



July 11, 2016

Cory Dilmore, PE
Environmental Administrator
Florida Department of Environmental Protection
Permitting and Compliance Assistance Program
2600 Blair Stone Road, MS 4565
Tallahassee, Florida 32399-2400

RE: Hardee County Landfill
Estimate of Remaining Life and Capacity Report
FDEP Permit No.: 38414-016-SO/01
Jones Edmunds Project No.: 07809-002-01

Dear Mr. Dilmore,

On behalf of the Hardee County Department of Solid Waste Management, Jones Edmunds & Associates, Inc., is pleased to submit the enclosed Estimate of Remaining Life and Capacity Report for the Hardee County Class I Landfill. This report is submitted in accordance with Specific Condition C.14.b of the above-referenced permit and the recordkeeping requirements of Rule 62-701.500(13)(c), FAC. FDEP granted an extension of the report deadline from April 15 to July 14, 2016.

BACKGROUND

The Hardee County Landfill is owned and operated by the Hardee County Board of County Commissioners. The facility, at 685 Airport Road, Wauchula, Florida, has operated since 1981 and accepts commercial and residential waste generated within the County. The facility is approximately 116 acres, which includes the landfill, leachate storage tanks, a hazardous waste collection area, yard trash processing area, and scrap metal and white good storage areas.

The Class I Landfill is approximately 24.8 acres and consists of a closed Phase I area of 12.3 acres, an active Phase II Section I area of 6.3 acres, and an active Phase II Section II area of 6.2 acres. The Phase I area was closed in January 2013. Phase II Section II construction was completed in August 2015.

ESTIMATE OF REMAINING LIFE

Jones Edmunds estimated the remaining life of the Hardee County Landfill based on historical tonnage data provided by the County, the remaining volume in Phase II Section I, the design volume of Phase II Section II, and a topographic survey of the landfill performed by Pickett and Associates Inc., on March 22, 2013.

The historical waste tonnage data shows that the landfill has received an average of 17,860 tons per year (TPY) (58 tons per day (TPD)) of waste since 1996. In 2005 the waste rate was at its peak at 21,841 TPY (71 TPD). Between 2005 and 2012 the waste rates decreased on average 1.5% per year (straight line average). Since 2012 the waste rate has been steadily increasing. The average per capita waste rate over the last 3 years is 0.63 ton per capita.

The incoming waste rate was taken from historical waste tonnage data provided by the County and projected using population growth data from the Bureau of Economic and Business Research (BEBR). The population growth rate for Hardee County through 2045 is projected to be minimal at a rate of about 0.1% annually. The historical tonnage data show that from 1996 through 2015 the tonnage has increased overall by about 1.4% (straight line average). Based on Florida's aggressive recycling goals and efforts, the projected waste tonnages were calculated based on population projections.

The remaining disposal capacity of the landfill was taken from the last aerial survey performed March 22, 2013, and the design volume of the new cell (Phase II Section II). The annual volume consumed (cubic yards per year) was calculated using an apparent density of 1,173 pounds per cubic yard (lb/CY) based on the 2013 survey. This apparent density matches the typical Class I apparent density of 1,200 lb/CY.

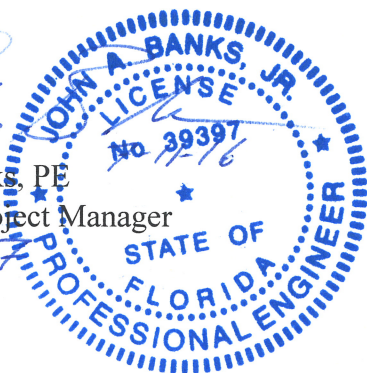
The estimated remaining life of the Hardee County Landfill is approximately 26 years from the end of 2016, with an estimated closure date of January 2043.

If you have any questions concerning this information, please contact me at (941) 358-1440 or jbanks@jonesedmunds.com.

Sincerely,


John Banks, PE
Senior Project Manager

Enclosures

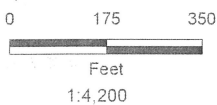
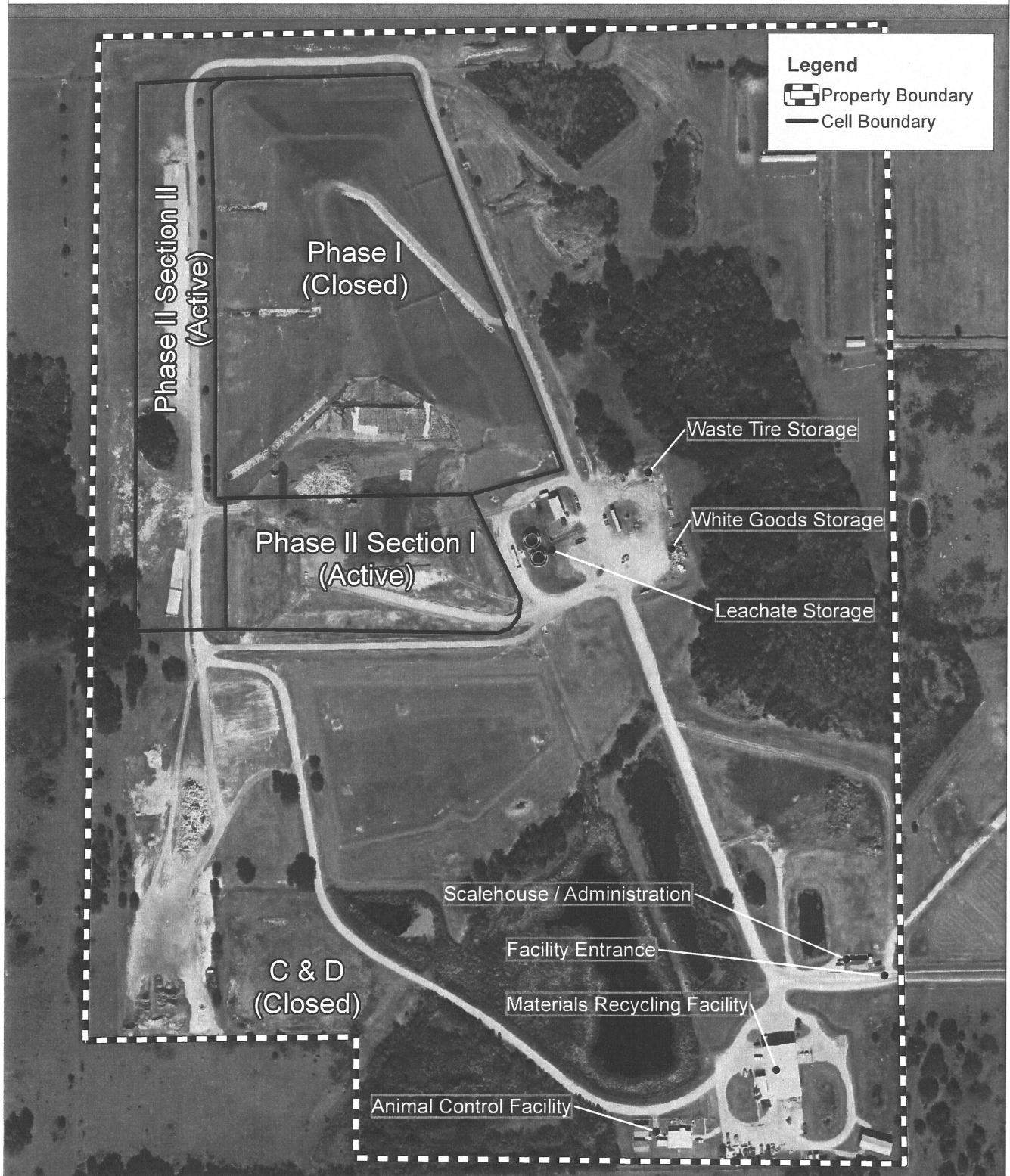


xc: G.D. "Willie" Nabong, Hardee County Public Works Director
Steven Tafuni, FDEP Southwest District, Compliance Assurance Program

Figure 1

Site Layout

Hardee County Landfill, Hardee County FL



Note: Boundaries shown are for informational purposes only.

Imagery: FDOT 2014

JONES EDMUNDS



PROJECT NUMBER:	07809-002-01		
PROJECT NAME:	Hardee County Landfill		
SUBJECT:	Annual Capacity and Lifespan Analysis		
BY:	C. Sawyer	DATE:	6/17/2016
CHECKED BY:	J. Toms	DATE:	6/21/2016

Annual Capacity and Lifespan Analysis

Objective: Estimate the remaining life of the Hardee County Class I Landfill.
[Ref: FDEP Solid Waste Operations Permit 38414-016-SO/01, Specific Condition C.14.b.]

Approach: Estimate the remaining life of the landfill based on:

- design capacity
- historical and projected waste tonnage rates
- volume consumption

Data: Hardee County Landfill (24.8 acres total)

Phase I	12.3 acres	closed
Phase II Section I	6.3 acres	active
Phase II Section II	6.2 acres	active
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	24.8 acres	

Phase II Section I
Remaining volume as of 03/22/2013 = 52,452 CY (Reference 1)

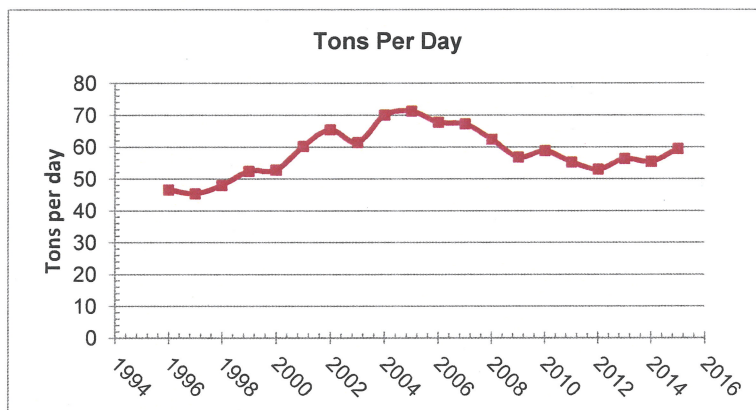
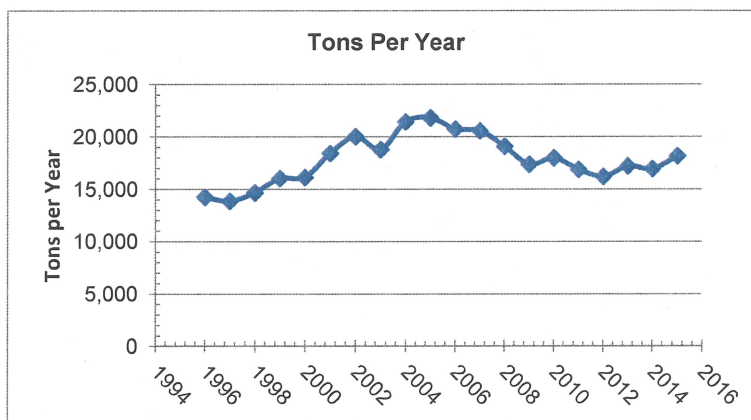
Phase II Section II
Phase II Section II construction certification issued 08/05/2015.
Design Volume = 884,021 CY (Reference 2)



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CLASS I TONNAGE DATA

Year	Class I Tons/Year ¹ [TPY]	Class I Ton/Day ² [TPD]
1996	14,281	47
1997	13,896	45
1998	14,699	48
1999	16,061	52
2000	16,165	53
2001	18,444	60
2002	20,051	66
2003	18,813	61
2004	21,469	70
2005	21,841	71
2006	20,767	68
2007	20,605	67
2008	19,111	62
2009	17,408	57
2010	18,013	59
2011	16,919	55
2012	16,237	53
2013	17,243	56
2014	16,981	55
2015	18,200	59
2016 ³	4,853	65
Average (1996-2015)	17,860	58
Average (2006 - 2015)	18,148	59



2006 waste rate starts trending downward.

- (1) Waste tonnage disposed of in Class I Landfill per Hardee County Waste Quantity Reports.
- (2) Based on 306 operating days per year.
- (3) Tonnage through March 2016.
- (4) Tonnage change since 1996 = 1.4%.



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POPULATION AND PER CAPITA WASTE GENERATION

Bureau of Economic and Business Research (BEBR)
Population Projections = Medium growth rate

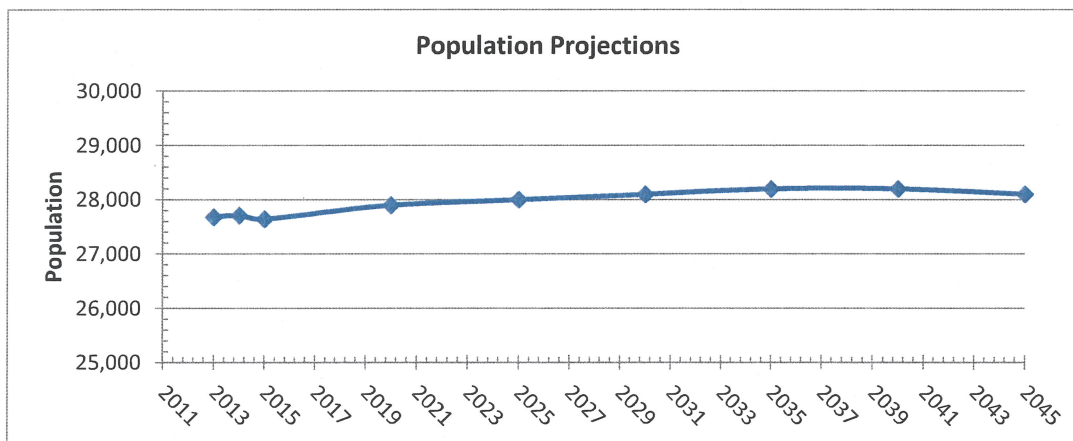
Year	Population	% change (over 5 years)	% change (per year)
2015	27,645		
2020	27,900	0.9%	0.2%
2025	28,000	0.4%	0.1%
2030	28,100	0.4%	0.1%
2035	28,200	0.4%	0.1%
2040	28,200	0.0%	0.0%
2045	28,100	-0.4%	-0.1%

(Reference 3)

Year	Population	Tonnage Per Capita
2013	27,682	0.62
2014	27,712	0.61
2015	27,645	0.66

(Reference 4)

(Reference 5)





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ESTIMATE OF REMAINING LIFE

Phase II Section I
 Remaining volume as of 3/22/13 = 52,452 CY *Reference 1*
 Phase II Section II
 Design Volume = 884,021 CY *Reference 1*
 Apparent Density = 0.59 tons/CY *Reference 1*
 1,173 lbs/CY
 Operating Days per year = 306 days

Year	Population	Projected Growth Rate	Incoming Waste Rate			Remaining Volume (Phase II Section I)	Remaining Volume (Phase II Section II)
		[%/YR]	[TPY]	[TPD]	[CY/YR]	[CY]	[CY]
04/03/2012 - 03/22/2013 (1)	27,682		16,250	54.2	27,698	52,452	
03/22/2013 - 12/31/2013 (2)	27,682		13,054	54.2	22,196	30,256	
2014	27,712		16,981	55.5	28,953	1,303	884,021
2015	27,645		18,200	59.5	31,032	-29,728	854,293
2016	27,696	0.2%	18,234	59.6	31,089		823,204
2017	27,747	0.2%	18,267	59.7	31,146		792,058
2018	27,798	0.2%	18,301	59.8	31,203		760,855
2019	27,849	0.2%	18,334	59.9	31,261		729,594
2020	27,900	0.2%	18,368	60.0	31,318		698,276
2021	27,920	0.1%	18,381	60.1	31,340		666,936
2022	27,940	0.1%	18,394	60.1	31,363		635,573
2023	27,960	0.1%	18,407	60.2	31,385		604,188
2024	27,980	0.1%	18,421	60.2	31,408		572,781
2025	28,000	0.1%	18,434	60.2	31,430		541,351
2026	28,020	0.1%	18,447	60.3	31,452		509,898
2027	28,040	0.1%	18,460	60.3	31,475		478,423
2028	28,060	0.1%	18,473	60.4	31,497		446,926
2029	28,080	0.1%	18,486	60.4	31,520		415,406
2030	28,100	0.1%	18,500	60.5	31,542		383,864
2031	28,120	0.1%	18,513	60.5	31,565		352,299
2032	28,140	0.1%	18,526	60.5	31,587		320,712
2033	28,160	0.1%	18,539	60.6	31,610		289,102
2034	28,180	0.1%	18,552	60.6	31,632		257,470
2035	28,200	0.1%	18,565	60.7	31,655		225,815
2036	28,200	0.0%	18,565	60.7	31,655		194,161
2037	28,200	0.0%	18,565	60.7	31,655		162,506
2038	28,200	0.0%	18,565	60.7	31,655		130,852
2039	28,200	0.0%	18,565	60.7	31,655		99,197
2040	28,200	0.0%	18,565	60.7	31,655		67,543
2041	28,180	0.0%	18,565	60.7	31,655		35,888
2042	28,160	0.0%	18,565	60.7	31,655		4,234
2043	28,140	0.0%	18,565	60.7	31,655		-27,421
Anticipated Closure (Rounded up to the nearest month)							Jan-43
Total Lifespan from 2016 (in years)							26.1

- (1) Actual tonnage data. Airspace consumed (CY) between this period based on 6/28/13 SCS report.
 (2) Tons per year between this period projected based on 241 working days.



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References:

1. Estimate of Remaining Capacity and Life of Site (Table 2), by SCS Engineers, dated June 28, 2013.
2. Hardee County Landfill Operation Permit Renewal Application (Section E.4.c), by SCS Engineers, dated March 12, 2013.
3. *Projections of Florida Population by County, 2020-2045, with Estimates for 2015* by Bureau of Economic and Business Research (BEBR), Volume 49, Bulletin 174, January 2016.
4. *Florida Estimates of Population 2013*, by Bureau of Economic and Business Research (BEBR), 2013.
5. *Florida Estimates of Population 2014*, by Bureau of Economic and Business Research (BEBR), 2014.