



2015 Advanced Disposal Services Emerald Park Landfill Year End Compliance Officer Report and Audit Summary

TO: Advanced Disposal Services Emerald Park Standing Committee
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JSA Civil Environmental Engineers (JSA) has been acting as the Advanced Disposal Services Emerald Park Landfill Standing Committee's (Committee) Compliance Officer since 1999. JSA conducts weekly audits of the Advanced Disposal Services Emerald Park Landfill's (ADSEPL) operations and construction activities. The results of these audits are recorded and presented to the Committee, in addition to being posted on the World Wide Web (WWW) for the public on the City of Muskego's web site.

Throughout 2015, as in previous years, JSA has reported to the Committee; providing the following services

- Attendance to all Committee Meetings
- Auditing of the Operations and Construction of the ADSEPL Site
- Review and recording of all documents publicly released by ADSEPL, DNR, Host Communities, or public entities relating to the ADSEPL Site.
- Archiving of ADSEPL, DNR, and Host Communities' documents.

JSA performed 52 Operational audits of ADSEPL during 2015, no Construction audits were conducted in 2015. Audits are conducted on a weekly basis with one excused for the Christmas Holiday and ADSEPL staff was available for all but two audits, in this case an audit was done later in that week.

No audits were performed without the presence of ADSEPL staff. The site operated under Mike Hackney as General Manager and Brett Coogan as Gas Plant manager, later as Operational Manager (since September 2015) throughout 2015. In addition to the managers being present for audits, Scott Croft, Gas Well Technician; represented ADSEPL during audits and signed the Audit Forms.

Audits were performed during operational hours of the facility, no audits were conducted on the weekends. Audits are recorded on "Audit Forms", approved by the Committee and ADSEPL. The form is reviewed by both auditor and a ADSEPL representative at the end of each audit prior to signing by both parties. Audit observations are supported by photographs taken in conjunction with the audit. When a compliance issue is observed, it is recorded as an "Action Item" and included on a tallying list of action items for the year. In addition to the audit form, audit photographs, and action item list; a summary of the audit observations is created and included in the final deliverable document.

Weather Conditions

The weather conditions during the audit were recorded visually and from the weather stations near the area of the landfill. All of the weather readings were done with stations monitored by the National Oceanic and Atmospheric Administration (NOAA). ADSEPL has installed and is operating a weather station at the site, data was not used from it for Audits.

Poor weather conditions have an impact on all landfills, ADSEPL is no exception; daily cover is a mix of auto-fluff, foundry sands, construction/demolition wastes (C&D), site soils, and landfill direct soil. Extended poor weather conditions can have an affect on daily and intermediate cover. Dry weather conversely, can have an impact on gas collection and destruction.

Though no odor complaints were made, weather conditions aid in the identification of potential odor sources, trail paths, and travel times.

Equipment used in Landfill Operation

ADSEPL had one compactor and two bulldozers in operation on the working face of the landfill for the majority of audits. The facility acquired a new compactor in 2013, which is the predominant equipment used, the site no longer has a backup compactor but will acquire one in 2016. The site operated throughout 2015 with appropriate equipment as defined by the Plan of

Operations, a compactor was used for compaction and a bulldozer to place daily cover. During periods of high soil volumes across the scale, or recovering soil previously tipped in Phases 2 & 3 ADSEPL implemented more dozers and had as many as three operating at one time. Mike Hackney is an equipment operator and operated equipment during 2015.

ADSEPL also made use of excavators and haul trucks (articulated dump truck) to excavate future expansion space and stock piles to provide intermediate cover to the active area. One water truck was available and used during dry dusty conditions. Another water truck is dedicated to leachate hauling, leachate from the Future Parkland Facility was collected in the dedicated truck and used in recirculation at ADSEPL.

Equipment does require maintenance and at times does fail, there were no recorded incidents of the site not having suitable equipment active to conduct operational activities. The facility has not employed a staff mechanic since 2012, all equipment repairs are done by third party or minor work by capable staff.

In cold weather, frozen conditions the site excavator is used to dig out frozen loads. In previous years the backhoe has been dedicated to this purpose.

The ADSEPL facility does not possess a street sweeper, however they have maintained a contract with a sweeping company to sweep US 45, and site roads as ADSEPL requires. The sweeping events do not occur every week, however there were no Action Items pertaining to road conditions; though seven occurrences of tracking or road debris were recorded; six of which were recorded pertaining to the site entrance only. ADSEPL addresses street sweeping as far North as the intersection of US 45 and Loomis Road.

Working Face

ADSEPL maintains a working face that is approximately one half (½) acre in size or smaller. Waste volumes dropped off in 2008 and the site volumes have fluctuated since, the volume balance of ~1,500 tons per day (TPD) supports the working face size. Weather conditions impact the working face size as well; during inclement weather the working face would be smaller. ADSEPL operated working faces in Phases 7 and 7B for the receipt of MSW, special wastes, liquid loads, and C & D wastes; along with Phases 2, 3, 5 & 6 for the tipping of soils. A large volume of landfill direct soil was tipped in Phase 5 & 6 to bring the phases to grade.

The soils, bio and landfill direct, working faces have been located on top of Phases 2 & 3 for more than a three years. The bio soil pile is in active remediation for future use on the site. Special wastes (Asbestos) and liquid loads are tipped in designated pits, within the MSW working face until filled and a new pit is established.

Cover Material

The MSW working faces require the placement of daily cover. The facility employs soil and/or permitted alternative daily covers(ADC). The ADCs used at Emerald Park are auto-fluff, poly-fluff, compost, processed bio-soil, landfill direct soil, foundry sand, and tarps. Since late 2013 auto-fluff suppliers have directed their product to out of state processors, on rare occasions auto-fluff is still tipped at Emerald Park.

The previous operations manager employed the use of select C&D materials as the first “layer” of daily cover, providing a structure to hold and interlock with soils and/or ADC in the second “layer” of daily cover. This practice appears to be maintained in ADSEPL's operational practices through 2015.

The site must also maintain Intermediate cover over areas that are not in use or are not going to be in use. Intermediate cover is an additional 12” upon the previously placed daily cover and there is no alternative intermediate cover. Intermediate cover requirements were all met and the primary focus location for intermediate cover was the West slope of Phase 7/7B above the temporary sedimentation pond (temp sed. pond)

Leachate Management

ADSEPL has the ability to recirculate leachate through a pipe system, buried in the waste, along with disposing of excess volumes through a MMSD force main. Relative leachate volumes and repairs to the leachate system were recorded through out 2015 along with the placement of new recirculation lines. The recirculation of leachate during 2015 was minimal, with the exception of the leachate collected from Future Parkland's leachate tank and tipped in the liquid waste trench in the active area of ADSEPL.

The site's leachate disposal volume is mechanically restricted to no more than 70,000 gallons per day to MMSD.

Gas Monitoring & Management System

ADSEPL operates a flare to destruct landfill gas (LFG) collected at the site. In 2012, ADSEPL completed the construction of the “Gas Building”. The new facility at the site prepares the landfill gas(LFG) for distribution to MMSD via a pipeline. To make the gas usable at the target end of the pipeline, it must be cleaned, dried, and compressed. The facility removes the impurities from the LFG so that the pipeline is only carrying Methane. The construction of the facility included the relocation of the flare for destruction of the gas when the pipeline is not in use and an enclosed flare that is used to destruct contaminants.

During the majority of audits, JSA recorded that the facility was not delivering gas to MMSD or at a reduced volume. The volume of gas received has been controlled and limited by MMSD restricting receipt of LFG.

There were no action items for Gas Monitoring & Management

Surface Water Management

ADSEPL maintains three drainage basins and one temporary sedimentation basin¹ along with several thousand feet of conveyances. Emerald Park has maintained the conveyances and basins on an as needed basis. The ditches at the toe of the south slope of Phases 5 & 6 were cleaned several times during 2015 along with the erosion being repaired on the slopes. Basins 1 & 3 were cleaned in previous years, Basin 2 was partially cleaned in 2015. The Basin all had suitable volume throughout the year.

The temp sed basin is drained by a six inch pump which discharges to Basin 1. In past years the pumping of the temp sed basin was impacted by pump operation issues. In 2015 the draining of the temp sed basin was consistent with response to storm events and there were no recorded pump operations.

JSA records erosion conditions under stormwater management. As the site has under gone partial closure projects, the erosion occurrences have been reduced. Closure area three still has minor erosion issues that have been addressed. The uncapped portions of Phase 5 South slope and Phase 6 South slope do suffer from erosion after storm events, these are repaired when sloped conditions and weather allow.

¹ Excavation along South and West slope of Phase 7

ADSEPL has not met the requirements of the City of Muskego Chapter 35 Stormwater Ordinance.

There were no action items for Surface Water Management

Odor Control

Auditors record the presence of off site and on site odors; in 2015 there were three occurrences of off site odors and thirty-two on site odors. There was one Odor Complaint recorded in 2015. The offsite odors were garbage related and not gas. The majority of on site odors were the detection of LFG odors at the edge of Phase 7 and garbage odors about the active area. On two occasions the on site recorded odors were the “scent additive” from the gas plant. The odor from the bio-soil piles was not evident in 2015. Committee Chair Mark Slocomb issued a odor complaint on 1/19/2015. The odor appears to be from compost activities.

ADSEPL did not implement any odor control activities or substances in 2015 other than placement of cover. ADSEPL does possess products for odor neutralizing

There were no action items for Odor Control.

Special Waste Handling

Waste profiles, sampling, and protocols are done off site from the ADSEPL Facility. This item remains on the audit should a new waste be accepted.

There were no action items for Special Waste Handling

Litter Control

ADSEPL implements two types of litter fences about the active area. Stationary fences are installed at the top of slopes and at the base of slopes and where possible prior to the boundary or perimeter fences. Mobil fences are moved by bulldozer to intercept litter blown by the wind. ADSEPL also hires litter pickers to gather litter both on and off site.

The mobile fencing was used in the active area throughout 2015, several new sections were added in 2014. Off site litter is recorded, if present, during an audit. If the litter is present in the subsequent audit an Action Item is issued. Litter was recorded off site on two occasions; the site employs two pickers daily and on Friday one picker operates the Residential Drop-off. Additional pickers are hired when needed.

No Action Items were recorded in regard to litter

Vehicle Impacts

ADSEPL sweeps US 45 when required by road conditions. When sweeping is done, ADSEPL sweeps as far North as the intersection of US 45 and Loomis Road to address concerns by the residents along that stretch and motorists. ADSEPL also enforces sweeping to be done by the second party excavators during back hauls and clay removals.

There were no action items relating to Vehicle Impacts

Inspection of incoming waste

ADSEPL uses a camera, visible to the scale operator in addition to recording manifests, to monitor both truck activities and contents. Each equipment operator on the working face is able to observe the waste components when tipped from the haul vehicles. ADSEPL does not make use of spotters nor does it have working faces that are not monitored by ADSEPL staff.

All Wisconsin permitted landfills are required to perform a random load inspection for every 5,000 tons of waste received; the Host Agreement requires a minimum of two Random Load Inspections per week. The random loads inspections were routinely performed once per week throughout 2015, a minimum of two was not always conducted.

No Action Items were recorded regarding Inspection of incoming waste.

Rejected Loads

No rejected loads were recorded in 2015

Contractors Audit

In 2015 ADSEPL engaged the services of Environmental Sampling Corp. (ESC), Mueller Excavating, Terra, and SweepAll to aid in the construction and maintenance at the site. The activities of all contractors were recorded during audits.

Landfill Expansion Phase 7 & 7B

Construction of Phase 7 & 7B was not completed in 2011, however the DNR did provide approval to fill the available completed area. ADSEPL has two sides of the Phase to complete along with the construction of additional stormwater structures and conveyances. This construction was completed in 2013.

The construction of 2013 extended the foot print of the base of Phase 7. The new constructed liner connects to the liner of Phase 7 to the North and Phase 6 to the East. A larger temporary sedimentation basin was constructed, but no permanent stormwater system structures were constructed or implemented. Additionally, the berm along the West edge of the shooting range was repaired in the end of 2014.

The liner footprint will be completed when Phase 8 is constructed. The construction of Phase 8 will include the completion of the West edge and slope of Phase 7 & 7B.

Action Items

There were no Action Items recorded in 2015.

ADSEPL has not completed a Chapter 35 Stormwater Permit application or the required Stormwater Maintenance

Audits in 2016

JSA will continue to conduct audits in 2016