

**GEC**

**GENESIS ENVIRONMENTAL CONSULTING, INC.**

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11-5-96

November 1, 1996

Mr. Mike Hood, P.E.  
Solid Waste Division  
Arkansas Department of Pollution Control and Ecology  
8001 National Drive, P.O. Box 8913  
Little Rock, AR 72219-8913

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**SUBJECT: Cost of Closure and Post Closure Care  
Sunray Services, Inc., Tontitown, Arkansas**

Dear Mr. Hood:

Genesis Environmental Consulting, Inc. (GEC) on behalf of Sunray Services, Inc. (Sunray), have completed preparation of the itemized estimates for the cost of closure and post closure care of the Class I Landfills and Class IV Landfill at the Tontitown, Arkansas site. Enclosed are a summary of the estimated closure and post closure care costs and individual tables that provide detailed information for each landfill. The cost estimates have been prepared in accordance with guidance provided by the ADPC&E on August 8, 1996.

If after receipt of this information you have any questions, please call at your convenience.

Sincerely,  
GENESIS ENVIRONMENTAL CONSULTING, INC.

  
Ken Bown, PE

cc: Kevin Hodges  
enclosure: Cost Tables 1- 6  
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**CLOSURE AND POST CLOSURE COST ESTIMATES  
SUNRAY SERVICES, INC. TONTITOWN, ARKANSAS FACILITY  
NOVEMBER 1, 1996**

The following closure and post closure care costs for the Sunray Services, Inc. (Sunray) Tontitown, Arkansas facility have been prepared in accordance with Act 510 of the 1995 General Assembly of the State of Arkansas. The cost estimates are intended to provide the basis for establishing financial assurance requirements under Subtitle D and Act 510. The cost estimates were prepared in accordance with the "Guidelines for Preparing Closure and Post-Closure Plans and Cost Estimates (ADPC&E, August 8, 1996). As required by the ADPC&E, these estimates are to be updated annually to reflect changes in design, regulations, and economic factors which may directly effect the cost of closure and post closure care.

The Tontitown facility has two Class I Landfills and one Class IV Landfill that will eventually be closed and will require post closure care. Each of the Landfills are identified below with there estimated cost for closure and post closure care. The attached tables provide detailed cost estimates for each landfill for closure and post closure care.

Landfill	Closure Cost	Post Closure Cost
Site 3 Class I Landfill (Table 1 and Table 2)	\$280,055	30 year cost \$937,272
Site 4 Class I Landfill (Table 3 and Table 4)	\$327,760	30 year \$954,736
Site 4 Class IV Landfill (Table 5 and Table 6)	\$139,910	2 year \$22,962
<b>TOTAL</b>	<b>\$747,725</b>	<b>\$1,914,970</b>

1,217,327

1,445,368

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**TABLE 1 - SITE 3 CLASS I LANDFILL  
CLOSURE COST ESTIMATE  
TONTITOWN, ARKANSAS  
1-Nov-96**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Surface Preparation	24.20	AC	\$500	\$12,100
Gas Venting Layer (Optional) *	N/A	N/A	N/A	N/A
Clay Cover	58,470	CY	\$2.50	\$146,175
Synthetic Liner*	N/A	N/A	N/A	N/A
Gas Vents *	N/A	N/A	N/A	N/A
Drainage Layer (Optional)	N/A	N/A	N/A	N/A
Biotic Barrier Layer (Optional) **	N/A	N/A	N/A	N/A
Filter Layer (Optional) ***	N/A	N/A	N/A	N/A
Vegetation/Soil Top Layer	19,490	CY	\$2	\$38,980
Seeding/Fertilizing/Mulching	24.20	AC	\$1,500	\$36,300
Erosion Control	1	LS	\$2,500	\$2,500
Quality Assurance/Quality Control	1	LS	\$35,000	\$35,000
Surveying	1	LS	\$2,500	\$2,500
Certification	1	LS	\$2,500	\$2,500
Let Down Structures	1	LS	\$2,500	\$2,500
Side Slope Berms	1	LS	\$1,500	\$1,500
			<b>TOTAL</b>	<b>\$280,055</b>

Note: All costs are in 1996 Dollars;

\* Gas vent system and synthetic liner to be addressed in future permit modification

\*\* Biotic Barrier Layer is not included in the final cover system design

\*\*\* The costs associated with the filter layer are included with the drainage layer

**TABLE 2 - SITE 3 CLASS I LANDFILL  
POST CLOSURE CARE COST ESTIMATE  
TONTITOWN, ARKANSAS**

1-Nov-96

**MISC. REPAIRS (SUBSIDENCE, SETTLING, EROSION, ROADS, ETC.)**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Labor (3 people x 8 hr/day x 4 days/yr)	96	Hours	\$15.00	\$1,440.00
Equipment- Dozer	16	Hours	\$98.00	\$1,568.00
Dump Truck	16	Hours	\$56.00	\$896.00
Loader	16	Hours	\$63.00	\$1,008.00
Misc. Materials and Services*	1	LS	\$3,500.00	\$3,500.00
<b>TOTAL MISC. REPAIRS</b>				<b>\$8,412.00</b>

**MAINTAIN/OPERATE LEACHATE COLLECTION SYSTEM**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
<b>Capital Cost of System (\$18,000; Estimated Life = 10 years)</b>				
<b>Annual Maintenance and Repair (1/10 of Capital Cost)</b>				<b>\$1,800.00</b>
Leachate Generation/Yr. (Gallons)**	22,080	\$/gal	\$0.01	\$220.80
Annual Transportation Costs	22,080	\$/gal	\$0.07	\$1,545.60
Annual Treatment Costs	22,080	\$/gal	\$0.05	\$1,104.00
<b>TOTAL LEACHATE SYSTEM O&amp;M</b>				<b>\$4,670.40</b>

\* Includes NPDES Sampling and Reporting;

\*\* Amount based on 2.5 gal per acre per day

**TABLE 2 (Continued) - SITE 3 CLASS I LANDFILL  
POST CLOSURE CARE COST ESTIMATE  
TONTITOWN, ARKANSAS  
1-Nov-96**

**MAINTAIN/OPERATE GROUNDWATER MONITORING SYSTEM**

ITEM	# of Wells	UNIT	Cost/Well	AMOUNT
<b>Capital Cost (5 wells at \$3,660 = \$18,300; Assume 30 year life) *</b>				
<b>Annual Maintenance and Repair (1/30 of Capital Cost)</b>				<b>\$610.00</b>
<b>Annual Sampling Costs (2/year)</b>	<b>5</b>	<b>Wells</b>	<b>\$500.00</b>	<b>\$2,500.00</b>
<b>Annual Laboratory Analysis (2/year)</b>	<b>5</b>	<b>Wells</b>	<b>\$1,200.00</b>	<b>\$6,000.00</b>
<b>Statistical Analysis (2/year)</b>	<b>5</b>	<b>Wells</b>	<b>\$1,250.00</b>	<b>\$6,250.00</b>
<b>TOTAL ANNUAL GW MONITORING SYSTEM COSTS</b>				<b>\$15,360.00</b>

**MAINTAIN/OPERATE GAS MONITORING SYSTEM**

ITEM	# of Locations	UNIT	Cost/Probe	AMOUNT
<b>Capital Cost of System (6 locations at \$2,000 ea = \$12,000; Assume 30 year life) **</b>				
<b>Annual Maintenance and Repair (1/30 of Capital Cost)</b>				<b>\$400.00</b>
<b>Sampling/Analysis Costs (4/year)</b>	<b>6</b>	<b>Locations</b>	<b>\$400.00</b>	<b>\$2,400.00</b>
<b>TOTAL ANNUAL GAS MONITORING SYSTEM COSTS</b>				<b>\$2,800.00</b>

\* There are 10 wells at the site (assume 5 are for Site 3 and 5 are for Site 4)

\*\* There are 12 locations at the site (assume 6 are for Site 3 and 6 are for Site 4)

<b>TOTAL ANNUAL POST-CLOSURE CARE COSTS:</b>	<b>\$31,242.40</b>
<b>TOTAL POST-CLOSURE CARE COSTS (30 YEAR PERIOD)</b>	<b>\$937,272.00</b>

**TABLE 3 - SITE 4 CLASS I LANDFILL  
CLOSURE COST ESTIMATE  
TONTITOWN, ARKANSAS  
1-Nov-96**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Surface Preparation	29.10	AC	\$500	\$14,550
Gas Venting Layer (Optional) *	N/A	N/A	N/A	N/A
Clay Cover	70,440	CY	\$2.50	\$176,100
Synthetic Liner*	N/A	N/A	N/A	N/A
Gas Vents *	N/A	N/A	N/A	N/A
Drainage Layer (Optional)	N/A	N/A	N/A	N/A
Biotic Barrier Layer (Optional) **	N/A	N/A	N/A	N/A
Filter Layer (Optional) ***	N/A	N/A	N/A	N/A
Vegetation/Soil Top Layer	23,480	CY	\$2	\$46,960
Seeding/Fertilizing/Mulching	29.10	AC	\$1,500	\$43,650
Erosion Control	1	LS	\$2,500	\$2,500
Quality Assurance/Quality Control	1	LS	\$35,000	\$35,000
Surveying	1	LS	\$2,500	\$2,500
Certification	1	LS	\$2,500	\$2,500
Let Down Structures	1	LS	\$2,500	\$2,500
Side Slope Berms	1	LS	\$1,500	\$1,500
			<b>TOTAL</b>	<b>\$327,760</b>

Note: All costs are in 1996 Dollars;

\* Gas vent system and synthetic liner to be addressed in future permit modification

\*\* Biotic Barrier Layer is not included in the final cover system design;

\*\*\* The costs associated with the filter layer are included with the drainage layer;

**TABLE 4 - SITE 4 CLASS I LANDFILL  
POST CLOSURE CARE COST ESTIMATE  
TONTITOWN, ARKANSAS**

1-Nov-96

**MISC. REPAIRS (SUBSIDENCE, SETTLING, EROSION, ROADS, ETC.)**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Labor (3 people x 8 hr/day x 4 days/yr)	96	Hours	\$15.00	\$1,440.00
Equipment- Dozer	16	Hours	\$98.00	\$1,568.00
Dump Truck	16	Hours	\$56.00	\$896.00
Loader	16	Hours	\$63.00	\$1,008.00
Misc. Materials and Services*	1	LS	\$3,500.00	\$3,500.00
<b>TOTAL MISC. REPAIRS</b>				<b>\$8,412.00</b>

**MAINTAIN/OPERATE LEACHATE COLLECTION SYSTEM**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Capital Cost of System (\$18,000; Estimated Life = 10 years)				
Annual Maintenance and Repair (1/10 of Capital Cost)				\$1,800.00
Leachate Generation/Yr. (Gallons)**	26,558	\$/gal	\$0.01	\$265.58
Annual Transportation Costs	26,558	\$/gal	\$0.07	\$1,859.06
Annual Treatment Costs	26,558	\$/gal	\$0.05	\$1,327.90
<b>TOTAL LEACHATE SYSTEM O&amp;M</b>				<b>\$5,252.54</b>

\* Includes NPDES Sampling and Reporting;

\*\* Amount based on 2.5 gal per acre per day

**TABLE 4 (Continued) - SITE 4 CLASS I LANDFILL  
POST CLOSURE CARE COST ESTIMATE  
TONTITOWN, ARKANSAS  
1-Nov-96**

**MAINTAIN/OPERATE GROUNDWATER MONITORING SYSTEM**

ITEM	# of Wells	UNIT	Cost/Well	AMOUNT
<b>Capital Cost (5 wells at \$3,660 = \$18,300; Assume 30 year life) *</b>				
<b>Annual Maintenance and Repair (1/30 of Capital Cost)</b>				<b>\$610.00</b>
<b>Annual Sampling Costs (2/year)</b>	<b>5</b>	<b>Wells</b>	<b>\$500.00</b>	<b>\$2,500.00</b>
<b>Annual Laboratory Analysis (2/year)</b>	<b>5</b>	<b>Wells</b>	<b>\$1,200.00</b>	<b>\$6,000.00</b>
<b>Statistical Analysis (2/year)</b>	<b>5</b>	<b>Wells</b>	<b>\$1,250.00</b>	<b>\$6,250.00</b>
<b>TOTAL ANNUAL GW MONITORING SYSTEM COSTS</b>				<b>\$15,360.00</b>

**MAINTAIN/OPERATE GAS MONITORING SYSTEM**

ITEM	# of Locations	UNIT	Cost/Probe	AMOUNT
<b>Capital Cost of System (6 locations at \$2,000 ea = \$12,000; Assume 30 year life) **</b>				
<b>Annual Maintenance and Repair (1/30 of Capital Cost)</b>				<b>\$400.00</b>
<b>Sampling/Analysis Costs (4/year)</b>	<b>6</b>	<b>Locations</b>	<b>\$400.00</b>	<b>\$2,400.00</b>
<b>TOTAL ANNUAL GAS MONITORING SYSTEM COSTS</b>				<b>\$2,800.00</b>

\* There are 10 wells at the site (assume 5 are for Site 3 and 5 are for Site 4)

\*\* There are 12 locations at the site (assume 6 are for Site 3 and 6 are for Site 4)

<b>TOTAL ANNUAL POST-CLOSURE CARE COSTS:</b>	<b>\$31,824.54</b>
<b>TOTAL POST-CLOSURE CARE COSTS (30 YEAR PERIOD)</b>	<b>\$954,736.20</b>



**TABLE 5 - SITE 4 CLASS IV LANDFILL  
CLOSURE COST ESTIMATE  
TONTITOWN, ARKANSAS  
1-Nov-96**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Surface Preparation	10.70	AC	\$500	\$5,350
Gas Venting Layer (Optional)	N/A	N/A	N/A	N/A
Clay Cover	25,900	CY	\$2.50	\$64,750
Synthetic Liner	N/A	SF	N/A	N/A
Gas Vents	N/A	N/A	N/A	N/A
Drainage Layer (Optional)	N/A	SF	N/A	N/A
Biotic Barrier Layer (Optional)	N/A	N/A	N/A	N/A
Filter Layer (Optional)	N/A	N/A	N/A	N/A
Vegetation/Soil Top Layer	8,630	CY	\$2	\$17,260
Erosion Layer	N/A	SF	N/A	N/A
Seeding/Fertilizing/Mulching	10.70	AC	\$1,500	\$16,050
Erosion Control	1	LS	\$2,500	\$2,500
Quality Assurance/Quality Control	1	LS	\$25,000	\$25,000
Surveying	1	LS	\$2,500	\$2,500
Certification	1	LS	\$2,500	\$2,500
Let Down Structures	1	LS	\$2,500	\$2,500
Side Slope Berms	1	LS	\$1,500	\$1,500
			<b>TOTAL</b>	<b>\$139,910</b>

Note: All costs are in 1996 Dollars

**TABLE 6 - SITE 4 CLASS IV LANDFILL  
POST CLOSURE CARE COST ESTIMATE  
TONTITOWN, ARKANSAS**

1-Nov-96

**MISC. REPAIRS (SUBSIDENCE, SETTLING, EROSION, ROADS, ETC.)**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Labor (3 people x 8 hr/day x 4 days/yr)	96	Hours	\$15.00	\$1,440.00
Equipment- Dozer	16	Hours	\$98.00	\$1,568.00
Dump Truck	16	Hours	\$56.00	\$896.00
Loader	16	Hours	\$63.00	\$1,008.00
Misc. Materials and Services*	1	LS	\$3,500.00	\$3,500.00
<b>TOTAL MISC. REPAIRS</b>				<b>\$8,412.00</b>

**MAINTAIN/OPERATE LEACHATE COLLECTION SYSTEM**

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
<b>Capital Cost of System (\$18,000; Estimated Life = 10 years)</b>				
<b>Annual Maintenance and Repair (1/10 of Capital Cost)</b>				<b>\$1,800.00</b>
Leachate Generation/Yr. (Gallons)**	9,760	\$/gal	\$0.01	\$97.60
Annual Transportation Costs	9,760	\$/gal	\$0.07	\$683.20
Annual Treatment Costs	9,760	\$/gal	\$0.05	\$488.00
<b>TOTAL LEACHATE SYSTEM O&amp;M</b>				<b>\$3,068.80</b>

\* Includes NPDES Sampling and Reporting;

\*\* Amount based on 2.5 gal per acre per day

**MAINTAIN/OPERATE GROUNDWATER MONITORING SYSTEM (Included in Class I Landfill Costs)**

**MAINTAIN/OPERATE GAS MONITORING SYSTEM (Included in Class I Landfill Costs)**

<b>TOTAL ANNUAL POST-CLOSURE CARE COSTS:</b>	<b>\$11,480.80</b>
<b>TOTAL POST-CLOSURE CARE COSTS (2 YEAR PERIOD)</b>	<b>\$22,961.60</b>