



November 10, 2015

Mr. Arturo Burgos
Mr. Tom Ryan
City of Tucson, Environmental Services
4004 South Park Ave.
Building 1
Tucson, Arizona 85726

Re: Annual Closed Landfill Inspection – Silverbell Landfill

INTRODUCTION

On October 1, 2015, Engineering and Environmental Consultants, Inc. (EEC) performed the annual field inspection at the closed Silverbell Landfill. Silverbell Landfill was operated by the City of Tucson as a Municipal Solid Waste facility from 1966 through 1975.

The landfill consists of two separate cells, one north and one south. Each cell has a waste footprint of approximately 23 acres. The north cell is located within the fenced limits of the Silverbell Golf Course, which is owned and operated by the City of Tucson. The south cell is unfenced and undeveloped. A former law enforcement shooting range is located south of the golf course between the north and south cells. The soils of the range have been remediated and the structures have been removed.

Annual inspections are required at City of Tucson owned non-regulated closed landfills in accordance with the guidance document entitled "COT Closed Landfills Inspection and Maintenance Reporting and Procedures, March 2011". This guidance document was internally prepared by the City of Tucson Environmental Services Department (COT-ES).

Key elements of this inspection report are:

- A narrative summary of facility conditions including recommended corrective action(s) to be undertaken prior to the next scheduled inspection
- The Landfill Inspection Table used to document observed conditions (Attachment 1)
- An inspection photo log (Attachment 2)

INSPECTION SUMMARY

The annual field inspection of Silverbell Landfill is organized and conducted using the inspection report table included in the COT-ES inspection guidance document. A copy of the table filled out during this inspection is included with this report (Attachment 1). The table lists specific landfill items that must be inspected and provides space to comment on the

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conditions encountered during the inspection. The items inspected and the current conditions of these features at Silverbell Landfill are summarized as follows:

Perimeter Security Fence and Gates

The north cell of the landfill has been developed as a public golf course and is surrounded by fencing. Access control to the north cell is excellent. There is no perimeter fencing around any portion of the south cell (Photo 1).

Inspection Roads

The inspection roads on the landfill are generally in good condition.

Stormwater Controls

Due to subsidence, areas of ponding stormwater exist, particularly on the south cell.

Stormwater Retention Basins

No stormwater retention basins are located on the landfill.

Landfill Earthen Cap

Differential subsidence has resulted in ponding water, damage to monitoring wells, and exposed trash in some areas (Photos 1 through 6).

Landfill Gas Extraction System Wellfield

There is no landfill gas extraction system on the landfill.

Gas Extraction System Compound

There is no landfill gas extraction system on the landfill.

Landfill Gas Monitoring Wells

The landfill gas monitoring probe wells appear to be in good condition.

Groundwater Monitoring Wells

Numerous groundwater monitoring wells are damaged due to subsidence of the landfill (Photos 3, 4, 5, 6)

Remediation Equipment

There is no remediation system equipment on the landfill.

Illegal Dumping

Excessive dumping was observed in some areas of the landfill, most notably the south portion of the north cell (photo 7).

Neighboring Land Uses

There have been no changes in land use of neighboring properties since the last inspection.

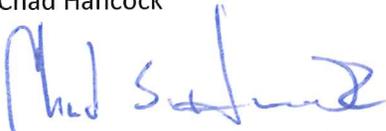
RECOMMENDED CORRECTIVE ACTIONS

- The 2014 annual inspection report indicated a major cleanup of the property was being scheduled. The project was to include soil cap augmentation to address subsidence and exposed trash, ponding of stormwater, wellhead and vault repairs, removal of debris, trimming of vegetation, installation of access controls for the south cell of the landfill, and final cleanup and closure of the shooting range. At the time of this inspection, only the removal of the structures from the shooting range and some limited vegetation clean-up had been completed.

No other corrective actions are recommended at this time.

Should you have any questions or require additional information, please contact me at 520-321-4625 (office) or 520-488-9205 (cell).

Sincerely,
Chad Hancock



Field Services Manager, Environmental Services

Attachments:

- 1: Landfill Inspection Table
- 2: Site Photographs



ATTACHMENT 1

LANDFILL INSPECTION TABLE

**CITY OF TUCSON ENVIRONMENTAL SERVICES
ANNUAL CLOSED LANDFILL INSPECTION REPORT
SILVERBELL LANDFILL**

INSPECTION ITEM	DISCREPANCY	CORRECTIVE ACTION
Perimeter Security Fence and Gate (holes, structure issues)	No perimeter fence, south cell	Installation of fence recommended in 2014 report
Inspection Roads (washouts, obstructions, potholes)	None	
Storm Water Controls (berms, let downs, spillways)	None	
Storm Water Retention Basins (washouts, excessive silt in, holding water)	N/A	
Landfill Earthen Cap (washouts, trash showing, debris and trash)	Subsidence and erosion with minor exposed trash observed, Groundwater wellheads damaged from settlement	Repair
Landfill Gas Extraction System Wellfield (piping, wells, vaults, washouts)	N/A	
Landfill Gas Extraction System Compound (fencing, blower equipment, flare, carbon canisters)	N/A	
Landfill Gas Monitoring Wells (including bollards, vaults, locks)	N/A	
Groundwater Monitoring Wells (including bollards, vaults, locks)	Many wellheads damaged due to landfill subsidence	repair
Remediation Equipment (compound fence, erosions, leaks)	N/A	
Illegal Dumping (including overgrown vegetation, homeless camps, vectors)	Misc. dumping observed in some areas, excessive dumping on south portion of north cell	Clean up
Neighboring Land Uses (changing adjacent land uses that will or currently are impacting the landfill site)	None	
INSPECTOR SIGNATURE 	DATE 10/1/15	

ATTACHMENT 2

SITE PHOTOGRAPHS



Photo 1: Unsecured perimeter of south cell, looking south, note erosion with exposed trash



Photo 2: Exposed trash on north slope of south cell



Photo 3: Damage to groundwater monitoring well, resulting from subsidence



Photo 4: Damage to groundwater monitoring well, resulting from subsidence



Photo 5: Subsidence at groundwater monitoring well



Photo 6: Subsidence at groundwater monitoring well, well casing forcing lid up



Photo 7: Dumped vegetation on south portion of north cell