD is ongoing.
13. **Site L – Former NCO Club Swimming Pool/PCB Site:** Restricted from residential use due to PCB contamination in surface soil.
14. **Site 18 – Engine Test Cell (Petroleum Site):** Currently skimming, monitoring for benzene, and institutional controls are being conducted as per the selected remedy in the RAP.
14. **Site 33 – Panero Aircraft Refueling Facility (Petroleum Site):** Currently skimming, monitoring for benzene, and institutional controls are being conducted as per the selected remedy in the RAP.

Five-Year Review Sites

Based on the Air Force request, Site 33 – Panero Aircraft Refueling Facility (Petroleum Site) which was not included in the last Five-Year Review will be evaluated as part of this Five-Year Review.

The following two sites which were evaluated in the last Five-Year Review will not be evaluated in this Five-Year Review.

- | | |
|--|--|
| • Site 12 – Civil Engineering Yard | Closed as part of the last Five-Year Review in 2009 |
| • Site 42 – Building 3404 Transformers | The soil and groundwater components have been addressed in the OU2 ROD (April 2004) as a NFA (UU/UE) with no restriction on land use, and the responsibility of maintenance of the non-CERCLA component i.e., concrete surface has been transferred to the County of Riverside |



March ARB/ Former March AFB Environmental Cleanup Program Status

1. Site 7, Fire Training Area #2

Additional soil removal for the “tar” on the ground was completed in October. Approximately 825 tons of contaminated soil was removed.

The Soil Vapor Extraction (SVE) Pilot Study removed 2454 lbs of TCE and 3660 lbs of petroleum hydrocarbons from soil. The SVE system was restarted earlier this year for one day to take vapor samples. This type of sampling, called “rebound sampling” is used to give an indication of how much contamination remains in the soil. The main SVE system may be restarted next year.

A smaller SVE system on the southern end of the site (closer to the warehouse) is in operation.

Additional soil removal for “tar” on the ground has recently been completed.

2. Site 34, Pritchard Refueling System

An Explanation of Significant Differences (ESD) to change the remedy for surface soils from excavation and low temperature thermal desorption to excavation and off base disposal is being routed for signature by the Air Force, US EPA, California Department of Toxic Substances Control and the Santa Ana Regional Water Quality Control Board. Three of the four agencies have signed.

3. Record of Decision (ROD) Amendments to Change Remedies from Land Use Controls to No Further Action, Unlimited Use/Unrestricted Exposure

Several Sites on March ARB and Former March AFB have Land Use Controls. These sites have levels of contamination that are ok for the current use, but were calculated to be too high for Unlimited Use/Unrestricted Exposure.

The Air Force wants to reduce its future environmental costs by achieving Unlimited Use/Unrestricted Exposure for these sites. This could be done by further cleanup or an improved analysis of site risks.

This can't be done without community input and regulatory concurrence. Community input will be obtained thru the Proposed Plan process, similar to what was done for Site 7 in 2011. More Proposed Plans are being prepared.

The Sites being considered for proposed plans include Site 1, Site 11, Site 17, Site 19, Site 29, Site 31, and Site 45.

4. Site 33, Panero Refueling System

Jet fuel from underground storage tanks and piping has leaked into the soil and groundwater under the site. The leaking tanks and pipes have been removed. A significant amount of contamination has been removed by a variety of active clean up techniques. Some contamination remains on site.

Contamination is still being removed by Natural Attenuation, where naturally occurring microbes break down the fuel. Groundwater monitoring continues at the site. Free product (un-dissolved jet fuel) used to accumulate in monitoring wells, but has now largely disappeared.

5. Site 18, Jet Engine Test Cell

Similar to Site 33, Natural Attenuation is removing the remaining fuel contamination at Site 18. Groundwater monitoring continues at the site. Some free product remains.

6. Site 8 and 36

A Pilot Study for a new cleanup technique, Enhanced In-Situ Bioremediation has been completed. This technique uses microbes (dehalococoides ethenogenes), that break down solvents. These microbes are less common and less hearty than the microbes that break down fuel. In enhanced bioremediation, vegetable oil, lactate or other carbon source is added to the soil to promote microbe growth. Then the microbes are added to the soil.

This technique is planned to be used to complete the cleanup. Proposed Plans for both Site 8 and Site 36 will be prepared to get community input.

7. EGETS, Site 31/OU1 Plume Treatment Facility

The Expanded Groundwater Extraction and Treatment System (EGETS) facility is operating, treating approximately 150,000 gallons of water per day. The EGETS system is a series of wells at the base boundary to intercept contaminated groundwater at the base boundary, originally constructed in 1992 and expanded in 1996. The system may be expanded again under the Performance Based Remediation.

8. Groundwater Monitoring Program

Under this program, the water level is measured in about 375 wells and water samples are taken and analyzed in about 270 wells to monitor the groundwater condition and to evaluate the performance of the clean up systems.

APPENDIX C

LAND USE RESTRICTION SECTION OF BASE GENERAL PLAN



MARCH AIR RESERVE BASE

4A.19 RCRA, IRP, and Toxic Substances

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), established a series of programs for cleanup and disposal of hazardous waste disposal and spill sites nationwide. March ARB addresses these issues through the IRP, which was developed by the DoD to clean up soil and groundwater contamination from past hazardous waste disposal practices and spills at military facilities. The IRP is designed to protect human health and to ensure that natural resources are restored for future use.

The Management Action Plan (MAP) is a key document for managing the environmental restoration program at the installation. The MAP describes an integrated, coordinated approach for conducting all environmental restoration activities required at the installation. As these activities usually require several years to complete, the MAP will address all required actions by year to the date when the environmental restoration requirements are expected to be complete. The MAP is intended to be a living document, and will be kept current by the installation with environmental restoration requirements. At a minimum, the MAP is to be updated annually.

Contamination at March ARB has resulted from years of aircraft operations and maintenance that involved substances such as fuels, oils, solvents, construction rubble, and household wastes (see **Exhibit: Past Spill Locations, Watersheds, Outfall Points and Surface Waters, Section 4A-19**).

Cleanup of these sites began in 1983 with the hazardous waste contamination (see **Photo 4A-10**). In 1989, March ARB was placed on the U.S. Environmental Protection Agency's (USEPA) National Priorities List (NPL), a list of sites of special interest that require immediate attention. An agreement signed in 1990 by the Air Force, USEPA, California Department of Toxic Substances Control, and California Regional Water Quality Control Board set a series of specific goals and timetables for the cleanup program. The USEPA and California agencies are partners in the cleanup and provide regulatory oversight throughout the process.



Photo 4A-10 Workers remove mercury contamination from the base of the water tower, Site 44

One Record of Decision (ROD) for Operable Unit 1 (OU1) IRP sites was signed in 1996. A second ROD for OU2 Sites 1, 11, 37 and 39 was signed in 2005. Remedial Action Plans were approved for Sites 18 (2004) and Site 33 (2003). The process to develop a ROD for OU2 Sites 8 and 36 is in progress. In total, 44 sites have been investigated on March ARB and the former March AFB (see **Exhibit: IRP Sites, Section 4A.19**). The majority of sites at March ARB require no further action, or have been cleaned up (see **Photo 4A-11 and**



MARCH AIR RESERVE BASE



Photo 4A-11 Post Office (former gas station and IRP Site)

reuse (see Exhibit: IRP Sites Table, Section 4A.19). However, five sites should only be reused for industrial uses and are not suitable for residential use or other uses with sensitive groups such as medical or childcare. Additionally, Site 5 is a landfill that may be restricted from future development. Site investigation has determined that there was no soil contamination, but landfill materials remain in this location. Furthermore, groundwater from Sites 18 and 33 cannot be used.

Table: IRP Sites, Section 4A.19).

Approximately 21 sites are located within the cantonment area. A Public Health Assessment for March AFB/ ARB by the Agency for Toxic Substances and Disease Registry (report date March 13, 2001) concluded that there are no apparent public health hazards in the past, currently, or in the future.

Contributing to the conclusion that there is no public health hazard is that groundwater under the base and near the base is not being used. Some of the groundwater under the base has fuel and solvents above drinking water standards. The groundwater solvent plume (primarily consisting of trichloroethylene (TCE) and tetrachloroethylene (PCE) has migrated past the eastern boundary of the base. The Groundwater Extraction and Treatment System (EGETS), a groundwater interdiction system is in place at the base boundary. An extensive system of groundwater monitoring wells are in place and "hot spot" clean ups have taken place. Information on the plumes and clean up are maintained in the 452 MSG/CEV office.

The majority of IRP sites are acceptable for

Land Use Controls

Site 1 and Site 11 land use controls are specified in this plan in accordance with the OU2 ROD for Sites 1, 11, 37 and 39, dated September 2005. For IRP Sites 1 (Aircraft Isolation Area) and 11 (Bulk Fuel Storage Area), land use controls provide for overall protection of human health and the environment by prohibiting industrial land use.

Future residential land use is prohibited because elevated levels of polycyclic aromatic hydrocarbons were found in the surface soil. Access to the sites is limited to authorized personnel. Construction or use of Site 1 and Site 11 for residences, public or private schools, day care centers, or hospitals for human care is prohibited.

Site 29 land use controls are specified in the OU1 ROD dated June 1996. Beryllium, lead, manganese and two dioxins were detected at concentrations that exceed EPA residential land use Preliminary Remediation Goals in the surface soils. The site is prohibited from residential land use.

A revision to the OU1 ROD to prohibit



residential land use at Site 31 and 34 is planned due to elevated levels of polycyclic aromatic hydrocarbons.

The Remedial Action Plans for Sites 18 and 33 prohibit the use of contaminated groundwater. Information on the extent of groundwater contamination is maintained in the 452 MSG/CEV office.

Base Landfill

March ARB does not currently operate an on-base solid waste landfill. Waste Management, Inc, handles the collection transportation, and disposal of solid waste generated by base activities and personnel. This includes collection from approximately 66 locations (over 80 dumpsters total) on the base once a week and with service at the Consolidated Club three times per week due to food waste. Additional pickups are scheduled as necessary, such as after UTA weekend events. Construction and Demolition (C&D) waste generated under contract are the responsibility of the contractor. Non-recyclable waste generated by base personnel is collected in a C&D dumpster located near the recycling yard.

Underground Storage Tanks

The BCE staff at March ARB report 51 aboveground storage tanks, 21 oil/water separators (OWSs), and 13 underground storage tanks (USTs). In addition, the aviation fuel distribution system at March ARB has two 4000-gallon product recovery tanks, one at Facility 485 and the other at Facility 1270. Where no contamination has occurred, fuel storage tanks themselves do not pose a significant constraint to future development at March ARB. Safety and potential soil and water contamination associated with fuels should be considered when planning future development.

APPENDIX D

INSTITUTIONAL CONTROLS/LAND USE CONTROLS FROM THE ROD

Appendix D
Institutional Controls/
Land Use Controls

Institutional Controls/Land Use Controls

Site 1 and 11 (from Section 9.2, Selected Remedies, ROD for Sites 1, 11, 37 and 39, September 2005)

The following measures related to Land Use Controls will apply to Sites 1 and 11.

(1) The Base Comprehensive Plan/Base General Plan (2004 or latest version) will incorporate the specific Land Use Controls required at Site 1 and 11 based on the presence of residual levels of PAHs that exceed residential PRGs in surface soil. The Base Comprehensive Plan/Base General Plan will also contain a map indicating all areas where contaminated soil is located, the type of contamination and what Land Use Controls are in effect for each of those areas.

The Base Comprehensive Plan/Base General Plan (2004 or latest version) implements “zone-like” requirements at March ARB. Air Force installations require this comprehensive planning document for the establishment and maintenance of the Land Use Controls. The Base Comprehensive Plan/Base General Plan (2004 or latest version) currently resides in the office of the Base Civil Engineer.

The AF will make the land use control sections of the current and any revision of the Base Comprehensive Plan/Base General Plan available to regulatory agencies upon request. The AF will provide the regulators 30 days notice of any changes to the land use control provisions of the Base Comprehensive Plan/Base General Plan.

(2) The Air Force will notify the regulators at least six (6) months in advance of any land sale, transfer of property, or land lease, that is subject to use restrictions in accordance with CERCLA Section 120(h). If it is not possible for the facility to notify the regulators at least six months prior to any transfer or sale, then the Air Force will notify the regulators as soon as possible but no later than 60 days prior to the sale, transfer, or lease. The Air Force further agrees to provide the regulators with similar notice, within the same time frames, as to federal to federal transfer of property accountability and administrative control of the ERP Site. Review and comment opportunities afforded to the regulators as to such federal to federal transfers shall be in accordance with all applicable federal laws. The Air Force will provide EPA and the State of California a copy of the executed deed or transfer assembly.

(3) The Air Force shall not modify or terminate Land Use Controls, implementation actions, or modify land use without approval by EPA and the State of California. The Air Force shall seek prior concurrence before any anticipated action that may disrupt the effectiveness of the Land Use Controls or any action that may alter or negate the need for Land Use Controls.

The Air Force shall notify EPA and DTSC within 45 days in advance of any proposed land use changes that are inconsistent with land use control objectives or the selected remedy.

(4) The Air Force will notify the regulators via e-mail or telephone as soon as practicable, but no later than two weeks after discovery of any activity that is inconsistent with the Land Use Controls, or any action that may interfere with the effectiveness of the Institutional Controls, and shall provide what corrective measures have been taken or are planned.

(5) The Air Force will conduct annual monitoring of the Land Use Controls and undertake prompt action to address activity that is inconsistent with the Land Use Controls. Annual monitoring will include review of the land use control provisions of the Base Comprehensive Plan/Base General Plan, dig permitting process, construction review procedures, and any other relevant land use control provisions specified in this ROD. . The Air Force will submit to the regulatory agencies an annual monitoring report on the status of the Land Use Controls and how any deficiencies or inconsistent uses have been addressed. The report will not be subject to approval and/or revision by the regulatory agencies. The annual monitoring reports will be used as part of the Five Year Review to evaluate the effectiveness of the remedy. The Five Year Review report will make recommendations on the continuation, modification, or elimination of annual reports and Land Use Control monitoring frequencies. The Five Year Review report will be submitted to the regulatory agencies for review and comment.

(6) The Air Force will implement, monitor, maintain, and enforce Land Use Controls in accordance with CERCLA and the NCP. The Air Force Land Use Controls will be maintained until the concentration of hazardous substances in soil are at such levels to allow for unrestricted and unlimited exposure. The Five Year Review process will be used to document when cleanup standards that allow for unlimited use and unrestricted exposure have been achieved.

(7) Land use restrictions are enforced through the dig permit system. No construction or digging will be allowed without prior approval from the Base Engineer in the form of a dig permit or other approval as required by applicable Air Force instruction and procedures. The Air Force will ensure that these or similar equivalent instructions, processes, and or requirements will be complied with for all proposed construction or surface soil disturbing activities at Sites 1 and 11. The Base Engineer will not approve dig permits for activities inconsistent with the Land Use Controls.

Specific language is included in this ROD regarding implementation, monitoring, and enforcement of the selected ICs. Therefore, compliance with the terms of this ROD will be protective of human health and the environment. Because the restrictions are specifically described in Section 9 and the means for implementing the restrictions are detailed in Section 7, it is not necessary for the Air Force to submit any new post-ROD, IC implementation documents, such as a Land Use Control Implementation Plan (LUCIP), a new O&M plan or a Remedial

Action (RA) work plan. The existing Base Comprehensive Plan should be revised to include the restrictions.

As part of the NPL deletion process, EPA must make the determination that the remedial action for OU2 has achieved its objectives. In this case, because the OU2A remedy consists of ICs only, EPA's determination that the remedy is protective will be made based on the IC annual monitoring reports, so long as adequate information is provided in the report.

The ICs Alternatives include various enforceable use restrictions and land use controls on the use of the property. The Air Force is responsible for implementing, maintaining, monitoring reporting, and the enforcement of the remedial actions (including institutional controls). The Air Force will exercise this responsibility in accordance with CERCLA and the National Contingency Plan (NCP).

Annual Evaluations/Monitoring:

The Air Force will conduct annual monitoring and undertake prompt action to address activity that is inconsistent with the IC objective or use restrictions, exposure assumptions or any action that may interfere with the effectiveness of the ICs. Annual monitoring will include review of the land use control provisions of the Base Comprehensive Plan/Base General Plan, dig permitting process, construction review procedures, and any other relevant land use control provisions specified in this ROD. The Air Force will submit to the regulatory agencies annual monitoring report on the status of the ICs and how any IC deficiencies or inconsistent uses have been addressed. The IC monitoring reports will not be subject to approval and/or revision by the regulatory agencies. The annual monitoring reports will be used as part of the Five Year Review to evaluate the effectiveness of the remedy. The Five Year Review report will make recommendations on the continuation, modification, or elimination of annual reports and IC monitoring frequencies. The Five Year Review report will be submitted to the regulatory agencies for review and comment. The regulatory agencies may conduct inspections of operations and maintenance activities and ICs at Sites 1 and 11.

Site 4 (from Table 1, Section D.4, Use Restrictions, Finding of Suitability for Early Transfer (FOSET) for Parcels D-1, I-2, J-4 and K-5D South, February 2007)

The Grantee covenants and agrees not to extract or permit to be extracted any water from below the surface of the ground within the boundary of the Property except for monitoring purposes.

Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would limit access to any equipment or systems associated with groundwater monitoring.

The Grantee covenants and agrees that it will not conduct or allow others to conduct any construction, excavation, drilling, grading, removal, trenching, filling earth movement, mining, and planting that would disturb the soil or the landfill cover, including the vegetative cap, or the injection or release of water or other fluids except for the purpose of monitoring groundwater or landfill gas.

The Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause disturbance or removal of fencing or signs intended to exclude the public from the landfill.

The Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause the surface application of water (e.g., irrigation) to the extent that the integrity of the landfill is impacted and injection of water or other fluids that might affect groundwater flow direction.

The Grantee covenants and agrees that it will not conduct or allow other to conduct activities that would cause disturbance of any landfill equipment and systems, including the leachate collection system, the groundwater monitoring systems, settlement monuments, or the drainage, sub-drainage, or erosion controls for the landfill cover.

The Grantee covenants and agrees that it will not conduct, or allow others to conduct, activities that limit the Air Force, environmental regulators, or representatives of these agencies access to any landfill equipment and systems, including the leachate collection system, the groundwater monitoring systems, settlement monuments, or the drainage, sub-drainage, or erosion controls for the landfill cover.

The Grantee and its successors are restricted from using portions of the property for residential purposes, for traditional or private schools for persons under 18 years of age, for day care for children, or for a hospital for human care.

Site 6 (from Section 9.1, Selected Remedy for Site 6, AFRPA OU2 ROD, April 2004)

- Grantee covenants and agrees that it will not use Site 6 for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day care centers for children.

- Grantee covenants and agrees that it will not conduct or allow others to conduct any construction, excavation, drilling, grading, removal, trenching, filling earth movement, mining, and planting that would disturb the soil or the landfill cover, including the vegetative cap, or the injection or release of water or other fluids except for the purpose of monitoring groundwater or landfill gas.
- Grantee covenants and agrees that it will not extract groundwater from the property for any purpose other than monitoring.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause disturbance or removal of fencing or signs intended to exclude the public from the landfill.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause the surface application of water (e.g. irrigation) to the extent that the integrity of the landfill is impacted and injection of water or other fluids that might affect groundwater flow direction.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause disturbance of any landfill equipment or systems, including the leachate collection system, the groundwater monitoring systems, and settlement monuments; or that could affect the drainage, sub-drainage, or erosion controls for the landfill cover.
- Grantee covenants and agrees that it will not conduct or allow other to conduct activities that limit access to any landfill equipment and systems, including the leachate collection system, the groundwater monitoring systems, settlement monuments, or the drainage, sub-drainage, or erosion controls for the landfill cover.

Site 7 (from Table 1, Section D.4, Use Restrictions, Finding of Suitability for Early Transfer (FOSET) for Parcels D-1, I-2, J-4 and K-5D South, February 2007)

The Grantee covenants and agrees not to extract or permit to be extracted any water from below the surface of the ground within the boundary of the Property except for monitoring purposes.

Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would limit access to any equipment or systems associated with groundwater monitoring.

The Grantee and its successors are restricted from using portions of the property for residential purposes, for traditional or private schools for persons under 18 years of age, for day care for children, or for a hospital for human care.

The Grantee covenants and agrees that it will not conduct, or allow others to conduct, any activity that would result in the movement of soils from Site 7. The Grantee and its successors shall notify the Grantor, EPA Region IX, and State at least thirty (30) days prior to construction of any building. Any buildings will be constructed with engineering controls (e.g., vapor barriers, specialized fan systems, or other related engineered controls) to mitigate the potential for vapors to migrate from the subsurface into the building.

Site 12 (from Section 9.2, Selected Remedy for Site 12, AFRPA OU2 ROD, April 2004)

- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause disturbance of any equipment or systems associated with groundwater monitoring.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would limit access to any equipment or systems associated with groundwater monitoring.
- Grantee covenants and agrees that it will not extract groundwater from the property for any purpose other than monitoring.

Site 17 (from Section 9.3, Selected Remedy for Site 17, AFRPA OU2 ROD, April 2004)

- Grantee covenants and agrees that it will not use Site 17 for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day care centers for children.
- Grantee covenants and agrees that it will not conduct or allow others to conduct any activity that would disturb the soil at or below 7 feet below ground surface.

Site 19 (from Section 9.4, Selected Remedy for Site 19, AFRPA OU2 ROD, April 2004)

- Grantee covenants and agrees that it will not use Site 19 for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day care centers for children.
- Grantee covenants and agrees that it will not conduct or allow others to conduct any activity that would disturb the soil in the former sludge drying pits.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would result in removal, disturbance, or other interferences with fences or other barriers to access to or signs notifying the public of Site 19.

Site 29 (from Section 6.5.2.1, Surface Soil Cleanup Standards and Goals, OU1 ROD, June 1996)

U.S. EPA Region IX industrial PRGs, rather than residential PRGs, were used at Site 29 for the following reasons:

- Site 29 is located in an area to be retained by March Air Force Base, and to which the public does not have access.

- It is unlikely that Site 29 will be used for residential purposes in the future.

- Cleanup of Site 29 is considered cost-prohibitive in light of the minor risk reduction that would be achieved. The combined cost for Site 29 and Site 7 (which has also been selected for remediation based on industrial PRGs) would be \$22 million.

The Air Force will ensure that this site is used appropriately in the future by implementing deed restrictions prohibiting residential land use.

Based on U.S. EPA Region IX industrial land use PRGs, no chemicals at this site require remediation.

Site L (from Section 2.5.7, Site L, OU4 ROD, September 2005)

- Grantee covenants and agrees that it will not use Site L for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day care centers for children.

APPENDIX E
OUI PLUME GROUNDWATER CONCENTRATIONS

APPENDIX E-1. SUMMARY OF ANALYTICAL RESULTS FOR OU 1 PLUME, 2011-2012 ANNUAL MONITORING PERIOD
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Analyte	GCG	EGETS										
		EX01 AU		EX02 AU	EX03 AU			EX04 AU		EX05A AU		
		11/16/2011	05/22/2012	11/16/2011	11/16/2011	11/16/2011 ^(a)	05/22/2012	05/22/2012	05/22/2012 ^(a)	11/16/2011	05/22/2012	
<u>Volatile Organics (ug/L)</u>												
benzene	1	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	0.39 F (S)	0.69 (S)				
carbon tetrachloride	0.5	<0.50 (S)	<0.50 (S)	0.21 F (S)	0.42 F (S)	0.44 F (S)	0.64 (S)	0.80 (S)	0.78 (S)	<0.50 (S)	<0.50 (S)	0.27 F (S)
chlorobenzene	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)				
chloroform	NE	0.73 (S)	0.85 (S)	1.4 (S)	2.0 (S)	2.0 (S)	2.3 (S)	3.1 (S)	3.1 (S)	2.0 (S)	2.2 (S)	
1,1-dichloroethane	NE	<1.0 (S)	0.20 F (S)	0.28 F (S)	0.32 F (S)	0.33 F (S)	0.37 F (S)	0.37 F (S)	0.34 F (S)	0.53 F (S)	0.59 F (S)	
1,2-dichloroethane	0.5	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)				
1,1-dichloroethene	6	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	0.42 F (S)	0.55 F (S)					
cis-1,2-dichloroethene	6	0.21 F (S)	<1.0 (S)	0.20 F (S)	0.25 F (S)	0.26 F (S)	0.28 F (S)	0.46 F (S)	0.41 F (S)	130 (S)	150 (S)	
trans-1,2-dichloroethene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)				
ethylbenzene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)				
methyl tert-butyl ether (MTBE)	NE	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)				
tetrachloroethene (PCE)	5	2.7 (S)	3.6 (S)	3.0 (S)	4.1 (S)	4.2 (S)	5.6 (S)	6.5 (S)	6.4 (S)	3.2 (S)	4.2 (S)	
toluene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	0.23 F (S)				
trichloroethene (TCE)	5	2.0 (S)	2.5 (S)	1.3 (S)	1.7 (S)	1.7 (S)	2.4 (S)	3.4 (S)	3.4 (S)	59 (S)	89 (S)	
vinyl chloride	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)				
m- & p-xylene	NE	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)				
o-xylene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)				

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Analyte	GCG	EGETS (cont'd)									
		EX06 AU		OU1GEW01 AU		OU1GEW02 AU		OU1GEW03 AU/AL		OU1GEW04 AU/AL/BD	
		11/16/2011	05/22/2012	11/16/2011	05/22/2012	11/16/2011	05/22/2012	11/16/2011	05/22/2012	11/16/2011	05/22/2012
<u>Volatile Organics (µg/L)</u>											
benzene	1	<0.40 (S)	<0.40 (S)								
carbon tetrachloride	0.5	<0.50 (S)	0.51 (S)	0.79 (S)	<0.50 (S)	<0.50 (S)					
chlorobenzene	NE	<0.50 (S)	<0.50 (S)								
chloroform	NE	<0.50 (S)	0.25 F (S)	0.26 F (S)	0.47 F (S)	1.0 (S)	1.2 (S)	1.5 (S)	1.8 (S)	0.25 F (S)	0.24 F (S)
1,1-dichloroethane	NE	<1.0 (S)	0.24 F (S)	<1.0 (S)	<1.0 (S)	0.26 F (S)	0.30 F (S)	0.31 F (S)	0.36 F (S)	<1.0 (S)	<1.0 (S)
1,2-dichloroethane	0.5	<0.50 (S)	<0.50 (S)								
1,1-dichloroethene	6	<1.0 (S)	<1.0 (S)								
cis-1,2-dichloroethene	6	0.22 F (S)	0.25 F (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	0.22 F (S)	0.31 F (S)	0.25 F (S)	4.5 (S)	2.2 (S)
trans-1,2-dichloroethene	NE	<1.0 (S)	<1.0 (S)								
ethylbenzene	NE	<1.0 (S)	<1.0 (S)								
methyl tert-butyl ether (MTBE)	NE	<5.0 (S)	<5.0 (S)								
tetrachloroethene (PCE)	5	0.61 F (S)	0.90 F (S)	1.2 (S)	2.6 (S)	2.8 (S)	3.5 (S)	6.0 (S)	7.3 (S)	1.6 (S)	1.9 (S)
toluene	NE	<1.0 (S)	<1.0 (S)								
trichloroethene (TCE)	5	2.2 (S)	2.6 (S)	2.0 (S)	3.2 (S)	2.6 (S)	4.0 (S)	2.2 (S)	2.8 (S)	30 (S)	29 (S)
vinyl chloride	NE	<0.50 (S)	<0.50 (S)								
m- & p-xylene	NE	<2.0 (S)	<2.0 (S)								
o-xylene	NE	<1.0 (S)	<1.0 (S)								

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Analyte	GCG	EGETS (cont'd)								
		OU1GEW05	OU1MW12		OU1TW02			OU1TW03		
		AU/AL	AU		AU/BD			BD		
	05/22/2012	11/16/2011	05/22/2012	11/16/2011	11/16/2011 ^(a)	05/22/2012	11/16/2011	05/22/2012	05/22/2012 ^(a)	
<u>Volatile Organics (µg/L)</u>										
benzene	1	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)
carbon tetrachloride	0.5	0.42 F (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)
chlorobenzene	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)
chloroform	NE	0.72 (S)	0.64 (S)	0.76 (S)	7.5 (S)	7.9 (S)	10 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)
1,1-dichloroethane	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)
1,2-dichloroethane	0.5	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)
1,1-dichloroethene	6	<1.0 (S)	<1.0 (S)	<1.0 (S)	0.37 F (S)	0.40 F (S)	0.46 F (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)
cis-1,2-dichloroethene	6	<1.0 (S)	<1.0 (S)	<1.0 (S)	0.26 F (S)	0.22 F (S)	0.27 F (S)	5.3 (S)	3.9 (S)	3.8 (S)
trans-1,2-dichloroethene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)
ethylbenzene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)
methyl tert-butyl ether (MTBE)	NE	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)
tetrachloroethene (PCE)	5	3.2 (S)	1.3 (S)	1.9 (S)	2.4 (S)	2.5 (S)	2.8 (S)	7.3 (S)	6.7 (S)	6.8 (S)
toluene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)
trichloroethene (TCE)	5	1.4 (S)	7.3 (S)	10 (S)	5.2 (S)	5.5 (S)	5.1 (S)	2.5 (S)	1.9 (S)	1.9 (S)
vinyl chloride	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)
m- & p-xylene	NE	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)
o-xylene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)

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Analyte	GCG	Site 4									
		4EX01 AU/BD		4EX02 AU/BD		4MW01 BD		4MW07 AU		4MW08 BD	4MW13 AU
		11/16/2011	05/22/2012	11/16/2011	05/22/2012	11/16/2011	05/22/2012	05/21/2012	05/21/2012 ^(a)	06/06/2012	05/24/2012
<u>Volatile Organics (µg/L)</u>											
benzene	1	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50
chloroform	NE	<0.50 (S)	0.22 F (S)	0.22 F (S)	0.26 F (S)	0.24 F (S)	0.25 F (S)	4.0	3.9	0.28 F (F)	<0.50
1,1-dichloroethane	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	2.9 (S)	2.7 (S)	3.8 (S)	3.9 (S)	12 (S)	13 (S)	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	8.6 (S)	11 (S)	6.6 (S)	7.8 (S)	22 (S)	24 (S)	2.2	2.3	0.22 F (F)	0.52 F (F)
toluene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	1.4 (S)	1.7 (S)	1.9 (S)	2.2 (S)	6.7 (S)	7.1 (S)	9.1	10	4.3	0.27 F (F)
vinyl chloride	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0

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Analyte	GCG	Site 4 (cont'd)				Site 5					
		4MW14	4MW16		4MW18	5MW01	5MW02	5MW03	5MW04		5MW07
		AU	AU		AU	AU	AL	AU	AU		AL
		05/30/2012	12/22/2011	05/29/2012	05/24/2012	06/01/2012	05/24/2012	05/29/2012	12/22/2011	05/29/2012	05/30/2012
<u>Volatile Organics (ug/L)</u>											
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.62	2.1	0.37 F (F)
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	0.79	<0.50	<0.50	<0.50	0.20 F (F)
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.24 F (F)	0.27 F (F)	0.22 F (F)	<0.50	1.3	0.89	1.8	1.5	0.95	1.0
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	0.28 F (F)	<1.0	0.31 F (F)	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	0.27 F (F)	0.38 F (F)	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	1.8	1.2	1.0	4.0	3.2	1.2	3.6	1.4	0.81 F (F)	1.9
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	0.25 F (F)	<1.0	<1.0	2.3	1.2	9.7	2.8	23	20	12
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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		Site 5 (cont'd)									
		5MW08 AU/AL	5MW09 AU	5MW14 AL	5MW16 AU	5MW18 AU	5MW23 AL	5MW28 BD	5MW29 BD	5MW30 BD	
Analyte	GCG	05/31/2012	05/30/2012	05/24/2012	05/31/2012	05/30/2012	05/31/2012	06/01/2012	06/01/2012	06/01/2012	06/01/2012 ^(a)
<u>Volatile Organics (µg/L)</u>											
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	0.27 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.27 F (F)	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	4.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	1.3	<0.50	0.32 F (F)	0.22 F (F)	<0.50	<0.50	<0.50	0.75	<0.50	<0.50
1,1-dichloroethane	NE	0.27 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	0.47 F (F)	<1.0	5.2	<1.0	<1.0	<1.0	2.0	0.22 F (F)	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	0.23 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	2.5	<1.0	0.47 F (F)	0.58 F (F)	<1.0	<1.0	0.21 F (F)	4.4	<1.0	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	7.6	<1.0	4.3	2.1	0.65 F (F)	0.42 F (F)	6.4	6.8	1.6	0.69 F (F)
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte	GCG	Site 5 (cont'd)				Site 7				Site 8	
		5MW31	5MW32	5MW33		5MW34	7MW01	7MW03	7MW04	5M8MW05	
		AU	AL	AL		AL	AU	AU	AU	AU	
		05/21/2012	05/31/2012	05/30/2012	05/30/2012 ^(a)	05/30/2012	12/22/2011	05/29/2012	05/29/2012	05/29/2012	06/06/2012
<u>Volatile Organics (µg/L)</u>											
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	3.9	3.6	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.55	0.45 F (F)	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.23 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	2.7	0.95
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	0.54 F (F)	0.57 F (F)	0.45 F (F)	0.28 F (F)	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.29 F (F)	0.31 F (F)	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	8.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.6	4.1	0.56 F (F)
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	7.3	<1.0	0.30 F (F)	0.27 F (F)	<1.0	<1.0	<1.0	3.0	3.0	0.48 F (F)
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte	GCG	Site 9		Site 15			Site 23		Site 29	
		9MW01	9MW02	15MW01	15MW02	15MW03	23MW02		29MW01	
		AU	BD	AU	AU	AU	AL		AU	
		06/07/2012	06/01/2012	06/05/2012	05/24/2012	06/05/2012	05/21/2012	05/21/2012 ^(a)	01/10/2012	05/30/2012
<u>Volatile Organics (ug/L)</u>										
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	4.4	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	0.38 F (F)	0.67	0.55	0.37 F (F)	0.32 F (F)	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.77	<0.50	1.2	2.8	2.9	0.33 F (F)	0.31 F (F)	1.1	0.56
1,1-dichloroethane	NE	0.54 F (F)	<1.0	0.25 F (F)	0.33 F (F)	0.27 F (F)	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	0.71 F (F)	<1.0	<1.0	0.33 F (F)	0.34 F (F)	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.85 F (F)	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.6 F (F)	<5.0	<5.0
tetrachloroethene (PCE)	5	2.6	<1.0	2.5	5.6	5.3	<1.0	<1.0	2.1	1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.0	<1.0	<1.0
trichloroethene (TCE)	5	3.8	0.52 F (F)	2.6	2.7	5.0	3.5	3.1	16	6.4
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0

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Analyte	GCG	Site 29 (cont'd)				Site 31A						
		29MW03		29MW04	29OW01	31AGEW01	31MW02	31MW04		31MW05	31MW06	
		BD	BD	AU	BD	AU	AU	AU		BD	AU	
		06/01/2012	06/01/2012 ^(a)	05/30/2012	06/01/2012	05/22/2012	05/30/2012	12/21/2011	05/30/2012	06/05/2012	05/31/2012	
<u>Volatile Organics (µg/L)</u>												
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40 (S)	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	0.26 F (F)	<0.50	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	<0.50	<0.50	0.89	0.47 F (F)	0.23 F (S)	<0.50	0.21 F (F)	0.57	<0.50	<0.50	<0.50
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0 (S)	<1.0	4.0	0.79 F (F)	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0 (S)	<5.0	0.20 F (F)	0.21 F (F)	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	<1.0	<1.0	1.1	<1.0	0.84 F (S)	0.51 F (F)	<1.0	<1.0	<1.0	<1.0	0.73 F (F)
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	0.55 F (F)	0.47 F (F)	4.9	2.3	0.98 F (S)	<1.0	22	5.3	4.0	0.29 F (F)	0.29 F (F)
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0 (S)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte	GCG	Site 31A (cont'd)				Site 31B		
		31MW07 BD	31MW08 AU	31OW01 AU	31PW03PRC AU	31BDEW05D AU/AL		31BGEW02 AU/AL
		05/31/2012	05/30/2012	06/04/2012	06/04/2012	06/04/2012	06/04/2012 ^(a)	05/22/2012
<u>Volatile Organics (µg/L)</u>								
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40 (S)
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 (S)
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 (S)
chloroform	NE	<0.50	0.40 F (F)	<0.50	<0.50	<0.50	<0.50	3.4 (S)
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 (S)
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 (S)
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.1 (S)
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 (S)
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 (S)
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 (S)
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 (S)
tetrachloroethene (PCE)	5	0.91 F (F)	1.1	0.62 F (F)	0.96 F (F)	3.3	3.0	2.1 (S)
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 (S)
trichloroethene (TCE)	5	2.2	0.29 F (F)	0.35 F (F)	5.4	0.87 F (F)	0.79 F (F)	28 (S)
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 (S)
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 (S)
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 (S)

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Analyte	GCG	Site 31B (cont'd)						Site 34		
		31BGEW03 AU/BD				31BMW02 AU		34MW02 AL	34MW04 AU	34MW06 AU
		09/08/2011	11/16/2011	01/03/2012	05/22/2012	06/04/2012	06/04/2012 ^(a)	05/31/2012	05/31/2012	05/31/2012
<u>Volatile Organics (ug/L)</u>										
benzene	1	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40 (S)	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	2.2 (S)	1.6 (S)	1.9 (S)	1.6 (S)	8.5	8.9	<0.50	1.3	0.41 F (F)
1,1-dichloroethane	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	7.6 (S)	6.9 (S)	12 (S)	3.2 (S)	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0 (S)	<1.0 (S)	<1.0 (S)	0.40 F (S)	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0 (S)	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	1.6 (S)	0.97 F (S)	1.4 (S)	3.4 (S)	2.1	2.2	0.96 F (F)	2.1	1.9
toluene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	79 (S)	88 (S)	110 (S)	46 (S)	<1.0	<1.0	1.3	0.58 F (F)	0.45 F (F)
vinyl chloride	NE	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0 (S)	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte	GCG	OU 1									
		EX07 AU	EX08 AU	OBMW01A BD	OBMW01B AU	OBMW02B BD	OBMW03 AU			OBMW04A AU	OBMW06A AU
		05/30/2012	05/31/2012	05/21/2012	05/31/2012	05/24/2012	12/22/2011	12/22/2011 ^(a)	05/30/2012	06/06/2012	06/13/2012
<u>Volatile Organics (µg/L)</u>											
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	<0.50	0.67	0.46 F (F)	0.32 F (F)	0.36 F (F)	0.24 F (F)	0.24 F (F)	0.25 F (F)	<0.50	0.25 F (F)
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	0.28 F (F)	0.26 F (F)	0.21 F (F)	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	0.55 F (F)	1.6	0.83 F (F)	0.22 F (F)	5.3	1.7	1.8	3.8	1.2	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	0.91 F (F)	6.0	<1.0	<1.0	0.42 F (F)	9.2	9.3	9.9	2.4	<1.0
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte		OU 1 (cont'd)									
		OBMW06B	OBMW06C	OBMW07A		OBMW07B	OBMW08A	OBMW08B	OBMW08C	OBMW08D	OBMW09B
		AL	AL	AL		AL	AL	AL	AL	AL	AL
GC	06/13/2012	06/13/2012	05/30/2012	05/30/2012 ^(a)	05/30/2012	06/11/2012	06/12/2012	06/12/2012	06/12/2012	05/30/2012	
<u>Volatile Organics (µg/L)</u>											
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.21 F (F)	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	0.30 F (F)	0.29 F (F)	0.47 F (F)	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.26 F (F)	<0.50	<0.50	<0.50	0.58	1.4	1.0	<0.50	<0.50	0.41 F (F)
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22 F (F)	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.57 F (F)	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 (M)	<5.0 (M)	<5.0 (M)	0.29 F (F M)	<5.0
tetrachloroethene (PCE)	5	<1.0	<1.0	<1.0	<1.0	0.21 F (F)	3.6	2.0	<1.0	<1.0	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.32 F (F)	<1.0
trichloroethene (TCE)	5	1.2	<1.0	0.89 F (F)	1.2	4.9	1.8	6.0	0.36 F (F)	<1.0	13
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte		OU 1 (cont'd)									
		OBMW10D	OU1MW01	OU1MW02	OU1MW03	OU1MW04	OU1MW05	OU1MW06	OU1MW07	OU1MW08	OU1MW09
		AU	BD	AU	BD	BD	AL	AU	BD	AU	AU
GC	05/29/2012	05/21/2012	06/05/2012	06/05/2012	05/30/2012	05/30/2012	12/21/2011	06/01/2012	06/01/2012	05/24/2012	
<u>Volatile Organics (µg/L)</u>											
benzene	1	<0.40	<0.40	<0.40	<0.40	0.23 F (F)	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.35 F (F)
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	<0.50	<0.50	<0.50	0.50	0.87	<0.50	<0.50	<0.50	<0.50	1.4
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	0.45 F (F)	<1.0	<1.0	<1.0	<1.0	0.30 F (F)
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	0.69 F (F)	<1.0	<1.0	0.33 F (F)	49	3.0	2.6	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	0.41 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	<1.0	0.25 F (F)	1.0	4.0	95	3.1	12	<1.0	0.71 F (F)	5.6
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	1.1	0.88 F (F)	0.23 F (F)	2.3	27	0.74 F (F)	1.7	0.38 F (F)	2.1	4.2
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	0.20 F (F)	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte		OU 1 (cont'd)								
		OU1MW10	OU1MW11	OU1MW13		OU1MW14	OU1MW15A		OU1MW15B	
		BD	AL	AL		BD	BD		BD	
GCG	05/30/2012	05/31/2012	05/30/2012	05/30/2012 ^(a)	05/24/2012	12/22/2011	05/29/2012	05/29/2012	05/29/2012 ^(a)	
<u>Volatile Organics (µg/L)</u>										
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	1.6	<0.50	0.71	0.64	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.85	<0.50	0.60	0.57	<0.50	0.61	0.61	<0.50	<0.50
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	0.81 F (F)	0.75 F (F)	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	0.95 F (F)	0.93 F (F)	4.7	4.8
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	1.6	<1.0	0.92 F (F)	0.76 F (F)	<1.0	1.6	1.5	<1.0	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	0.78 F (F)	<1.0	6.2	5.6	<1.0	42	35	0.54 F (F)	0.55 F (F)
vinyl chloride	NE	<0.50	0.22 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte	GCG	OU 1 (cont'd)								
		OU1MW16A		OU1MW16B	OU1MW18	OU1MW19	OU1MW24A		OU1MW24B	
		BD	BD	AU	AU	AL	AL	AU	AU	
		11/16/2011	05/22/2012	05/30/2012	05/30/2012	05/30/2012	12/22/2011	05/30/2012	12/22/2011	05/30/2012
<u>Volatile Organics (µg/L)</u>										
benzene	1	<0.40 (S)	<0.40 (S)	0.43	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50 (S)	<0.50 (S)	<0.50	0.37 F (F)	<0.50	0.73	0.90	0.46 F (F)	0.47 F (F)
chlorobenzene	NE	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.78 (S)	1.3 (S)	1.2	0.47 F (F)	0.71	1.3	1.6	2.0	1.7
1,1-dichloroethane	NE	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	0.31 F (F)	0.27 F (F)
1,2-dichloroethane	0.5	<0.50 (S)	<0.50 (S)	0.27 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	0.98 F (S)	1.2 (S)	1.4	<1.0	1.8	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	1.1 (S)	1.2 (S)	2.2	<1.0	0.44 F (F)	<1.0	<1.0	0.23 F (F)	<1.0
trans-1,2-dichloroethene	NE	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0 (S)	<5.0 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	2.0 (S)	2.8 (S)	3.3	1.2	3.0	4.2	5.4	4.7	4.4
toluene	NE	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	36 (S)	42 (S)	75	5.7	36	5.3	6.7	1.6	1.5
vinyl chloride	NE	<0.50 (S)	<0.50 (S)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0 (S)	<2.0 (S)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0 (S)	<1.0 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte		OU 1 (cont'd)									
		OU1MW25		OU1MW27	OU1OW01	OU1OW02	OU1OW03	OU1OW04	OU1PZ05	OU1PZ07	OU1PZ08
		BD		BD	AU	BD	BD	BD	AU	AU	AU
GCG	12/22/2011	05/24/2012	05/24/2012	05/30/2012	06/05/2012	06/05/2012	06/05/2012	05/30/2012	05/30/2012	05/30/2012	
<u>Volatile Organics (ug/L)</u>											
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.30 F (F)	0.32 F (F)	0.32 F (F)	1.1	0.28 F (F)	<0.50	<0.50	5.1	3.6	<0.50
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	0.36 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.45 F (F)	0.39 F (F)	<1.0
cis-1,2-dichloroethene	6	0.76 F (F)	0.84 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0	0.37 F (F)	0.21 F (F)	1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	1.7	1.9	1.3	1.8	1.7	<1.0	<1.0	5.5	5.4	5.7
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	8.6	10	0.21 F (F)	5.8	5.2	<1.0	0.62 F (F)	5.5	4.3	0.65 F (F)
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

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Analyte		OU 1 (cont'd)								
		OU1PZ09	OU1PZ10		RBEMW01A	RBEMW01B		RBEMW01C	RBEMW01D	RBEMW01E
		AU	AU		AL	AL		AL	AL	AL
GCG	05/30/2012	05/31/2012	05/31/2012 ^(a)	06/13/2012	06/13/2012	06/13/2012 ^(a)	06/13/2012	06/13/2012	06/13/2012	06/13/2012
<u>Volatile Organics (µg/L)</u>										
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.22 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20 F (F)
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.21 F (F)
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	7.1	0.31 F (F)	0.30 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.33 F (F)
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

APPENDIX E-1. SUMMARY OF ANALYTICAL RESULTS FOR OU 1 PLUME, 2011-2012 ANNUAL MONITORING PERIOD
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Analyte	GCG	OU 1 (cont'd)								
		RBEMW02A	RBEMW02B	RBEMW03A	RBEMW03B	RBEMW07A	RBEMW07B	RBEMW11A	RBEMW11B	
		AL	AU	AL	AL	AU	AL	AU	AL	AL
		05/21/2012	05/31/2012	05/31/2012	05/31/2012	06/12/2012	06/12/2012	06/12/2012	06/12/2012	06/12/2012 ^(a)
<u>Volatile Organics (ug/L)</u>										
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	0.22 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	0.32 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	3.1	1.4	<1.0	<1.0	<1.0	<1.0	2.4	0.23 F (F)	<1.0
vinyl chloride	NE	<0.50	0.37 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

APPENDIX E-1. SUMMARY OF ANALYTICAL RESULTS FOR OU 1 PLUME, 2011-2012 ANNUAL MONITORING PERIOD
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Analyte		OU 1 (cont'd)								
		RBEMW11C	RBEMW11D	RBEMW11E	RBEMW13A	RBEMW13B	RBEMW13C		RBEMW13D	RBEMW13E
		AL	AL	BD	AU	AL	AL		AL	AL
GCG	06/12/2012	06/12/2012	06/12/2012	06/13/2012	06/13/2012	06/13/2012	06/13/2012 ^(a)	06/13/2012	06/13/2012	
<u>Volatile Organics (ug/L)</u>										
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	<0.50	<0.50	<0.50	0.25 F (F)	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	1.7	<1.0	<1.0	0.66 F (F)	<1.0	<1.0	<1.0	<1.0	<1.0
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

APPENDIX E-1. SUMMARY OF ANALYTICAL RESULTS FOR OU 1 PLUME, 2011-2012 ANNUAL MONITORING PERIOD
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Analyte		Water Supply Wells						
		BOWERS		CLARK1		MENDEZ	NODARSE	TERAO
		AL	AL	AL	AL	AU/AL	AL	AL
GC	01/10/2012	05/22/2012	05/22/2012	05/22/2012 ^(a)	05/22/2012	05/22/2012	05/22/2012	
<u>Volatile Organics (ug/L)</u>								
benzene	1	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
carbon tetrachloride (CTCL)	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	NE	<0.50	<0.50	1.0	1.0	0.22 F (F)	<0.50	0.92
1,1-dichloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	0.5	<0.50	<0.50	0.27 F (F)	0.30 F (F)	<0.50	<0.50	<0.50
1,1-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ethylbenzene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
methyl tert-butyl ether (MTBE)	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
tetrachloroethene (PCE)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
toluene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene (TCE)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
vinyl chloride	NE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m- & p-xylene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Notes:

(a) Field Duplicate
Highlighted concentrations exceed OU 1 Groundwater Cleanup Goal.

<	less than	BD	bedrock aquifer unit	NE	not established
µg/L	micrograms per liter	EGETS	expanded groundwater extraction and treatment system	OU	operable unit
AFRC	Air Force Reserve Command			PQL	practical quantitation limit
AFRPA	Air Force Real Property Agency	GCG	groundwater cleanup goal	RL	reporting limit
AL	lower alluvial aquifer unit	MDL	method detection limit		
ARB	Air Reserve Base				
AU	upper alluvial aquifer unit				

Laboratory-Assigned Qualifier:

F Indicates that the analyte is positively identified and the result is less than the RL but greater than MDL.

Data Validation Qualifiers:

(F) The compound was positively identified but the associated numerical value is below the PQL.
(M) A matrix effect was present.
(S) Screening data (result not validated).

APPENDIX F
PRIORITY POLLUTANTS DETECTED AT SITE 4

Appendix F

Priority Pollutants Detected at Site 4

Table F-1 Priority Pollutants found at Site 4
page 1 of 4

Chemical Name	CAS Registry Number	Detected in Soil sample(s)	Detected in GW sample(s)
ACENAPHTHENE	83-32-9	no	no
ACENAPHTHYLENE	208-96-8	no	no
ACROLEIN	107-02-8	no	no
ACRYLONITRILE	107-13-1	no	no
ALDRIN	309-00-2	no	no
ALPHA-ENDOSULFAN	959-98-8	no	no
ALPHA-LINDANE	319-84-6	no	no
ANTHRACENE	120-12-7	no	no
ANTIMONY	7440-36-0	no	no
AROCLOR 1016	12674-11-2	no	no
AROCLOR 1221	11104-28-2	no	no
AROCLOR 1232	11141-16-5	yes	no
AROCLOR 1242	53469-21-9	yes	no
AROCLOR 1248	12672-29-6	no	no
AROCLOR 1254	11097-69-1	yes	no
AROCLOR 1260	11096-82-5	no	no
ARSENIC	7440-38-2	yes	yes
ASBESTOS (FRIABLE)	1332-21-4	no	no
BENZ(A)ANTHRACENE	56-55-3	yes	no
BENZENE	71-43-2	no	yes
BENZIDINE	92-87-5	no	no
BENZO(A)PYRENE	50-32-8	yes	no
BENZO(B)FLUORANTHENE	205-99-2	yes	no
BENZO(GHI)PERYLENE	191-24-2	yes	no
BENZO(K)FLUORANTHENE	207-08-9	no	no
BENZYL BUTYL PHTHALATE	85-68-7	no	no
BERYLLIUM	7440-41-7	yes	no
BETA-ENDOSULFAN	33213-65-9	no	no
BETA-LINDANE	319-85-7	no	no
BIS(2-CHLORO-1-METHYLETHYL) ETHER	108-60-1	no	no
BIS(2-CHLOROETHOXY)METHANE	111-91-1	no	no
BIS(2-CHLOROETHYL) ETHER	111-44-4	no	no
BIS(2-CHLOROISOPROPYL) ETHER	39638-32-9	no	no
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	yes	yes
BIS(CHLOROMETHYL) ETHER	542-88-1	no	no
4-BROMOPHENYL PHENYL ETHER	101-55-3	no	no

Table F-1 Priority Pollutants found at Site 4

page 2 of 4

Chemical Name	CAS Registry Number	Detected in Soil sample(s)	Detected in GW sample(s)
CADMIUM	7440-43-9	yes	yes
CAMPHECHLOR	8001-35-2	no	no
CARBON TETRACHLORIDE	56-23-5	no	no
4-CHLOR-M-CRESOL	59-50-7	no	no
CHLORDANE	57-74-9	no	no
CHLOROBENZENE	108-90-7	no	no
CHLORODIBROMOMETHANE	124-48-1	no	no
CHLOROETHANE	75-00-3	no	no
2-CHLOROETHYL VINYL ETHER	110-75-8	no	no
CHLOROFORM	67-66-3	no	yes
CHLOROMETHANE	74-87-3	no	no
2-CHLORONAPHTHALENE	91-58-7	no	no
2-CHLOROPHENOL	95-57-8	no	no
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	no	no
CHROMIUM	7440-47-3	yes	yes
CHRYSENE	218-01-9	yes	no
COPPER	7440-50-8	yes	no
CYANIDE	57-12-5	no	no
DDD	72-54-8	yes	no
DDE	72-55-9	yes	no
DDT	50-29-3	yes	no
DELTA-LINDANE	319-86-8	no	no
DI-N-OCTYL PHTHALATE	117-84-0	yes	no
DI-N-PROPYLNITROSAMINE	621-64-7	no	no
DIBENZ(A,H)ANTHRACENE	53-70-3	yes	no
1,2-DIBROMOETHANE	106-93-4	no	no
DIBUTYL PHTHALATE	84-74-2	no	no
1,4-DICHLOROBENZENE	106-46-7	yes	yes
1,2-DICHLOROBENZENE	95-50-1	no	no
1,3-DICHLOROBENZENE	541-73-1	no	no
3,3'-DICHLOROBENZIDINE	91-94-1	no	no
DICHLOROBROMOMETHANE	75-27-4	no	no
1,2-DICHLOROETHANE	107-06-2	no	no
1,1-DICHLOROETHANE	75-34-3	no	yes
1,1-DICHLOROETHYLENE	75-35-4	no	no
DICHLOROMETHANE	75-09-2	no	no
2,4-DICHLOROPHENOL	120-83-2	no	no
1,2-DICHLOROPROPANE	78-87-5	no	yes
1,3-DICHLOROPROPENE (MIXED ISOMERS)	542-75-6	no	no
DIELDRIN	60-57-1	no	no

Table F-1 Priority Pollutants found at Site 4

page 3 of 4

Chemical Name	CAS Registry Number	Detected in Soil sample(s)	Detected in GW sample(s)
DIETHYL PHTHALATE	84-66-2	yes	no
DIMETHYL PHTHALATE	131-11-3	no	yes
2,4-DIMETHYLPHENOL	105-67-9	no	no
4,6-DINITRO-O-CRESOL	534-52-1	no	no
2,4-DINITROPHENOL	51-28-5	no	no
2,4-DINITROTOLUENE	121-14-2	no	no
2,6-DINITROTOLUENE	606-20-2	no	no
1,2-DIPHENYLHYDRAZINE	122-66-7	no	no
ENDOSULFAN SULFATE	1031-07-8	no	no
ENDRIN	72-20-8	no	no
ENDRIN ALDEHYDE	7421-93-4	no	no
ETHYLBENZENE	100-41-4	yes	yes
FLUORANTHENE	206-44-0	yes	no
FLUORENE	86-73-7	no	no
GAMMA-LINDANE	58-89-9	no	no
HEPTACHLOR	76-44-8	no	no
HEPTACHLOR EPOXIDE	1024-57-3	no	no
HEXACHLORO-1,3-BUTADIENE	87-68-3	no	no
HEXACHLOROBENZENE	118-74-1	no	no
HEXACHLOROCYCLOPENTADIENE	77-47-4	no	no
HEXACHLOROETHANE	67-72-1	no	no
INDENO(1,2,3-CD)PYRENE	193-39-5	yes	no
ISOPHORONE	78-59-1	no	no
LEAD	7439-92-1	yes	yes
MERCURY	7439-97-6	yes	no
METHANAMINE, N-METHYL-N-NITROSO	62-75-9	no	no
METHYL BROMIDE	74-83-9	no	no
N-NITROSODIPHENYLAMINE	86-30-6	no	no
NAPHTHALENE	91-20-3	no	no
NICKEL	7440-02-0	yes	yes
NITROBENZENE	98-95-3	no	no
4-NITROPHENOL	100-02-7	no	no
2-NITROPHENOL	88-75-5	no	no
PENTACHLOROPHENOL	87-86-5	no	no
PHENANTHRENE	85-01-8	yes	no
PHENOL	108-95-2	yes	no
PYRENE	129-00-0	yes	no
SELENIUM	7782-49-2	no	yes
SILVER	7440-22-4	yes	no

Table F-1 Priority Pollutants found at Site 4
page 4 of 4

Chemical Name	CAS Registry Number	Detected in Soil sample(s)	Detected in GW sample(s)
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD)	1746-01-6	no	no
1,1,2,2-TETRACHLOROETHANE	79-34-5	no	no
TETRACHLOROETHYLENE	127-18-4	yes	yes
2,3,4,6-TETRACHLOROPHENOL	58-90-2	no	no
THALLIUM	7440-28-0	yes	yes
TOLUENE	108-88-3	yes	yes
1,2-TRANS-DICHLOROETHYLENE	156-60-5	no	no
TRIBROMOMETHANE	75-25-2	no	no
1,2,4-TRICHLOROBENZENE	120-82-1	no	no
1,1,2-TRICHLOROETHANE	79-00-5	no	no
1,1,1-TRICHLOROETHANE	71-55-6	no	no
TRICHLOROETHYLENE	79-01-6	no	yes
2,4,6-TRICHLOROPHENOL	88-06-2	no	no
VINYL CHLORIDE	75-01-4	no	yes
ZINC	7440-66-6	yes	yes

Notes:

1. Soil sample data were obtained from the OU 1 Remedial Investigation
2. Groundwater data were obtained from the groundwater monitoring program before 2001

APPENDIX G
INTERVIEW RECORD FORM

**THIRD FIVE-YEAR REVIEW INTERVIEW RECORD
FOR FORMER MARCH AIR FORCE BASE
AND MARCH AIR RESERVE BASE, CALIFORNIA**

Site Name: Former March AFB and March ARB, California	EPA ID No: CA4570024527
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Subject: Third Five-Year Review for Former March AFB and March ARB, California	Time:	Date:
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Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit:	<input type="checkbox"/> Incoming	<input type="checkbox"/> Outgoing
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Contact Made By:

Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center
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Individual Contacted:

Name: Stephen Niou	Title: RPM	Organization: DTSC
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Telephone No: 714-484-5458 Fax No: 714-484-5437 E-Mail Address: stephen.niou@dtsc.ca.gov	Street Address: 5796 Corporate Av City, State, Zip: Cypress, CA 90630
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Summary of Conversation

Site 1, 4, 5, 6,7, 11,17,19, 29,31, 34, Operable Unit 1, L, 18, and 33

1. What is your overall impression of the environmental cleanup project at March Air Force Base?

The cleanup activities for the above sites are in place except Sites 7.

2. What effects have cleanup operations had on the surrounding community?

The cleanup operations are protecting public health.

3. Are you aware of any community concerns regarding the cleanup at March or its operation and administration? If so, please give details.

No

**THIRD FIVE-YEAR REVIEW INTERVIEW RECORD
FOR FORMER MARCH AIR FORCE BASE
AND MARCH AIR RESERVE BASE, CALIFORNIA**

Site Name: Former March AFB and March ARB, California		EPA ID No: CA4570024527	
Subject: Third Five-Year Review for Former March AFB and March ARB, California		Time:	Date:
Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center	
Individual Contacted:			
Name: Stephen Niou	Title: RPM	Organization: DTSC	
Telephone No: 714-484-5458 Fax No: 714-484-5437 E-Mail Address: stephen.niou@dtsc.ca.gov		Street Address: 5796 Corporate Av City, State, Zip: Cypress, CA 90630	
Summary of Conversation			
<p>4. Are you aware of any events, incidents, or activities at March or its properties such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details. Site 4 has repeating vandalism problems.</p> <p>5. Do you feel well informed about the March cleanup activities and progress? Yes.</p> <p>6. Do you have any comments, suggestions, or recommendations regarding the management or operation of the cleanup? The Air Force has put in its effort on the cleanup of the former March AFB.</p>			

**THIRD FIVE-YEAR REVIEW INTERVIEW RECORD
FOR FORMER MARCH AIR FORCE BASE
AND MARCH AIR RESERVE BASE, CALIFORNIA**

Site Name: Former March AFB and March ARB, California	EPA ID No: CA4570024527
--	--------------------------------

Subject: Third Five-Year Review for Former March AFB and March ARB, California	Time:	Date:
---	--------------	--------------

Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit:	<input type="checkbox"/> Incoming	<input type="checkbox"/> Outgoing
--	-----------------------------------	-----------------------------------

Contact Made By:

Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center
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Individual Contacted:

Name: Jerry Bingham	Title: Air Force BRAC RPM	Organization: AFCEC/CIBW
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Telephone No: 210 395-8240 Fax No: N/A E-Mail Address: jerry.bingham@us.af.mil	Street Address: 2261 Hughes Ave, Ste 155 City, State, Zip: JBSA Lackland, TX 78236-9853
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Summary of Conversation

Site 1, 4, 5, 6,7, 11,17,19, 29,31, 34, Operable Unit 1, L, 18, and 33

1. What is your overall impression of the environmental cleanup project at March Air Force Base?

Cleanup activities are effectively addressing Air Force environmental concerns.

2. What effects have cleanup operations had on the surrounding community?

No negative impacts on community.

3. Are you aware of any community concerns regarding the cleanup at March or its operation and administration? If so, please give details.

No.

**THIRD FIVE-YEAR REVIEW INTERVIEW RECORD
FOR FORMER MARCH AIR FORCE BASE
AND MARCH AIR RESERVE BASE, CALIFORNIA**

Site Name: Former March AFB and March ARB, California		EPA ID No: CA4570024527	
Subject: Third Five-Year Review for Former March AFB and March ARB, California		Time:	Date:
Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center	
Individual Contacted:			
Name: Jerry Bingham	Title: Air Force BRAC RPM	Organization: AFCEC/CIBW	
Telephone No: 210 395-8240		Street Address: 2261 Hughes Ave, Ste 155	
Fax No: N/A		City, State, Zip: JBSA Lackland, TX 78236-9853	
E-Mail Address: jerry.bingham@us.af.mil			
Summary of Conversation			
<p>4. Are you aware of any events, incidents, or activities at March or its properties such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.</p> <p>There has been some vandalism of environmental cleanup treatment systems including theft of electrical wire (copper). No recent incidents, however.</p>			
<p>5. Do you feel well informed about the March cleanup activities and progress?</p> <p>Yes</p>			
<p>6. Do you have any comments, suggestions, or recommendations regarding the management or operation of the cleanup?</p> <p>No comments.</p>			

**THIRD FIVE-YEAR REVIEW INTERVIEW RECORD
FOR FORMER MARCH AIR FORCE BASE
AND MARCH AIR RESERVE BASE, CALIFORNIA**

Site Name: Former March AFB and March ARB, California		EPA ID No: CA4570024527	
Subject: Third Five-Year Review for Former March AFB and March ARB, California		Time:	Date: 9 Oct 13
Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Location of Visit:			

Contact Made By:

Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center
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Individual Contacted:

Name: Eric Lehto	Title: RPM	Organization: 452 MSG/CEV (AFCEC)
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Telephone No: (951) 655-5060	Street Address: 610 Meyer Drive, Bldg 2403 City, State, Zip: March ARB, CA 92518
Fax No: NA	
E-Mail Address: eric.lehto@us.af.mil	

Summary of Conversation

Site 1, 4, 5, 6,7, 11,17,19, 29,31, 34, Operable Unit 1, L, 18, and 33

1. What is your overall impression of the environmental cleanup project at March Air Force Base?

The cleanup program is being actively worked.

2. What effects have cleanup operations had on the surrounding community?

Most of the current cleanup activities are being done inside March ARB, or on currently undeveloped land on the former March AFB (Site 7) or in fenced off landfills on the former March AFB. The current activities have little effect on the surrounding community.

3. Are you aware of any community concerns regarding the cleanup at March or its operation and administration? If so, please give details.

Concerns have been expressed about contamination at or near Site 7 affecting a nearby warehouse.

**THIRD FIVE-YEAR REVIEW INTERVIEW RECORD
FOR FORMER MARCH AIR FORCE BASE
AND MARCH AIR RESERVE BASE, CALIFORNIA**

Site Name: Former March AFB and March ARB, California		EPA ID No: CA4570024527	
Subject: Third Five-Year Review for Former March AFB and March ARB, California		Time:	Date: 9 Oct 13
Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center	
Individual Contacted:			
Name: Eric Lehto	Title: RPM	Organization: 452 MSG/CEV (AFCEC)	
Telephone No: (951) 655-5060 Fax No: NA E-Mail Address: eric.lehto@us.af.mil		Street Address: 610 Meyer Drive, Bldg 2403 City, State, Zip: March ARB, CA 92518	
Summary of Conversation			
<p>4. Are you aware of any events, incidents, or activities at March or its properties such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.</p> <p>No</p>			
<p>5. Do you feel well informed about the March cleanup activities and progress?</p> <p>Not Applicable.</p>			
<p>6. Do you have any comments, suggestions, or recommendations regarding the management or operation of the cleanup?</p> <p>No</p>			

THIRD FIVE-YEAR REVIEW INTERVIEW RECORD FOR FORMER MARCH AIR FORCE BASE AND MARCH AIR RESERVE BASE, CALIFORNIA

Site Name: Former March AFB and March ARB, California	EPA ID No: CA4570024527
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Subject: Third Five-Year Review for Former March AFB and March ARB, California	Time:	Date:
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Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit:	<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
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Contact Made By:

Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center
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Individual Contacted:

Name: <i>Gerald Budlong</i>	Title: <i>Citizen Co-chair</i>	Organization: <i>March RAB</i>
Telephone No: <i>951 924-3241</i>	Street Address: <i>24821 Metric Drive</i>	
Fax No:	City, State, Zip: <i>Moreno Valley, CA 92551</i>	
E-Mail Address:		

Summary of Conversation

Site 1, 4, 5, 6,7, 11,17,19, 29,31, 34, Operable Unit 1, L, 18, and 33

1. **What is your overall impression of the environmental cleanup project at March Air Force Base?** Program at March ARB is second to none. Also Air Force Program is superior to the similar clean ups at Army, Navy & Marine bases. Worst observed is DOE cleanup at the Nation's Nuclear weapons complex. Name the DOE facility, I can cite a night mare!
2. **What effects have cleanup operations had on the surrounding community?** Opened surplus lands to other DOD facilities. Economic impacts to surrounding civilian community. Future community expansion such as the planned medical facility sponsored by Joint Powers & Air Force (in last weeks newspaper)
3. **Are you aware of any community concerns regarding the cleanup at March or its operation and administration? If so, please give details.**
The development of off base Moreno Valley has resulted in the unengineered Heacock Drain no longer capable of containing flooding. Recent flood events have threatened Heacock Blvd, adjoining residential & industrial facilities and also threatened Air Force Bldgs.

**THIRD FIVE-YEAR REVIEW INTERVIEW RECORD
FOR FORMER MARCH AIR FORCE BASE
AND MARCH AIR RESERVE BASE, CALIFORNIA**

Site Name: Former March AFB and March ARB, California	EPA ID No: CA4570024527
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Subject: Third Five-Year Review for Former March AFB and March ARB, California	Time:	Date:
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Type: <input type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit:	<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
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Contact Made By:

Name: Jerry W. Bingham	Title: Environmental Program Manager	Organization: Air Force Civil Engineer Center
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Individual Contacted:

Name: <i>Gerald Budlong</i>	Title: <i>Citizen co-chair</i>	Organization: <i>March RAB</i>
Telephone No: <i>951 924-3241</i>	Street Address: <i>24821 Metric Drive</i>	
Fax No:	City, State, Zip: <i>Menlo Valley, CA 92557</i>	
E-Mail Address:		

Summary of Conversation

4. *Are you aware of any events, incidents, or activities at March or its properties such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.*
Issue of flooding of Heacock Drain
US Corps of Engineers has tabled any solutions due to funding constraints & California Drought.
5. *Do you feel well informed about the March cleanup activities and progress?*
Second to none. Nothing is hidden, 100 percent honest staff members; they should be commended for their excellent work.
6. *Do you have any comments, suggestions, or recommendations regarding the management or operation of the cleanup?*
Keep the good work up. Try to get the US COE to proceed with the Heacock Drain Engineering Program to eliminate future flooding to Air Force, civilian public works & private property buildings & facilities.

APPENDIX H
RESPONSES TO REGULATORY AGENCY COMMENTS

Santa Ana Regional Water Quality Control Board

May 16, 2014

Mr. Jerry W. Bingham
Environmental Program Manager, former March AFB
AFCEC/CIBW
2261 Hughes Avenue, Suite 155
JBSA Lackland, Texas 78236-9853
jerry.bingham@us.af.mil

DRAFT THIRD FIVE-YEAR REVIEW AT MARCH RESERVE BASE AND FORMER MARCH AIR FORCE BASE, CALIFORNIA
GEOTRACKER ID: DOD100277200, DOD100289900, DOD100277300, DOD100286700, DOD100286800, DOD100286900, DOD100319400, DOD100278700, DOD100319500, DOD100278900, DOD100319600, DOD100291400, DOD100291500, DOD100285300, DOD100321400, T0606500146

Dear Mr. Bingham:

We have completed our review of the above referenced report dated March 7, 2014, which we received on March 10, 2014. The document includes evaluations of the remedies implemented at thirteen Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sites (OU-1 Sites: 4, 5, 7, 29, 31, 34, OU1 Groundwater Plume; OU-2 Sites: 1, 6, 11, 17, 19; OU-4 Sites: L) and two petroleum Sites (18 and 33).

According to the report, the remedies at Sites 1, 4, 5, 6, 11, 17, 18, 19, 29, 31, 33, and L are determined to be still protective of human health and the environment. The evaluations of Sites 7 Fire Protection Training Area No. 2 (Site 7) and OU-1 Groundwater Plume (OU-1GW) indicate that there were issues remaining and the report presents recommendations for addressing those issues.

At Sites 7 and OU-1 GW the protectiveness of the remedies were determined to be short-termed. The remedy used at both Sites is institutional controls. The issues at Site 7 include rising groundwater, the incomplete assessment of vapor intrusion, and identification of an additional source of soil and groundwater contamination. The recommendations for Site 7 are to continue monitoring groundwater levels, and to finalize the Record of Decision amendment to address the vapor intrusion assessment and to select a remedy for soil and groundwater contamination. The issues at Site OU-1 GW are: 1) rising groundwater levels and, 2) the need

to complete site-specific vapor intrusion assessment. The recommendations are to continue monitoring of the groundwater levels and to complete a vapor intrusion assessment.

The determination for Site 34, former Pritchard Refueling System, is that the proposed remedy (excavation and off-site disposal) is expected to be protective when it is completed.

We do not have any comments on the report.

Should you have any questions regarding this letter, please contact me at (951) 782-4498, or by email at patricia.hannon@waterboards.ca.gov.

Sincerely,



Patricia A. Hannon, PG
Engineering Geologist
Land Disposal and DoD Section

cc: Mr. Eric Lehto, March ARB - Eric.Lehto@march.af.mil
Mr. Stephen Niou, DTSC, Office of Military Facilities - sniou@dtsc.ca.gov
Mr. John Lucey, US EPA, Region 9 - lucey.john@epa.gov
Mr. Calvin Cox, Cherokee Nation - calvin.cox@cn-bus.com
Mr. Jack Gundarlahalli, AECOM - jagadish.gundarlahalli@aecom.com

PAH: DoD_March_ARBnAFB_d3rd5yearRevRpt_response



Department of Toxic Substances Control



Matthew Rodriguez
Secretary for
Environmental Protection

Deborah O. Raphael, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

May 20, 2014

Mr. Jerry W. Bingham, P.E.
AFCEC/CZRB
2261 Hughes Ave Suite 155
JBSA Lackland TX 78236-9853

DRAFT THIRD FIVE-YEAR REVIEW REPORT, MARCH AIR RESERVE BASE (MARB)
AND FORMER MARCH AIR FORCE BASE (MAFB)

Dear Mr. Bingham:

The Department of Toxic Substances Control (DTSC) reviewed the above named report dated March 7, 2014. The 3rd Five-Year Review Report documents the review of 15 IRP sites of Operable Unit (OU) 1, 2, 3, and 4 located at the MARB and MAFB. The purpose of this review is to evaluate the protectiveness of human health and the environment at these 15 sites with the implemented remedies specified in their respective RODs and RAP.

The Air Force (AF) recommends that the ROD Amendment be finalized for the remediation of soil groundwater at Site 7. For the basewide groundwater contamination, the AF will complete the Focused Feasibility Study and the ROD and continue monitoring of the groundwater. For the other 13 sites, the AF states that they are protective of human health and the environment with the implemented remedies.

DTSC does not have comments to be forwarded to the AF and concurs with the findings in the report. If you have any questions regarding this letter, please contact me at (714) 484-5458.

Sincerely,

Stephen Niou, P.E.
Brownfields and Environmental Restoration Program



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

August 22, 2014

Mr. Jerry Bingham, P.E.
Program Manager/COR
AFCEC/CIBW
2261 Hughes Ave. Suite 155
Lackland AFB, TX 78236

Dear Mr. Bingham,

This letter transmits EPA's final comments on the Draft Third Five-Year Review Report, Performance-Based Remediation at, March Air Reserve Base and Former March Air Force Base, California, dated March 7, 2014. EPA previously submitted draft comments on June 17, 2014 and these final comments have three new comments:

1. Comment 1 was revised to address benzene contamination at Sites 18 and 33.
2. Comment 22 was added to address Perfluorinated Compounds.
3. Comment 23 was added to describe groundwater restrictions at Site 33.

If you have any questions please call me at (415) 972-3145.

Sincerely,

A handwritten signature in cursive script that reads "John Lucey".

John Lucey,
Remedial Project Manager
U.S. EPA

cc:	Stephen Niou, P.E,	DTSC
	Patricia Hannon	RWQCB
	Craig Mayo	AFCEC
	David Leeson	AFCEC
	Eric Lehto	AFCEC

**EPA Comments on the
Draft Third Five-Year Review Report, Performance-Based Remediation at,
March Air Reserve Base and Former March Air Force Base, California,
Dated: March 7, 2014**

1. Page ii, lines 7-8; The Executive Summary indicates that the Five Year Review Report (Report) will evaluate remedies at two petroleum sites (18 and 33) to ensure they remain protective of human health and the environment. The Report explains that Sites 18 and 33 have been removed from the CERCLA program and are currently being cleaned up under a RWQCB Order. The Report should further explain how CERCLA contamination (i.e. benzene) will be cleaned up. The Report should explain how benzene contamination in the groundwater will be cleaned up under CG49 and how potential VI exposure from benzene in the soil and vadose zone will be evaluated. The discussion of contamination at Sites 18 and 33 should describe the potential for vapor intrusion exposure from BETX. Please include the depth to groundwater in the site description. Mention that Site 18 has benzene in groundwater at 2600 ppb (2013) and Site 33 has benzene in groundwater at 9300 ppb (2013).

Response: Comment Noted. Based on the additional Comments provided by USEPA RPM, via email dated July 24, the two petroleum Sites 18 and 33 have been retained in the FYR document. The VOCs (including benzene) and the impact of the vapor intrusion pathway at these Sites will be evaluated as part of the Basewide groundwater addressed as CG049 in OU5 FFS and ROD (see Page iii, Paragraph 1; Section 4.4, Paragraph 2, Page 4-26; Section 6-1, Paragraph 4, Page 6-1). Please note that the RWQCB approved the recommendation of closure of the SVE portion of the remedy and that no additional action was necessary for the vadose soil at Site 33 (California RWQCB 2008). Thus only the groundwater medium will be evaluated for the vapor intrusion pathway.

Section 4.4.2.3 of the Draft FYR report submitted to the regulators in March 2014 discusses the 2,600 µg/L concentration of benzene and depth to groundwater, respectively at Site 18. Section 6.1.2.3 of the Draft FYR report submitted to the regulators in March 2014 discusses the 9,300 µg/L concentration of benzene and depth to groundwater, respectively at Site 33.

2. Page ii, lines 26-28; Please revise the last sentence on page ii as follows:

These conclusions include identification of remedy deficiencies, recommendations and follow-up actions, and a determination of whether the remedy is or is not *expected to be* protective of human health and the environment. *Each remedy is evaluated for short term and long term protectiveness.*

Response: The text has been revised as suggested (Page iv, Lines 1-2).

3. Page xv, 5YR Summary Form; The first page of the 5YR Summary Form has an item for "Review Period". The review period is the start time and end time for conducting the actual review and it should not indicate the entire five years period.

Typically the review period would start on the date of the site inspection and end when the report is expected to be finalized.

Response: The 5YR Summary Form has been revised as suggested.

4. Page xvi, 5YR Summary Form; The second page of the 5YR Summary Form lists issues and recommendations. The issue for Site 7 says the following:

Issue: Rising groundwater; VI assessment incomplete; and an additional source of soil and groundwater contamination has been identified.

Please revise the text as follows:

The issue at Site 7:

A new source of contamination was recently discovered at Site and the extent of contamination has not been fully characterized.

The recommendation for Site 7:

Conduct an investigation to fully characterize the contamination, conduct a FFS, and to select an appropriate remedy in the RODA.

Response: The issue and Recommendation for Site 7 have been revised as below:

Issue: A source of TCE contamination was recently discovered at the Site and the extent of TCE contamination has not been fully characterized by the previous FFS.

Recommendation: Conduct an additional investigation to fully characterize TCE soil contamination, amend previous FFS, and amend (as required) remedy selected in Draft Final RODA.

5. Page xvi, 5YR Summary Form; The second page of the 5YR Summary Form lists issues and recommendations. The issue for OU1 Groundwater Plume says the following:

Issue: Rising groundwater; no site-specific VI assessment has been completed.

A vapor intrusion assessment was previously performed as part of a risk assessment amendment and is included in the report entitled "Site 8 Supplemental RI, Site 8 Focused FS, and Site 36 Focused FS" and dated January 2009. The results of the vapor intrusion assessment showed that vapor intrusion and indoor air exposure were not an issue. Groundwater levels have continued to rise since the original vapor intrusion assessment was conducted and because the site conditions have changed the vapor intrusion risk assessment needs to be updated. Please revise the text to explain that the previous vapor intrusion risk assessment needs to be updated due to a change in site conditions.

Please revise the text as follows:

The issue at OU1 Groundwater Plume:

Site conditions have changed due to rising groundwater levels and the Basewide groundwater model and the vapor intrusion risk assessment needs to be updated.

The recommendation for OU1 Groundwater Plume:

Investigate the rising impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, update the vapor intrusion risk assessment, conduct a FFS and select a remedy in a ROD.

Response: Please note that the cited reference "*Site 8 Supplemental RI, Site 8 Focused FS, and Site 36 Focused FS*" and dated January 2009 discusses the results of the vapor intrusion performed as part of the OU2 plume. Therefore, the discussion of no site-specific VI assessment being completed for OU1 groundwater plume is valid.

The issue for OU1 Groundwater Plume has been revised as: "Site conditions have changed due to rising groundwater levels and the Basewide groundwater model needs to be updated, and the vapor intrusion risk assessment needs to be completed".

The recommendation for OU1 Groundwater Plume has been revised as: "Investigate the impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, and complete the vapor intrusion risk assessment as part of the Basewide groundwater OU5 FFS and select a remedy in the OU5 ROD".

6. Page xvii - xviii, 5YR Summary Form; OU1 should only have one protectiveness statement for the entire operable unit. Please use the following revised protectiveness statement for OU1:

The remedy for OU1 is short term protective for human health. For the remedy to be protective in the long term, the following actions need to be taken: Complete additional investigations at Site 7 to fully characterize the contamination, conduct a FFS and select a remedy in a ROD Amendment. Investigate the rising impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, update the vapor intrusion risk assessment, conduct a FFS and select a remedy in a ROD.

Response: The EPA definition of an OU is presented below. Based on this definition, an OU is akin to the March AFB IRP Site designations. Further as provided in the excerpt below from the OU1 ROD, OU's at March AFB are geographically based and include multiple IRP Sites (or OU's per the EPA definition below). Most of the IRP Sites have remedies specific to the IRP site, therefore the FYR evaluated the protectiveness of each of these remedies. As such, a single protectiveness determination cannot be made for the March AFB OU's with multiple sites (e.g. OU1). However, OU's with single response actions (e.g. OUs 2, 3 and 4), an OU specific protectiveness evaluation and statement can be made.

Operable Unit (OU) Definition – Term for each of a number of separate activities undertaken as part of a Superfund site cleanup. A typical operable unit would be removal of drums and tanks from the surface of a site. (Source: [EPA Terms of the Environment](#)).

At March AFB, aircraft maintenance, fuel storage operations, fire-training exercises, and base operations have generated a variety of hazardous wastes. Past waste disposal practices have resulted in contamination of soil and groundwater at several areas on base. March AFB was added to USEPA's National Priorities List of hazardous waste sites primarily due to the presence of TCE in groundwater beneath the base.

Three separate OUs were created in order to facilitate the environmental restoration of March AFB. OUs were created based on geographic location of sites, similarity of contaminants, and location of groundwater contaminant plumes (See [Figure 4-1](#)). Sites included in each OU are as follows:

- **OU1.** OU1 encompasses Sites 4, 5, 7, 9, 10, 13, 14, 15, 16, 18, 29, 31, 34, and 38. Sites 21 and 23 were initially included in OU1, but were transferred to OU2. OU1 also includes the off-base plume area along the Eastern boundary of March AFB.
- **OU2.** OU2 includes the remaining sites not in Operable Units 1 or 3. It includes all of the area known as West March, the Hawes site, and the sites in the northern portion of the Main Base west of Riverside Drive: Sites 1, 2, 3, 6, 8, 11, 12, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 35, 36, 37, 39, 40, 41, and 42.
- **OU3.** OU3 consists of IRP Site 33 (Panero Aircraft Fueling System). Soils and groundwater in OU3 have been contaminated by jet fuel.

OU1 was created based on geographic location of sites, similarity of contaminants (primarily TCE) and commingling of groundwater contaminant plumes migrating southeastward offbase. The scope of the operable unit includes groundwater containing TCE and other compounds over the majority of OU1 sites and offbase, groundwater containing primarily PCE at Site 4, groundwater containing jet fuel at Site I8, and sources of these contaminants in soils above the groundwater that have caused the plumes. The remedial investigation identified a possible source for TCE contamination at Site 31 although other sites within the OU1 groundwater plume area may be contributing TCE to groundwater. The scope of the operable unit also includes soils containing PAHs at Sites 4, 10, 15, 31, and 34. By cleaning up the groundwater and soil, the operable unit will address the principal threats posed by environmental contamination at the base.

Additional EPA Comments Dated Sept 22, 2014: EPA has reviewed the Air Force response to comments on the Draft Third Five-Year Review Report, Performance-Based Remediation at, March Air Reserve Base and Former March Air Force Base, California, dated March 7, 2014. Comment number six was not addressed adequately. The summary form should have one protectiveness statement for the entire Operable Unit rather than a separate statement for each individual site.

Subsequent Response: Comment Noted. The Summary form has been revised as below to include one protectiveness statement for the entire Operable Unit.

“The remedy at OU1 is short term protective of human health and the environment. For the remedy to be protective in the long-term, the following actions need to be taken:

- Conduct an additional investigation at Site 7 to fully characterize TCE soil contamination, amend previous FFS, and amend (as required) remedy selected in Draft Final RODA.
- Investigate the impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, complete the vapor intrusion risk assessment as part of the Basewide groundwater OU5 FFS, and select a remedy in the OU5 ROD.

- Complete the remedy implementation at Site 34, so that the Site will be protective in the long term.”

However, Section 4 in the main text lists a protectiveness statement separately for each of the Sites within OU1.

7. Page xix, 5YR Summary Form; OU2 should only have one protectiveness statement for the entire operable unit. Please use the following revised protectiveness statement for OU2:

The remedy for OU2 is protective for human health.

Response: Sites 1, 6, 11, 17, and 19 within OU2 have the same protectiveness determination as “protective”. Therefore, there will be one protectiveness statement for OU2 in the Executive Summary. Consistent with the EPA protectiveness determinations guidance (U.S EPA 2012), the protectiveness statement (Page xix) has been revised as: “The remedy at OU2 is protective of human health and the environment”. However, Section 5 in the main text lists a protectiveness statement separately for each of the Sites within OU2.

8. Page xx, 5YR Summary Form; OU3 should have one protectiveness statement for the entire operable unit. Please use the following revised protectiveness statement for OU3:

The remedy for OU3 is protective for human health.

Response: Consistent with the response to Comment No. 7, the protectiveness statement (Page xix) has been revised as: “The remedy at OU3 is protective of human health and the environment”.

9. Page xx, 5YR Summary Form; OU4 should have one protectiveness statement for the entire operable unit. Please use the following revised protectiveness statement for OU4:

The remedy for OU4 is protective for human health.

Response: Consistent with the response to Comment No. 7, the protectiveness statement (Page xix) has been revised as: “The remedy at OU4 is protective of human health and the environment”.

10. Page 3-4, line 19; The reference to Section 4.8.3.4 appears to be incorrect. Please revise the text.

Response: The reference has been corrected (see Section 3.8).

11. Page 4-22, lines 25-26; Please replace the text in second bullet with the following:

Site conditions have changed due to rising groundwater levels and the Basewide groundwater model and the vapor intrusion risk assessment needs to be updated.

Response: Consistent with the response to Comment 4, the text has been revised (see Section 4.3.4).

12. Page 4-23, line 10; Please replace the words "*currently protects*" with "*is protective in the short term*".

Response: The text has been revised as suggested (Section 4.3.7).

13. Page 4-44, lines 5-6; This text should clarify the distinction between surface soil and subsurface soil contamination.

Response: The text in Section 4.7 (Paragraph 2) has been clarified to indicate that the surface soil is approximately the top 2 feet bgs, and the subsurface soil is greater than 2 feet bgs.

14. Page 4-45, line 16; This text should clarify that the remedy description is specific to surface soil only.

Response: The text in Section 4.7.1 has been revised as suggested.

15. Page 4-48, lines 17-20; The protectiveness statement should state the following:

The remedy at Site 34 is short term protective for human health. For the remedy to be protective in the long term, the following actions need to be taken: Conduct the remedial action and excavate the surface soil contamination as described in the RD/RA Work Plan.

Response: Section 4.7.7 has been revised as:

“The remedy at Site 34 is short term protective of human health and the environment. Following remedy implementation, the Site will be protective in the long term”.

16. Page 4-55 [4-56] line 21 to 4-57 line 19; The opportunities for Optimization section references recommendations from the 2012 Capture Zone Analysis. This information is very specific and may not be current. Please revise this section to provide a more general description of opportunities for optimization. For example, investigate the rising impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, update the vapor intrusion risk assessment, conduct a FFS and select a remedy in a ROD.

Response: The Optimization section on Page 4-58 has been revised as: “The Air Force will continue to evaluate the impacts of rising groundwater in the OU1 Groundwater

Plume, will update the Basewide groundwater model, complete the vapor intrusion risk assessment as part of the Basewide groundwater OU5 FFS, and select a remedy in the OU5 ROD. Annual monitoring reports will continue to discuss changes in plume configuration, rising groundwater, vapor intrusion and data gaps in the monitoring program. Optimization of the monitoring program will be considered and instituted on an annual basis in consultation with regulatory partners”.

17. Page 4-57, line 18; There should be a new paragraph after the word “program”.

Response: The text (Page 4-58) after the Optimization section has been revised as suggested.

18. Page 4-58, lines 3-5; The OU1 Plume Issues should state the following:

Site conditions have changed due to rising groundwater levels and the Basewide groundwater model and the vapor intrusion risk assessment needs to be updated.

Response: Consistent with the response to Comment No. 5, the issues for OU1 Groundwater Plume in Section 4.8.4 have been revised as: “Site conditions have changed due to rising groundwater levels and the Basewide groundwater model needs to be updated, and the vapor intrusion risk assessment needs to be completed”.

19. Page 4-58, lines 11-18; The OU1 Plume Recommendations and Follow-up Actions should state the following:

Investigate the rising impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, update the vapor intrusion risk assessment, conduct a FFS and select a remedy in a ROD.

Response: Consistent with the response to Comment No. 5, the recommendation for OU1 Groundwater Plume in Section 4.8.6 has been revised as: “Investigate the impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, complete the vapor intrusion risk assessment as part of the Basewide groundwater OU5 FFS, and select a remedy in the OU5 ROD”.

20. Page 4-59, lines 1-11; The protectiveness statement should state the following:

The remedy at OU1 Groundwater Plume is short term protective for human health. For the remedy to be protective in the long term, the following actions need to be taken: Investigate the rising impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, update the vapor intrusion risk assessment, conduct a FFS and select a remedy in a ROD.

Response: The text in Section 4.8.7 has been revised as:

“The remedy at OU1 Groundwater Plume is short term protective of human health and the environment. For the remedy to be protective in the long-term, the following actions need to be taken: Investigate the impacts of rising groundwater in the OU1 Groundwater Plume, update the Basewide groundwater model, complete the vapor intrusion risk assessment as part of the Basewide groundwater OU5 FFS, and select a remedy in the OU5 ROD”. Please also see Response to Comment No. 5.

21. Technical Assessment Sections for all Sites; Sections 4, 5, 6 and 7 present site specific information. Each site has a section for "Technical Assessment" which includes the following generic sentence:

"The following conclusions support the determination that the actions performed at Site xxx are expected to be protective of human health and the environment."

Using language such as "expected to be protective" does not follow EPA guidance. Please replace this sentence with the following revised text:

"The following conclusions support the protectiveness statement for Site xxx."

Response: The text has been revised as suggested.

22. Perfluorinated Compounds; Perfluorinated Compounds (PFCs) should be identified as potential COCs at all of the fire training sites including 7, 15 and 29. The 5YR should mention the AFCEC/CIB sampling program described in your letter dated May 19, 2014.

Response: Perfluorinated Compounds (PFCs) release assessment at FT007 is ongoing and sampling is scheduled in February 2015 (see Section 4.3 for Site 7).

Site 15 was in operation between 1970 and 2000; it is included in a multiple base contract to conduct a records search, personnel interviews and site reconnaissance.

The potential for PFC release was based on Air Force use of AFFF for fire training activities between 1970 and 2000; Site 29 ceased operation before 1970. Therefore, no PFC work is planned for Site 29.

23. Site 33 Panero Aircraft Refueling Facility, pages 6-1 through 6-6; Groundwater use restrictions are mentioned in Section 6.1.1.1 and under the heading for Implementation of Institutional Controls on page 6-5. The text does not describe how the groundwater use restrictions are implemented under the LUC Plan. Please explain how the AF restricts groundwater use at Site 33.

Response: The text has been added in Section 6.1.3, Page 6-5 stating that: “LUC objectives have been implemented as part of the Draft Land Use Control Implementation Plan (AECOM 2012b)”.