SOUTHEASTERN WYOMING

INTEGRATED SOLID WASTE MANAGEMENT PLANNING AREA

EXISTING FACILITIES REPORT

EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT

August 8, 2008

Project #: 427-007-001

SUBMITTED BY: Trihydro Corporation

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1.0 INTRODUCTION

1.1 PURPOSE

In the spring of 2007, the Eastern Laramie County Solid Waste Disposal District (ELCSWDD) passed a resolution to prepare a multi-jurisdictional integrated solid waste management (ISWM) plan with the Cities of Laramie and Cheyenne. On July 13, 2007, a letter of intent was submitted to the Wyoming Department of Environmental Quality (WDEQ) identifying these three entities as planning partners, now collectively known as the Southeast Wyoming Planning Group (SWPG). The final ISWM plan is intended to evaluate existing waste management systems within the planning area, and identify alternatives that may provide cost-effective and environmentally sound solutions for the next 20 years. The purpose of this interim report is to present the results of planning activities completed to date by Trihydro Corporation (Trihydro) specifically regarding the existing solid waste management system for eastern Laramie County.

1.2 ORGANIZATION OF THIS REPORT

The results of solid waste planning activities completed for the ELCSWDD are summarized in the following sections of this report:

Section 2.0 – Methodologies

Section 3.0 – Existing Facility Profiles

Section 4.0 – Population and Waste Stream Estimates and Forecasts

Section 5.0 – References

2.0 METHODOLOGIES

Specific methodologies were utilized to prepare comprehensive and consistent comparisons of waste management systems. The following information is provided to describe these methodologies, as well as the associated assumptions and limitations.

2.1 INVENTORY OF EXISTING FACILITIES

Trihydro developed a survey to capture information regarding existing waste management facilities that are operating within the project planning area, and distributed these surveys to facility operators to obtain their written responses. Trihydro reviewed the written answers to the survey questions and the supporting documentation, and then presented follow-up questions, as necessary, in an attempt to further clarify specific issues. A copy of the completed survey for the existing facility within the local project planning area is provided in Appendix A. All questions, answers, and supporting documentation provided by the owner/operator are noted in the survey. The description and analysis of the existing waste management system presented in this report is based on and limited by the information provided by the owner/operator of the facility.

2.2 FULL COST ACCOUNTING

The Full Cost Accounting (FCA) methodology used for this project is generally based on the methodology described in *Full Cost Accounting for Municipal Solid Waste Management: A Handbook* (EPA 1997). The FCA methodology accounts for the time-value of money throughout the life-cycle of a facility, which includes development (i.e., up-front), operation, and closure/post-closure (i.e., back-end) costs, but does not include remediation, contingent, environmental degradation, or social costs. All costs were converted to equivalent annual costs over the operating life of the facility, and correlated to the annual tonnage of waste managed to estimate a cost per ton for each facility.

The annual inflation rate, as defined by Wyoming Solid Waste Rules and Regulations Chapter 7 "Financial Assurance Requirements" was used to estimate a long-term average annual effective rate (i) for this project (WDEQ 1998C). From 1994 through 2007, the annual inflation rate ranged from approximately 1.1% to 3.2%, and averaged approximately 2.2%. Based on this data, an average annual effective rate of 3% was selected for this project. While the current economic climate has heightened concerns that the future annual inflation rate could increase over 3% for a period of years, the average annual inflation rate over the entire planning period (through 2027) would have to differ substantially from the historical record to require adjustment of the estimated annual costs presented herein.

Facility assets were depreciated by the "straight-line" method over the associated useful life of the asset. Default estimates of the useful life of assets were used if asset-specific estimates were unavailable from the operator. Default estimate values are listed in Appendix C.

The FCA methodology was applied to existing facilities that compose the core infrastructure of the local waste management system (i.e., landfills, transfer stations, recycling centers, and composting facilities). FCA data were compiled using a series of worksheets and associated guidelines, as follows:

Worksheet #1 - Full Cost Accounting Summary Sheet

Worksheet #2 - 2007 Development Costs

Worksheet #3 - 2007 Operating Costs

Worksheet #4 - 2007 Closure & Post-Closure Costs

Worksheet #5 - 2007 Revenues

Worksheet #6 - 2007 Closure/Post-Closure Cost Guideline

The FCA methodology was limited to those facilities that are owned by cities, counties, or public non-profit organizations that were able to provide financial information. FCA worksheets were developed for each of the core facilities, as applicable. Analysis of financial information for privately-owned facilities and/or contractors was limited to available service rate schedules.

Closed facilities (i.e., landfills) that may be present within the planning area were omitted from the scope of work for this project. Closed facilities may be a financial liability to the respective responsible parties, primarily due to long-term monitoring costs, but also due to potential remediation costs. Remediation costs are outside the scope of the full cost accounting methodology. More importantly, the potential costs associated with closed facilities are unlikely to change whether the existing waste management system is maintained or replaced by an alternative system. Therefore, for the purposes of this project, it was assumed that the selection of the existing waste management system or a preferred alternative is independent of the potential costs associated with closed facilities.

Collection services are also an important component of any waste management system. Collection services are often provided by some combination of public entities, private companies, and individuals, and the costs associated with each type of service provider can be highly variable. In addition, many collection service fees are inclusive of tipping fees at

a particular facility. Due to the variable nature of collection service costs and the nature of the associated fee structure, collection system costs were excluded from the FCA analysis of individual facilities.

2.3 POPULATION ESTIMATES AND FORECASTS

Local populations within the service areas of existing facilities were estimated based on data from the 2000 Census. The area served by the ELCSWDD is the Laramie County School District #2, and the 2000 Census provides an estimate of the population within the school district boundary. The 2000 Census data was then used to estimate the 2005 population in accordance with the Census Bureau estimates for the 2005 population published in July, 2007. For dates after 2005, population estimates and forecasts prepared by local planning departments were available, and these estimates were used in lieu of federal growth rate estimates. PlanCheyenne, a comprehensive planning document, was adopted by both the City of Cheyenne and Laramie County at the end of 2006. This planning document recommends application of a 2% annual growth rate to both the city and county populations for planning purposes. Local planning department personnel believe that population fluctuations along the Front Range have the potential to impact population growth in Laramie County. In addition, available data on numbers of residential building permits, and water and sewer taps conflict with more conservative national estimates of growth (WDAI 2007) in the area. Future population forecasts were thus prepared by multiplying the base 2005 census estimate by the PlanCheyenne average annual county growth rate (2%) for 2005 through 2027, which is the end of the planning period for this project.

2.4 WASTE STREAM ESTIMATES AND FORECASTS

Default waste generation rates for existing facilities were initially estimated using data published by the U.S. Environmental Protection Agency. In 2005, the national average generation rate for municipal solid waste was approximately 4.5 pounds per person per day (EPA 2006). In 1996, the national average generation rate for construction and demolition wastes was approximately 2.8 pounds per person per day (EPA 1998). Based on these averages, the total default waste generation rate was estimated to be approximately 7.3 pounds per person per day. The EPA data was used in lieu of the estimate provided in Wyoming Solid Waste Rules and Regulations Chapter 1, Section 1.e.i (6.6 pounds per person per day, municipal solid waste and construction/demolition waste) due to the fact that the EPA data was more recent and based on a larger data set (WDEQ 1998A). For facilities that had site-specific weight data for the incoming waste stream, local data was used in lieu of the default data to estimate current waste generation rates.

Forecasts of the amounts (i.e., tons) of wastes that will be generated, diverted, and disposed throughout the planning period were based on the assumption that current waste generation, diversion, and disposal rates (i.e., pounds per person) will remain constant. The national waste generation rate has been relatively constant since 1990 (EPA 2006), so it is reasonable to assume a continued constant waste generation rate for the planning period.

Diversion rates, however, have the potential to increase during the planning period in response to public education efforts, expansion of diversion opportunities, and rising disposal costs. Current diversion rates in many Wyoming communities are generally low, and available data is insufficient to predict the amount and duration of potential increases. If an increasing diversion rate is used to develop the forecasts, but the actual diversion rate falls short of the predicted increase, then the forecasts will be high for the amounts of commodities diverted, and the forecasts of the amounts of waste disposed will tend to be low.

Underestimating the future amounts of wastes disposed has the potential for severe adverse effects on disposal facilities, which would be counterproductive to the current long-term planning effort. Therefore, for the purposes of this project, conservative forecasts (constant rate assumption) of the amounts of wastes diverted and disposed were used to ensure adequate planning for disposal facility capacity. Should the actual diversion rates increase substantially during the planning period, the potential underestimate of the future amounts of commodities diverted could adversely affect recycling facility capacity, but would not adversely affect disposal site life.

General waste stream characteristics were also estimated using EPA data (EPA 1998; EPA 2006; EPA 2007). The relative percentages of specific waste types (e.g., yard wastes, recycling commodities, household hazardous wastes, concrete, clean wood, metal) were multiplied by the default waste generation rates to provide a general estimate of the weight of specific waste types that could potentially be diverted from the incoming waste stream. For facilities that had site-specific weight data for commodities diverted from the incoming waste stream, local data was used to estimate current diversion rates for specific waste types.

3.0 EXISTING FACILITY PROFILES

The following information provides a general description of the existing facility in Eastern Laramie County. The following also includes a summary of current capacity, regulatory, and financial issues.

3.1 EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT (ELCSWDD) LANDFILL

The ELCSWDD regional landfill is a Type II landfill located at 4990 County Rd, approximately 3 miles north of Burns, Wyoming, in Township 15 North, Range 62 West, Section 29 (Figure 3-1). The facility is owned and operated by the ELCSWDD and began receiving wastes in 1983. The permitted landfill area encompasses approximately 46.6 acres. Scales were installed at the facility in 2007, and are housed in a 770 square foot (sf) structure. Two additional structures exist on-site including a 2400 sf storage building and a 720 sf office building. The storage shed and office building were constructed in 1983 and 1994, respectively. The facility also includes a 5,000 sf open-air composting area.

Municipal solid wastes are transported to the facility by the Town of Burns, the Town of Albin, the Town of Pine Bluffs, by numerous private collection service providers, and by the general public. Municipal wastes are disposed of on-site in unlined trenches. Construction/demolition (C&D) waste, non-friable asbestos, concrete, asphalt, tree branches and clean wood are also disposed of on-site. Dead animals and yard wastes are composted and the resulting compost material is used as part of the daily cover. Tires and batteries are collected free of charge one day per year in coordination with a county sponsored spring collection day. The tires and batteries collected from this event are picked up by the county or county contractor and are not disposed of on-site. Scrap metal and white goods are stockpiled for recycling. The stockpile is usually salvaged by private contractors on an annual basis and is the only waste stream currently diverted from the landfill. In early 2008, a private contractor (RTS Recycling) began diverting cardboard, aluminum, and glass from arriving at the landfill by providing collection services for recyclables, however, RTS closed its recycling operations in mid-2008.

3.1.1 CAPACITY CONSIDERATIONS

The original permitted capacity of the ELCSWDD Landfill is unknown. In 1997, however, engineering estimates predicted a remaining capacity of 620,900 cubic yards (cy) and a remaining site life of 42 years (i.e., until 2039). The ELCSWDD owns approximately 159.8 total acres at this site. The pending permit renewal application requests a

lateral expansion to include 99.1 acres in addition to the original 46.6 acres for a total of 145.7 acres within the proposed permit boundary. The remaining 14.1 acres are proposed for a wellhead exclusion zone and not available for additional disposal capacity. Engineering estimates from the pending 2007 permit renewal document predict a remaining site life of 94 years should the lateral expansion be approved.

3.1.2 REGULATORY CONSIDERATIONS

The final version of the current operating permit application for the ELCSWDD Landfill was submitted to the Wyoming Department of Environmental Quality Solid and Hazardous Waste Division (WDEQ/SHWD) on October 30, 1997. The current operating permit was issued by the WDEQ/SHWD on November 12, 1997. WDEQ/SHWD issued a permit extension to allow continued operation under the existing permit through December 31, 2008. A permit renewal application submitted December 18, 2007 is pending approval by the WDEQ/SHWD.

The current operating permit for the facility authorizes the disposal of municipal solid wastes in unlined disposal cells. However, the WDEQ/SHWD is currently reviewing operating permits for all existing landfills that were previously authorized to dispose municipal solid waste in unlined disposal cells. To date, the WDEQ/SHWD has not issued a final determination regarding the need to construct and operate future municipal solid waste disposal units at this facility with engineered containment systems. In anticipation of a WDEQ determination letter, the permit renewal application submitted in 2007 includes engineered containment specifications for future waste disposal cells.

The current environmental monitoring network for the facility includes seven groundwater monitoring wells that are sampled semi-annually for baseline parameters (WDEQ 1998B). Two additional groundwater wells are proposed for installation in 2009 and 2013, respectively. Total organic carbon (TOC) concentrations have recently indicated a statistically significant increase over background levels. There are also eight methane monitoring points at the facility that are monitored semi-annually. No methane has ever been detected.

3.1.3 FINANCIAL CONSIDERATIONS

The current tipping fees for waste generated in Eastern Laramie County are $25.00 per ton with a $12.50 minimum for the general public and $7.50 per cubic yard for contractors. The majority of facility revenues are provided by mil levy funds and user tipping fees.

The FCA analysis of the ELCSWDD Landfill was generally based on development costs estimated by the operator, actual operating expenditures and revenues for fiscal year 2006-2007 (FY0607), and closure/post-closure costs estimated by Trihydro. Copies of the FCA worksheets (# 1 through #6) for the facility are provided in Appendix B. The average life-cycle cost of the facility was estimated to be approximately $238,674 per year. In FY0607, the facility managed approximately 3,650 tons of waste. Based on that tonnage, the average life-cycle cost of managing wastes at the facility in FY0607 was approximately $65 per ton. Approximately $500 was reported in annual revenue from the sale of scrap metal and white goods. No other revenues were reported from the sale of commodities diverted from the waste stream. The sale of commodities is a minor source of revenue and therefore does not significantly impact the average annual life-cycle cost per ton of managing waste at the Eastern Laramie County Solid Waste Disposal District Landfill.

Significant assumptions and limitations associated with the FCA analysis of the facility include:

- Historical documentation regarding the costs of facility development, non-routine site improvements, and in-kind services by other government entities was limited. The estimated average annual operating costs, therefore, may not fully describe the life-cycle cost of the facility.
- Current closure/post-closure costs were estimated by Trihydro based on both published data and actual regional costs using the general task categories defined by Solid Waste Guideline #12 “Participation in the State Trust Account” (WDEQ 1997).
- Limited facility development costs were identified. However, some major capital expenditures (e.g., the cost of purchasing equipment) were included in the FCA analysis of operating costs.
- Excavation costs of the current cell are incorporated in operating costs since ELCSWDD employees continuously mine the cells.

3.2 FINANCIAL SUMMARY

The average annual life-cycle cost of the ELCSWDD Landfill, without including the sale of commodities, was approximately $238,674. The average annual life-cycle cost of the ELCSWDD Landfill, including the sale of commodities (minor scrap metal and white goods), was approximately $238,174. The facility managed approximately 3,650 tons of waste and commodities, for an average annual life-cycle cost of approximately $65 per ton.

4.0 POPULATION AND WASTE STREAM ESTIMATES AND FORECASTS

The following information provides general estimates and forecasts of service populations and waste stream characteristics for the existing facility in eastern Laramie County.

4.1 ELCSWDD LANDFILL

The service area for this facility includes all communities in the eastern one third of Laramie County, from County Rd. 136 to the Nebraska/Wyoming border. This encompasses all of Laramie County School District #2 and includes the incorporated towns of Albin, Burns, and Pine Bluffs and the communities of Carpenter and Hillsdale among others.

4.1.1 POPULATION ESTIMATES AND FORECASTS

Service population data, estimates, and forecasts for the ELCSWDD Landfill are summarized in Table 4-1. As described earlier, the local population within the service area was estimated based on data from the 2000 Census along with U.S. Census Bureau estimates for the 2005 population. The census data provides an estimate of the population within Laramie County School District #2, and this includes specific data for Albin, Burns, Pine Bluffs and at least a dozen Census Data Places (CDPs) identified by the Census Bureau for statistical purposes (WDAI 2007). CDPs are communities that lack separate municipal government, but which otherwise physically resemble incorporated places. CDPs are delineated to provide data for settled concentrations of population that are identifiable by name but are not legally incorporated.

The 2007 estimate and the 2027 forecast of the facility's service population are 4,705 people and 6,991 people, respectively. The 2007 estimate and the 2027 forecast were developed based on the 2005 population estimate published by the Census Bureau augmented by the PlanCheyenne recommended average annual growth rate forecast of approximately 2.0 % for Laramie County.

4.1.2 WASTE STREAM ESTIMATES AND FORECASTS

The characteristics of the 2007 waste stream received at the ELCSWDD Landfill are summarized in Table 4-2. Site specific data were only available for the general categories of municipal solid waste and construction/demolition wastes, based on 7 months of scale data collected beginning in July 2007. The 2007 scale data was extrapolated to provide an estimate for the waste tonnage received over the entire year. The 2007 estimate (based on scale data) was

then divided by the service area population to derive an estimate for the 2007 waste generation rate. The 2007 waste generation rate, including both municipal solid waste and construction/demolition wastes, was approximately 4.3 pounds per person per day. This is low compared to the EPA national estimates of about 7.3 pounds per person per day. The most significant difference was in the construction demolition (C/D) wastes category, where only 0.6 pounds of C/D wastes per person per day were received at the ELCSWDD landfill compared to a national estimate of 2.8 pounds per person per day.

Waste generation rate estimates expressed on a per person basis likely appear low because although the service area technically includes over 4,000 people, many of these individuals may not currently utilize the ELCSWDD facility. The service area for the ELCSWDD Landfill is primarily rural, and remote residences may use burn barrels, private ranch landfills, or may haul waste to nearby Cheyenne when conducting other business in the state capitol. Some of the private haulers combine loads from residences within the ELCSWDD service area with wastes from routes outside the area and take combined loads to Cheyenne. Some wastes generated on the eastern side of the service area, particularly construction/demolition wastes, are likely hauled to closer disposal facilities located in Nebraska.

The tonnages and relative percentages of the 2007 waste stream that were diverted from disposal are also summarized in Table 4-2. Approximately 10 tons of scrap metal/white goods were reportedly diverted from the waste stream at this facility. The 2027 forecast of the amount of wastes that will be generated for disposal (5,409 tons per year and 93,847 cumulative tons) is summarized in Table 4-1. The 2027 forecast of the amount of wastes that will be diverted from disposal (15 tons per year) is also summarized in Table 4-1.

4.2 SUMMARY

The following summary information is provided for eastern Laramie County, and is based on the data and assumptions described in this report.

In 2007:

- The service population in eastern Laramie County was approximately 4,705 people
- The average waste generation rate was approximately 4.3 pounds per person per day
- Approximately 3,650 tons of wastes were generated
- Approximately 3,640 tons of wastes were disposed in a landfill

- Approximately 10 tons of wastes were diverted from disposal
- The cumulate waste diversion rate was approximately 0.3 %

In 2027:

- The service population will be approximately 6,991 people
- Approximately 5,424 tons of wastes will be generated
- Approximately 5,409 tons of waste will be disposed in a landfill
- Approximately 15 tons of waste will be diverted from disposal

Between 2007 and 2027:

- Approximately 93,847 tons of waste will be disposed in a landfill

5.0 REFERENCES

Environmental Protection Agency (EPA). 1997. Full Cost Accounting for Municipal Solid Waste Management: A Handbook. EPA 530-R-95-041. September 1997.

EPA. 1998. Characterization of Building-Related Construction and Demolition Debris in the United States. EPA 530-R-98-010. June 1998.

EPA. 2006. Municipal Solid Waste in the United States: 2005 Facts and Figures. EPA 530-R-06-011. October 2006.

EPA. 2007. Household Hazardous Waste Facts and Figures. Available from: EPA Municipal Solid Waste via the Internet: (http://epa.gov/garbage/hhw.htm).

Wyoming Department of Administration and Information (WDAI). 2007. Demographic Information. Available from: Economic Analysis Division via the Internet: (http://eadiv.state.wy.us/demog_data/demographic.html).

Wyoming Department of Environmental Quality (WDEQ). 1997. Solid Waste Guideline #12: Participation in the State Trust Account. January 22, 1997.

WDEQ. 1998A. Chapter 1 General Provisions. Solid Waste Rules and Regulations. Filed October 15, 1998.

WDEQ. 1998B. Chapter 2 Sanitary Landfill Regulations. Solid Waste Rules and Regulations. Filed October 15, 1998.

WDEQ. 1998C. Chapter 7 Financial Assurance Requirements. Solid Waste Rules and Regulations. Filed October 15, 1998.

TABLES

TABLE 4-1. POPULATION AND WASTE GENERATION ESTIMATE AND FORECAST SUMMARY
EASTERN LARAMIE COUNTY, WYOMING

						Estimate		Forecast		
	2000 Census	2005 Estimate	Annual Growth Rate[1]	2007 Annual Waste Management Rate	Waste Type	2007		2027		Cumulative 2007-2027 (Disposal)
FACILITY	Pop.	Pop.	(%)	(t/p/y)		Pop.	Tons	Pop.	Tons	Tons
Eastern Laramie Co SWDD Landfill	4,340	4,522	2.000%	0.667	MSW	4,705	3,140	6,991	4,666	80,956
				0.106	CDW		500		743	12,891
					SSW		0		0	0
				0.002	MSW-D		10		15	
					CDW-D		0		0	

Cumulative MSW (Disposal) =	**80,956**
Cumulative CDW (Disposal) =	**12,891**
Cumulative SSW (Disposal) =	**0**
Cumulative All Wastes (Disposal) =	**93,847**

NOTES

1 PlanCheyenne annual growth rate for planning purposes

ABBREVIATIONS

t/p/y = tons per person per year
MSW = Municipal Solid Waste
CDW = Construction and Demolition Waste
SSW = Special Solid Waste
MSW-D = Municipal Solid Waste - Diverted (from disposal)
CDW-D = Construction and Demolition Waste - Diverted (from disposal)

TABLE 4-2. 2007 ANNUAL WASTE STREAM SUMMARY
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

2007 Service Population	4,705
Default MSW Generation Rate[1] (lbs/person/day)	4.5
Default CDW Generation Rate[2] (lbs/person/day)	2.8
Actual MSW Generation Rate (lbs/person/day)	3.7
Actual CDW Generation Rate (lbs/person/day)	0.6

	2007 Population Data			2007 Site-Specific Data		
Waste Stream	**Generated (tons)**	**Divertable (tons)**	**(%)**	**Received (tons)**	**Diverted (tons)**	**(%)**
Municipal Solid Waste (MSW)	3,864			3,150		
Yard Wastes		506	13.1%			0.0%
Food Wastes		460	11.9%			0.0%
Newspaper		189	4.9%			0.0%
Magazines		39	1.0%			0.0%
White Office Paper		104	2.7%			0.0%
Junk Mail/Directories/Commercial Printing		220	5.7%			0.0%
Cardboard		487	12.6%			0.0%
Plastics #1 (PET)		12	0.3%			0.0%
Plastics #2 (HDPE)		12	0.3%			0.0%
Glass Bottles/Jars		170	4.4%			0.0%
Aluminum Cans		23	0.6%			0.0%
Steel Cans		35	0.9%			0.0%
Lead-Acid Batteries		39	1.0%			0.0%
Electronic Wastes		43	1.1%			0.0%
White Goods*		58	1.5%		10	0.3%
Tires		70	1.8%			0.0%
Household Hazardous Waste[3]		27	0.7%			0.0%
Used Oil						0.0%
Antifreeze						0.0%
Paint						0.0%
Pesticides						0.0%
Other						0.0%
Other						0.0%
Construction and Demolition Waste (CDW)	2,404			500		
Concrete		601	25.0%			0.0%
Asphalt		24	1.0%			0.0%
Clean Wood		361	15.0%			0.0%
Metal		120	5.0%			0.0%
Other						0.0%
Special Solid Waste (SSW)						
Industrial						
Petroleum Contaminated Soils						
Non-Friable Asbestos						
Friable Asbestos						
Dead Animals						
Infectious						
Other						

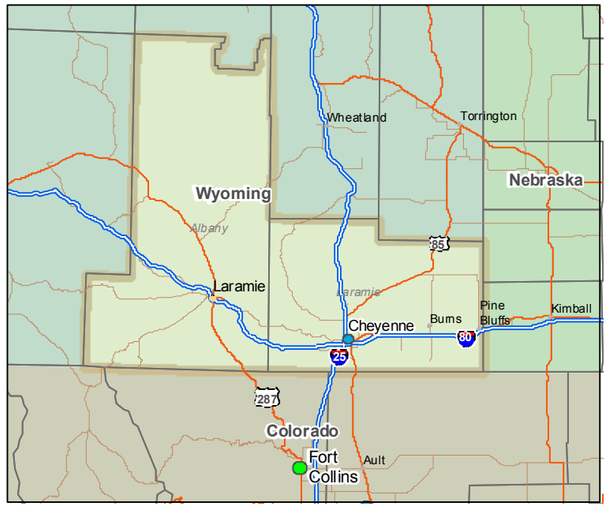
Municipal Solid Waste Receipt Rate (tons) =	**3,150**
Municipal Solid Waste Diversion Rate (tons) =	**10**
Municipal Solid Waste Diversion Rate (%) =	**0.3%**
Construction/Demolition Waste Receipt Rate (tons) =	**500**
Construction/Demolition Waste Diversion Rate (tons) =	**0**
Construction/Demolition Diversion Rate (%) =	**0.0%**
Cummulative Municipal and Construction/Demolition Diversion Rate (%) =	**0.3%**
Special Waste Receipt Rate (tons) =	**0**

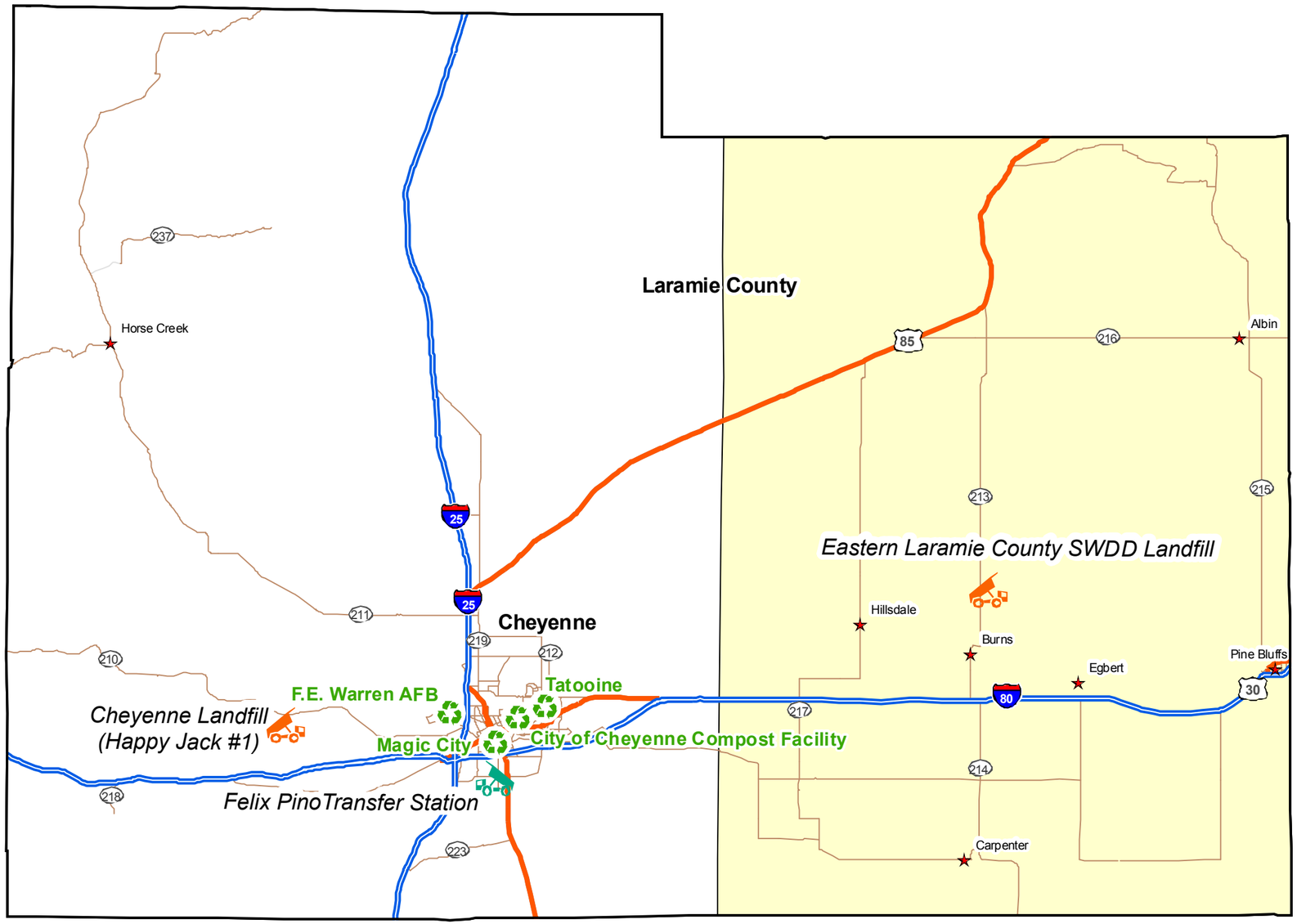
NOTES

1 Based on 2005 national average (EPA 2006)
2 Based on 1996 national average (EPA 1998)
3 Based on national average (EPA 2006)

FIGURES

REGIONAL LOCATION MAP SHOWING PLANNING AREA





EXPLANATION

ACTIVE LANDFILL

TRANSFER STATION

RECYCLING CENTERS

EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT (SWDD) BOUNDARY

N

0 5 10 Miles

Trihydro CORPORATION
1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307.745.7474 (F) 307.745.7729

FIGURE 3-1

EXISTING WASTE MANAGEMENT SYSTEM EASTERN LARAMIE COUNTY

SOUTHEAST WYOMING INTEGRATED SOLID WASTE MANAGEMENT PLANNING PROJECT

Drawn By: BR	Checked By: MB	Scale: 1" = 6 Miles	Date: 7/25/08	File: E_Laramie_Cnty.mxd

APPENDIX A

EXISTING FACILITY SURVEY
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL

INTEGRATED SOLID WASTE MANAGEMENT PLAN
SOUTHEAST WYOMING PLANNING AREA

EXISTING FACILITY SURVEY

Last Updated: August 7, 2008

Please provide as much detailed information as possible for each of the following survey questions by left-clicking on the gray box after "Answer" and entering your response. As an alternative, you may write your responses on a separate sheet of paper using the numbering system provided below. If a particular question is not applicable, indicate so by entering "***NA***", and provide a brief explanation.

General Information

1. Facility Name and WDEQ File Number
Answer: Eastern Laramie County Solid Waste Disposal District, #10.330

2. Physical Address
Answer: 4990 County Rd. 216, Burns, WY, 82053

3. Township/Range/Section or Latitude/Longitude
Answer: Township 15N, Range 62W, SE ¼ of Section 29, Laramie County

4. First Year of Operation
Answer: 1983

For each facility contact listed below, identify:

- Entity Name
- Contact Name
- Mailing Address
- Phone
- Fax
- Email

5. Landfill Permit Holder
Answer: Eastern Laramie County Solid Waste Disposal District, Russ Hay (Manager/Operator), PO Box 41, Burns, WY, 82053. Phone: (307) 547-3791. Fax: (307) 547-3741.

6. Landowner (if different than Landfill Permit Holder)
Answer:

7. Engineer (that prepared most recent permit application)
Answer: Terracon Consulting Engineers and Scientists

8. Local Collection Service Providers (city and private)
Answer: Town of Albin, Town of Burns, Town of Pine Bluffs, RTS, Pack Rat Too, Coyote Sanitation, Flyte Sanitation

2/19/2008 – Per Russ Hay (Landfill Manager): RTS collection within Hillsdale, Carpenter and outliers. Coyote Sanitation collects south of Pine Bluffs (15-20 customers). Pack Rat Too operates out of Kimball, NE and Flyte operates out of Cheyenne.

Permit Information

Current Application/Permit

9. Date of Current Application
Answer: Oct. 30, 1997

10. Date of WDEQ Permit Letter
Answer: Nov. 12, 1997

11. Facility Classification (Type I or II)
Answer: Type II

12. Total Acreage
Answer: 46.64 acres in use. Total 159.8 acres approximate.

13. Service Area
Answer: East (1/3) one-third of Laramie County from County Rd. 136 east to the NE/WY state line.

2/19/2008 Per Russ Hay (Landfill Manager): Area referred to as Laramie County School District #2.

14. Service Population … include date, source, and basis of estimate
Answer: 3,042 (Projected from 1990 census data).

15. Operating Hours (days per week, and hours per day)
Answer: 4 days per week, 6 hours per day
(Tuesday, Thursday, Friday, Saturday 10:00 AM to 4:00 PM)

16. Total Disposal Capacity (cubic yards)
Answer: Unknown

17. Remaining Disposal Capacity (cubic yards) …include date, source, and basis of estimate
Answer: 620,900 cubic yards. Feb. 1997 – Terracon Consultants Western Inc.

18. Remaining Site Life (years) … include date, source, and basis of estimate
Answer: 42 years. Feb. 1997 – Terracon Consultants Western Inc.

Pending Application/Permit (if applicable)

19. Date of Pending Application
Answer: Dec. 18, 2007

2/19/2008 – Per Russ Hay (Landfill Manager): Renewal should be effective this spring. Landfill is operating under extended 1997 permit.

20. Name of Consultant that prepared Pending Application
Answer: Terracon Consulting Engineers and Scientists

21. Nature of Pending Application … examples: renewal, major amendment
Answer: Renewal

22. Status of Pending Application
Answer: WDEQ/SHWD is reviewing it currently

Liner/Cover System

23. General description of current liner system … examples: unlined trenches, compacted clay, composite liner, etc.
Answer: Unlined trenches

24. WDEQ Engineered Containment System Determination … provide date and summary of determination
Answer: Currently there are no engineered containment systems in place.

2/19/2008 – Per Russ Hay (Landfill Manager): In pending permit, engineered containment systems specified.

25. General description of final cover system
Answer: For closure, a compacted layer of subsoil, or a combination of materials, at least 2 ft. thick will be constructed over the refuse or intermediate cover already in place. This compacted layer will be covered with 18 in. including soil for frost protection and 6 in. of topsoil, graded and revegetated to prevent erosion. Minimum permeability of 1 x 10^{-5} cm/sec.

Waste Stream

For each of the waste streams listed below, identify:

- waste acceptance rate (tons, cubic yards, or number) per year, and describe basis of estimate
- how each waste stream is managed … examples: disposed on-site, transferred off-site, composted, stockpiled for recycling
- If a waste stream is not segregated from your incoming MSW waste stream, enter "***Not Segregated***" as your answer
- If waste stream is not accepted at your facility, enter "***Not Accepted***" as your answer

26. Municipal Solid Waste
Answer: 2,000 tons per yr. Tons per day x days of operation in 1 yr. Disposed on site.

7/29/2008 – Per Russ Hay (Landfill Manager): 15 tons/day disposed. Based on about 7 months of scale data beginning July 2007. Corrected waste acceptance rate (210 operating days) is 3,150 tons/yr.

27. Construction/Demolition Waste
Answer: 500 tons per yr. Tons per day x days of operation in 1 yr. Disposed on site.

28. Industrial Waste (identify unique sources)
Answer: Not Accepted

29. Tires
Answer: Not Accepted

7/29/2008 – Per Russ Hay (Landfill Manager): Tires and batteries are accepted one day per year at no charge in coordination with County Health Department sponsored collection day (Saturday in May). These items are picked up by the county and are not disposed on site.

30. Petroleum Contaminated Soils
Answer: Not Accepted

31. Non-Friable Asbestos
Answer: Not segregated from C/D waste. Disposed on site.

32. Friable Asbestos
Answer: Not Accepted

33. Dead Animals
Answer: Not segregated from municipal solid waste. Disposed on site.

2/19/08 – Per Russ Hay (Landfill Manager): dead animals are composted on site and the compost is used for daily cover.

34. Infectious Waste
Answer: Not Accepted

35. Concrete
Answer: Not segregated from C/D waste

36. Asphalt
Answer: Not segregated from C/D waste

37. Yard Wastes (grass, leaves, brush)
Answer: Composted

2/19/08 – Per Russ Hay (Landfill Manager): yard wastes are composted on site and the compost is used for daily cover.
7/29/08 – Per Russ Hay (Landfill Manager): Minor amendment letter was sent to WDEQ in the previous year to allow compost to be used as daily cover material

38. Clean Wood
Answer: Not segregated

39. Scrap Metal
Answer: Stockpiled for recycling

40. Other Significant Waste Streams (describe)
Answer: NA

Recyclable Commodities

For each recyclable commodity listed below, identify:

- location of collection facility (on-site or off-site)
- estimated storage capacity (square footage or volume)
- estimated quantity (tons) processed per year
- market (operator name, location)
- if a recycling service is not offered, enter "***No Service***" as your answer

41. Lead-Acid Batteries
Answer: No Service

2/19/08 – Per Russ Hay (Landfill Manager): Tires and batteries are accepted one day per year at no charge.

42. Used Oil
Answer: No Service

43. Anti Freeze
Answer: No Service

44. Paint
Answer: No Service

45. Pesticides
Answer: No Service

46. Electronic Waste
Answer: No Service

47. Household/Conditionally-Exempt Hazardous Waste
Answer: No Service

48. Newspaper
Answer: No Service

49. Magazines
Answer: No Service

50. Office Paper
Answer: No Service

51. Cardboard
Answer: No Service

52. Plastics (identify types)
Answer: No Service

53. Glass
Answer: No Service

54. Aluminum Cans
Answer: No Service

55. Steel Cans
Answer: No Service

56. Other Recycling Commodities (describe)
Answer: White goods and metal. Picked up by Preston Harer, Pine Bluffs, WY, or Wyoming Salvage or some other contractor.

7/29/08 – Per Russ Hay (Landfill Manager): Stockpile 10 tons per year or more. Receipts estimated to be about $500/yr.

Facility Structures

For each structure listed below, identify:

- construction date & cost
- square footage
- any special uses or features
- if a structure is not present at your facility, enter "***Not Present Onsite***" as your answer
- if a structure is present at an off-site location, identify the location, operator name, and operator phone

57. Scales
Answer: 7/15/2007, cost $58,758.00, 11 ft. x 70 ft.

58. Gate Attendant Office
Answer: 1994, $28,184.31, 720 square ft.

59. Transfer Station
Answer: Not Present Onsite

60. Shop/Equipment Storage
Answer: 1983, cost unknown, 2,400 square ft.

2/19/2008 – Per Russ Hay (Landfill Manager): The cost for this structure is included in 1993 purchase cost of 46 acres. Refer to survey question #90 for additional information.

61. Composting Facility
Answer: 5,000 square ft. Open area.

62. Recycling Center
Answer: Not Present Onsite

63. Other Structures (describe)
Answer: Storage sheds, free, recycled. Square ft. N/A.

Document – ELCSWDD Asset Summary, Period ended 6/30/08

Facility Equipment

For each piece of equipment listed below, identify:

- make and model
- estimated hours of operation per day or per week
- purchase date and price, or lease period and price
- remaining useful life (years)

64. Compactor
Answer:

65. Dozer
Answer:

66. Scraper
Answer: Cat 615 C II. 10 hours per week. Purchased 6/28/2004. Price $301,621.00. 16 yrs RUL.

67. Loader
Answer: Cat 963 Track Loader. 5 hours per week. Purchased 5/8/1985. Price $129,373.00. 10 yrs RUL.

544 H John Deere Wheel Loader. 10 hours per week. Purchased 3/2/2000. Price $120,859.00. 8 yrs. RUL.

68. Grader
Answer: Cat 140 H Motor Grader. 10 hours per week. Purchased 10/11/2006. Price $182,836. 9 yrs RUL.

69. Dump Truck … include description of type (end, belly, or side)
Answer: 1983 Auto Car End Dump. 1 hour per week. Purchased 1/17/2005. Price $11,005.00. RUL N/A.

70. Special Use … examples: wind rower, baler, chipper, grinder
Answer:

71. Other Equipment (describe)
Answer: John Deere 5210 Tractor used for mowing and snow removal. Average 1 hour per week. Purchased 3/27/1998. Price $16,038.82. 20 yrs RUL.

Environmental Monitoring Program

Groundwater

72. Number of Wells Sampled
Answer: 7

2/19/2008 – Per Russ Hay (Landfill Manager): One new well will be installed in 2013 to monitor the new cell. One new well will be installed to determine the flow of water from the new cell in 2009. 2007 cost of $18,000 added to the operating costs for each well.

With these two additional wells the total number of wells considered in this cost analysis is 9 wells.

73. Sampling Frequency
Answer: Semi-annually

74. Sampling Parameters (routine, baseline, Appendix A, Appendix B)
Answer: Baseline

75. Volatile Organic Compounds Detected? (yes/no)
Answer: Not sampled

76. Statistically Significant Increases Confirmed? (yes/no … list relevant parameters)
Answer: Yes. Last sampling indicates an increase in total organic carbons.

2/19/2008 – Per Russ Hay (Landfill Manager): Data is from 1998 well which may be plugged and abandoned, based on pending permit.

77. Groundwater Protection Standards Exceeded? (yes/no … list relevant parameters)
Answer: No.

Methane

78. Number of Wells/Points Sampled
Answer: 8 points sampled

79. Sampling Frequency
Answer: Semi-annually

80. Methane detected? (yes/no)
Answer: No

81. Has methane ever been detected levels that are equal to or greater than 25% of the Lower Explosive Limit at the boundary of your facility? (yes/no)
Answer: No

Other

82. Other Monitoring Systems (if present, describe)
Answer:

Other Facility Information

83. Title and general description of work for each full- and part-time position
Answer: Manager/operator: oversees daily operations of landfill and deals with the WDEQ/SHWD and other government entities. Full time operator: duties include monitoring gate and equipment operations. Full time Secretary/Office Manager: performs daily duties of the office. Part-time gate help performs duties assigned by manger or operator.

84. In-place density of municipal solid waste (describe basis of estimate)
Answer: 300 pounds/cubic yard (Based on pounds per square inch compaction rate of equipment used).

85. In-place density of construction/demolition waste (describe basis of estimate)
Answer: 600 pounds/cubic yard (Based on pounds per square inch compaction rate of equipment used)

86. Ratio of waste to daily cover (describe basis of estimate)
Answer: 4:1 cubic yards of waste versus cubic yards of cover used.

87. Describe recent or pending regulatory violations or issues
Answer: Nothing at this time.

88. Describe recent or pending operational issues
Answer: Currently waiting for permit renewal from WDEQ/SHWD.

4/21/08 – Per Russ Hay (Landfill Manager): – recent cell excavation considered current continuous mining; included within current operating costs since not contracted out

Financial Information

Provide copies of the following documents:

89. Fee Schedule
Answer:

2/19/2008 – Per Russ Hay (Landfill Manager): Albin, Pine Bluffs, and Burns residents pay mil levy (through property tax) or utility fee to use landfill. Carpenter and Hillsdale are unincorporated. The bylaws of the district prohibit receipt of waste from outside of the district.

Document – Fee Schedule for Eastern Laramie Co. Solid Waste Disposal District (1/1/2008) – Including household and contractor rates.

90. Development Costs …examples: planning and/or siting studies, purchase of land, initial design/permitting costs … include detailed description of date, purpose, and amount

2/19/2008 – Per Russ Hay (Landfill Manager): Between 1983 and 1993, the disposal district leased the land with final purchase in 1993. The final purchase of current land included structures, fencing, and initial development costs for the original 46 acres plus the lateral expansion for a total of 159.8 acres.

91. Operating Budget … include current fiscal year, and previous four years (if available), with full detail of revenues and expenditures
Answer:

6/13/2008 – Per Nancy McDonald (Assistant Secretary Treasurer): Question: What is the "sales of goods or services" in the 2006-2007 budget totaling $37,073? Response: These are gate or tipping fees

Document – Schedule of Revenues, Expenditures and Changes in Fund Balance, Budget and Actual (Year ending 6/30/2006).

Document – Budget Report for Fiscal Year 2005/2006.

Document – Budget Report for Fiscal Year 2006/2007.

Document – Budget Report for Fiscal Year 2007/2008. Information from "Prior Year Actual" column used in FCA.

92. Non-Routine Capital Expenditures … examples: land, equipment, structures, monitoring systems … include detailed description of project, date, cost and funding source for both historical and anticipated expenditures
Answer:

Document – Asset Summary, Federal Tax Basis (2/7/2008) – Includes data on land, buildings, equipment, and office.

93. Contract Services … include detailed description of contract services associated with the routine facility operations, such as routine compaction and covering, trench excavation, composting, waste hauling, etc.
Answer:

Permitting costs estimated from known Type II permit expenses = $15,000

94. Financial Assurance … include copies of most recent work sheets for calculating your closure and post-closure premiums for the State Guarantee Trust Account
Answer:

Document – Wyoming State Guarantee Trust Account for Sanitary Landfills, Annual Premium Calculation – Burns Landfill (SHWD File #10.330) (Calculated 1/1/2006) – Includes premium calculation work sheet.

95. Other Relevant Documents … examples: audits, customer surveys, planning studies
Answer:

96. Other Relevant Information … examples: availability or suitability of adjacent land for lateral expansion, local opposition to existing operations
Answer: No further lateral expansion beyond what's requested in the permit renewal.

APPENDIX B

FULL COST ACCOUNTING WORKSHEETS
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL

APPENDIX B.
WORKSHEET 1. 2007 LIFE-CYCLE COSTS
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

General Facility Information	
Current year	2007
Beginning of facility operating life (year)	1983
Estimated end of facility operating life (year)	2039
Estimated length of post-closure period (years)	30
Estimated annual waste acceptance rate (tons/year) for 2007	3,650
Estimated average annual rate of inflation (i %)	3%

Costs EXCLUDING **the sale of commodities**

Phase	Annual Cost	Cost/Ton
Development (Worksheet 2)	$1,684	$0
Operating (Worksheet 3)	$224,723	$62
Closure and Post-Closure (Worksheet 4)	$12,268	$3
Total Life-Cycle Costs	$238,674	$65

Costs INCLUDING **the sale of commodities**

Phase	Annual Cost	Cost/Ton
Development (Worksheet 2)	$1,684	$0
Operating (Worksheets 3, 5)	$224,223	$61
Closure and Post-Closure (Worksheet 4)	$12,268	$3
Total Life-Cycle Costs	$238,174	$65

APPENDIX B.
WORKSHEET 2. 2007 DEVELOPMENT COSTS
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Item	Original Cost[1]	Year Incurred	Annual Cost[2]	Basis	Data Source/Rationale
Planning Studies		1982	$0		
Site Investigations		1982	$0		
Land Acquisition		1982	$0		
Land Purchase	$17,829	1991	$713	ACT	Survey #90
Land Purchase	$24,023	1992	$971	ACT	Survey #90
Facility Design/Permitting		1982	$0		
External Infrastructure		1982	$0		
Construction (Pre-Operation)		1982	$0		
Public Education & Outreach		1982	$0		
Management/Oversight		1982	$0		
Other		1982	$0		
Subtotal			$1,684		

NOTES

1 Value in year incurred

2 Calculated by straight line depreciation of original cost over the entire operating life

ABBREVIATIONS

Basis = ACT = Actual cost, based on specific data provided by the operator

Basis = APP = Approximate cost, based on approximation of data provided by the operator

Basis = EST = Estimated cost, based on regional data and/or professional judgment

APPENDIX B.
WORKSHEET 3. 2007 OPERATING COSTS
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Item	Original Cost[1]	Year Incurred	Useful Life[2, 3] (years)	Salvage Value[4, 5]	Annual Cost[6, 7]	Basis	Data Source/Rationale
Personnel							
Landfill operators Salaries & Wages	$63,483	2007	1	0	$63,483	ACT	Survey #91
Secretary	$21,633	2007	1	0	$21,633	ACT	Survey #91
Benefits							
FICA	$6,512	2007	1	0	$6,512	ACT	Survey #91
Worker's Compensation	$1,464	2007	1	0	$1,464	ACT	Survey #91
Group Insurance	$2,207	2007	1	0	$2,207	ACT	Survey #91
Retirement	$9,062	2007	1	0	$9,062	ACT	Survey #91
Miscellaneous							
Training/Certification	$500	2007	1	0	$500	ACT	Survey #91
Mileage	$1,017	2007	1	0	$1,017	ACT	Survey #91
Accounting fees	$429	2007	1	0	$429	ACT	Survey #91
Equipment	$7,497	Varies	5	0	$1,637	ACT	Survey #92
Disposable Supplies	$4,669	2007	1	0	$4,669	ACT	Survey #91
Advertising/Legal Fees	$150	2007	1	0	$150	ACT	Survey #91
Other Insurance	$7,398	2007	1	0	$7,398	ACT	Survey #91
Contract Services							
Environmental Monitoring	$1,787	2007	1	0	$1,787	ACT	Survey #91
Utilities	$5,901	2007	1	0	$5,901	ACT	Survey #91
Vehicles (On-Road)							
Chevrolet Pickup	$20,600	2006	6	1,030	$3,613	ACT	Survey #57 and #92, useful life from asset summary
Fuel	$9,417	2007	1	0	$9,417	ACT	Survey #91
Equipment (Off-Road)							
Scales (initial purchase)	$58,758	2007	7	2,938	$8,959	ACT	Survey #57 and #92; useful life from asset summary
Cat 963 Track Loader	$129,373	1985	42	6,469	$5,187	ACT	Survey #67 and #92; remaining life left - 10 y
544H Wheel Loader	$120,859	2000	15	6,043	$9,618	ACT	Survey #67 and #92; remaining life left - 8 y
Auto Car end dump truck	$11,000	2001	13	550	$982	ACT	Survey #57 and #92; useful life from asset summary
JD Tractor for mowing/snow	$16,039	1998	29	802	$794	ACT	Survey #71 and #92; remaining life left - 20 y
Scraper	$301,621	2004	19	15,081	$20,004	ACT	Survey #66 and #92; remaining life left - 16 y
Grader	$182,836	2006	20	9,142	$11,675	ACT	Survey #68 and #92; remaining life left - 19 y
Maintenance	$10,019	2007	1	0	$10,019	ACT	Survey #91
Shop supplies and freon removal	$1,664	2007	1	0	$1,664	ACT	Survey #91
Structures							
Gate attendance office	$28,184	1994	40	0	$1,234	ACT	Survey #92; Useful life default
Building 1	$4,175	1993	40	0	$183	ACT	Survey #92; Useful life default
Quonset Hut and door	$4,263	1996	40	0	$287	ACT	Survey #92; Useful life default
Construction							
Internal Fencing/Signs	$7,330	1995	27	0	$400	ACT	Survey #92
Routine Operation & Maintenance							
Special Wastes							
Environmental Monitoring							
Environmental Monitoring	$9,900	2007	1	0	$9,900	EST	Worksheet #6 calcs, based on current 7 wells and 2 proposed wells

APPENDIX B.
WORKSHEET 3. 2007 OPERATING COSTS
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Item	Original Cost[1]	Year Incurred	Useful Life[2, 3] (years)	Salvage Value[4, 5]	Annual Cost[6, 7]	Basis	Data Source/Rationale
Non-Routine							
Permitting	$15,000	2007	32	0	$736	ACT	Survey #93
Environmental Monitoring System New Cell well	$18,000	2007	32	0	$883	ACT	Survey #72
Environmental Monitoring System boundary well	$18,000	2007	32	0	$883	ACT	Survey #72
Other							
State Closure Premium	$175	2007	1	0	$175	ACT	1/1/2006 State Guarantee Trust Account worksheet
State Post-Closure Premium	$260	2007	1	0	$260	ACT	1/1/2006 State Guarantee Trust Account worksheet
Subtotal					$224,723		

NOTES
1 Value in year incurred
2 Each item is replaced by an identical item of equal value at the end of the useful life, unless noted otherwise
3 Useful life of non-routine items extend through the remainder of the operating life
4 Salvage value for each item is assumed to approach "0", unless noted otherwise
5 Salvage value for vehicles and equipment is assumed to be 5% of the original cost, unless noted otherwise
6 If useful life = 1 year, then annual cost equals original cost
7 If useful life >1 year, then annual cost calculated by straight line depreciation of original cost (minus salvage value) over the useful life

ABBREVIATIONS
Basis = ACT = Actual cost, based on specific data provided by the operator
Basis = APP = Approximate cost, based on approximation of data provided by the operator
Basis = EST = Estimated cost, based on regional data and/or professional judgment

APPENDIX B.
WORKSHEET 4. 2007 CLOSURE AND POST-CLOSURE COSTS
EASTERN LARAMIE COUNTY DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Item	Duration (years)	Current Cost[1]	Future Cost[2]	Annual Closure Cost[3]	Annual Post-Closure Cost[4]	Basis
Solid Waste Guideline #12 Closure Costs						
Reclaim Disturbed Areas	1	$290,541	$748,172	$5,312	$0	EST
Demolish Buildings	1	$7,344	$18,912	$134	$0	EST
Install Groundwater Wells	1	$0	$0	$0	$0	EST
Install Methane Wells	1	$0	$0	$0	$0	EST
Manage Stored Wastes	1	$0	$0	$0	$0	EST
Install Perimeter Fence	1	$0	$0	$0	$0	EST
Conduct Final Site Survey	1	$3,950	$10,172	$72	$0	EST
Construct Surface Water Structures	1	$54,603	$140,608	$998	$0	EST
Closure Certification	1	$5,000	$12,876	$91	$0	EST
Solid Waste Guideline #12 Post-Closure Costs						
Conduct Inspections (annual, per year)	30	$1,000	$2,575	$0	$358	EST
Conduct Groundwater Monitoring (Type I & II, annual, per year)	30	$9,900	$25,493	$0	$3,541	EST
Statistical Analysis (Type I, annual, per year)	30	$0	$0	$0	$0	EST
Conduct Methane Monitoring (annual, per year)	30	$2,000	$5,150	$0	$715	EST
Maintain Perimeter Fence (per year)	30	$613	$1,579	$0	$219	EST
Remove Perimeter Fence (at conclusion of post-closure period)	1	$9,637	$60,235	$0	$176	EST
Maintain Surface Water Structures (per year)	30	$1,820	$4,687	$0	$651	EST
Subtotals				$6,608	$5,660	

NOTES
1 Value in current year
2 Value at closure
3 If duration = 1 year, then annual cost calculated by straight line depreciation of future cost over the operating life
4 If duration > 1 year, then annual cost calculated by straight line depreciation of future cost (multiplied by duration) over the operating life

ABBREVIATIONS
Basis = ACT = Actual cost, based on specific data provided by the operator
Basis = APP = Approximate cost, based on approximation of data provided by the operator
Basis = EST = Estimated cost, based on regional data and/or professional judgment

APPENDIX B.
WORKSHEET 5. 2007 REVENUES
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Source	Original Revenue[1]	Year Incurred	Term	Annual Revenue[2, 3]	Basis	Data Source/Rationale
Routine						
County Aid (mil levy)	$163,961	2007	1	$163,961	ACT	Survey #91
Gate Fees	$37,698	2007	1	$37,698	ACT	Survey #91
Other revenue (delinquent tax, car tax)	$37,073	2007	1	$37,073	ACT	Survey #91
Interest	$9,708	2007	1	$9,708	ACT	Survey #91
Closure Premium Refund	$161	2039	48	$2	EST	Solid Waste Guideline #12 Worksheet ... 3% of Grand Total Closure Cost x 90% (refund)
Post-Closure Premium Refund	$239	2069	78	$1	EST	Solid Waste Guideline #12 Worksheet ... 3% of Grand Total Post Closure Cost x 90% (refund)
Subtotal				$248,442		
Sale of Commodities						
Recyclable metals (including white goods, scrap metal)		10	1	$500	APP	Survey #39, #56
Subtotal				$500		
Subtotal for All Revenues				$248,942		

NOTES
1 Value in year incurred
2 If term = 1, then annual revenue equals original revenue
3 If term > 1, then annual revenue is calculated by straight line depreciation of original revenue over the remainder of the operating life

ABBREVIATIONS
Basis = ACT = Actual cost, based on specific data provided by the operator
Basis = APP = Approximate cost, based on approximation of data provided by the operator
Basis = EST = Estimated cost, based on regional data and/or professional judgment

APPENDIX B.
WORKSHEET 6. 2007 CLOSURE/POST-CLOSURE COST GUIDELINES
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Average Wyoming Localization Factor (ECHOS 2006)	0.79

Description	Assembly[1]	Line Item[1]	Unit	Cost/Unit (National)	Cost/Unit (Wyoming)	Unit	Cost/Unit	Quantity	Subtotal	Total
Closure / Reclaim Disturbed Area										**$290,541**
24" Barrier Layer			**CY**	**$6.42**	**$5.07**	**ACRE**	**$16,367**	**10**	**$163,667**	
Soil testing, Atterberg limits	17 03 0429	01418 4405	EA	$0.15						
Grain size ASTM D421	17 03 0429	01418 4605	EA	$0.13						
Soil Density Test, Nuclear ASTM D2922-71	17 03 0429	01418 4736	EA	$0.35						
Moisture Content	17 03 0429	01418 4751	EA	$0.42						
Scraper, 15 CY, 621, Grubing, Haul 1 Mile & Spoil	17 01 0516	02109 1100	CY	$3.00						
Compaction, Sheeps Foot, 8" lifts	17 03 0429	02220 5660	CY	$1.36						
Compaction Water, $0.005/gal	17 03 0429	02223 1001	CY	$1.01						
24" Frost Barrier			**CY**	**$3.00**	**$2.37**	**ACRE**	**$7,648**	**10**	**$76,480**	
Scraper, 15 CY, 621, Grubing, Haul 1 Mile & Spoil	17 01 0516	02109 1100	CY	$3.00						
6" Topsoil Layer			**CY**	**$3.00**	**$2.37**	**ACRE**	**$1,913**	**10**	**$19,126**	
Scraper, 15 CY, 621, Grubing, Haul 1 Mile & Spoil	17 01 0516	02109 1100	CY	$3.00						
Seeding			**ACRE**	**$3,958**	**$3,127**	**ACRE**	**$3,127**	**10**	**$31,268**	
Mechanical Seeding, 50 Lb/MSY	18 05 0402	02932 0300	CSY	$2,064						
Large Power Mulcher, Oat Straw, 1" Deep	18 05 0402	02830 2005	ACRE	$1,894						
Closure / Demolish Buildings										**$7,344**
Demolish Buildings			**SF**	**$2.80**	**$2.21**	**SF**	**$2.21**	**3,320**	**$7,344**	
Steel, No Disposal, Single-Level Building	17 02 0105	02049 8000	CF	$0.14						
Closure / Install Groundwater Wells										**$0**
Permitting, Installation, Surveying, Report			**EA**	**$12,500**	**$12,500**	**EA**	**$12,500**	**0**	**$0**	
2" PVC, average 75-ft deep	General Estimate[2]		EA	$12,500						
Closure / Install Methane Wells										**$0**
Permitting, Installation, Surveying, Report			**EA**	**$1,000**	**$1,000**	**EA**	**$1,000**	**0**	**$0**	
1" PVC probe, average 10-ft deep	General Estimate[2]		EA	$1,000						
Closure / Manage Stored Wastes										**$0**
On-Site Disposal			**CY**	**$40**	**$40**	**CY**	**$40**	**0**	**$0**	
Wastes that may be managed as MSW	General Estimate[2]		CY	$40						

APPENDIX B.
WORKSHEET 6. 2007 CLOSURE/POST-CLOSURE COST GUIDELINES
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Average Wyoming Localization Factor (ECHOS 2006)	0.79

Description	Assembly[1]	Line Item[1]	Unit	Cost/Unit (National)	Cost/Unit (Wyoming)	Unit	Cost/Unit	Quantity	Subtotal	Total
Closure / Install Perimeter Fence										**$0**
Boundary Fence			**LF**	**$6.72**	**$5.31**	**LF**	**$5.31**	**0**	**$0**	
5' High, 12 Gauge Galvanized Steel, 2"x4" Mesh	18 04 0105	02712 2102	LF	$6.72						
Closure / Conduct Final Site Survey										**$3,950**
Topography, Re-establish Corners			**EA**	**$5,000**	**$3,950**	**EA**	**$3,950**	**1**	**$3,950**	
Data Collection, CADD	General Estimate[2]		EA	$5,000						
Closure / Construct Surface Water Structures										**$54,603**
10' Wide Grass Drainage Swale			**LF**	**$4.96**	**$3.92**	**EA**	**$4**	**13,935**	**$54,603**	
Rough Grade Small Area w/Dozer 75 HP	33 05 0801	02224 7040	CY	$0.78						
Remove Topsoil, 6" Deep, Stockpile on Site	33 05 0801	02241 0020	CY	$1.81						
Spread Topsoil by Loader from Stockpile	33 05 0801	02241 0400	CY	$1.46						
Large Power Mulcher, Oat Straw, 1" Deep	33 05 0801	02830 2005	ACRE	$0.44						
Mechanical Seeding, 50 LB/MSY	33 05 0801	02932 0300	CSY	$0.47						
Closure / Certification										**$5,000**
Closure Certification			**EA**	**$5,000**	**$5,000**	**EA**	**$5,000**	**1**	**$5,000**	
Inspection, Report (use construction QA/QC data)	General Estimate[2]		EA	$5,000						
Post-Closure / Conduct Inspection (annual)										**$1,000**
Inspection, per site, per year			**EA**	**$1,000**	**$1,000**	**EA**	**$1,000**	**1**	**$1,000**	
Inspection, Report, 1 event	General Estimate[2]		EA	$1,000						
Post-Closure / Groundwater Monitoring - Type I & II (annual)										**$9,900**
Groundwater Monitoring, per well, per year			**EA**	**$1,100**	**$1,100**	**EA**	**$1,100**	**9**	**$9,900**	
Baseline & Appendix A, Report, 1 event	General Estimate[2]		EA	$1,100						
Post-Closure / Groundwater Statistics - Type I (annual)										**$0**
Statistical Analysis			**EA**	**$2,500**	**$2,500**	**EA**	**$2,500**	**0**	**$0**	
Report, 1 event	General Estimate[2]		EA	$2,500						
Post-Closure / Methane Monitoring (annual)										**$2,000**
Methane Monitoring, per well, per year			**EA**	**$250**	**$250**	**EA**	**$250**	**8**	**$2,000**	
LEL, Report, 1 event	General Estimate[2]		EA	$250						

APPENDIX B.
WORKSHEET 6. 2007 CLOSURE/POST-CLOSURE COST GUIDELINES
EASTERN LARAMIE COUNTY SOLID WASTE DISPOSAL DISTRICT LANDFILL, BURNS, WYOMING

Average Wyoming Localization Factor (ECHOS 2006)	0.79

Description	Assembly[1]	Line Item[1]	Unit	Cost/Unit (National)	Cost/Unit (Wyoming)	Unit	Cost/Unit	Quantity	Subtotal	Total
Post-Closure / Maintain Perimeter Fence										**$613**
Boundary Fence			**LF**	**$0.11**	**$0.09**	**LF**	**$0.09**	**6,815**	**$613**	
Rebuild 1/30th of total LF each year	General Estimate[2]		LF	$0.11						
Post-Closure / Remove Perimeter Fence (at end of post-closure period)										**$9,637**
Remove Chain Link Fence			**LF**	**$1.79**	**$1.41**	**LF**	**$1.41**	**6,815**	**$9,637**	
Remove & Reuse Chain Link Fence	17 02 0225	02046 0752	LF	$1.79						
Post-Closure / Maintain Surface Water Structures (annual)										**$1,820**
10' Wide Grass Drainage Swale			**LF**	**$0.17**	**$0.13**	**LF**	**$0.13**	**13,935**	**$1,820**	
Rebuild 1/30th of total LF each year	33 05 0801		LF	$0.17						

NOTES
1 Costs based on R.S. Means Environmental Remediation Cost Data 2006, unless noted otherwise
2 Costs based on general estimate of regional data

APPENDIX C

USEFUL LIFE GUIDELINES

APPENDIX C.
USEFUL LIFE GUIDELINES

One-Time Costs	Balance of Facility Life	
Construction		
Cell Excavation	Life of Cell	
Cell Engineered Containment	Life of Cell	
Vehicles (On-Road)	3 to 12	8
Cars/Trucks[1]	3 to 8	6
Tractor/Trailers	5 to 10	8
Equipment (Off-Road)[2]	3 to 25	9
Stationary Baler		20
Backhoe	5 to 10	9
Excavator	5 to 10	9
Loader	5 to 10	9
Dozer	5 to 10	9
Compactor	5 to 10	9
Scraper	5 to 10	9
Grader	5 to 10	9
Alternative Daily Cover Applicator		9
Tub Grinder		9
Wind Rower		9
Scales		30
Scale Load Cells		7
Structures	20 to 50	40
Offices	20 to 50	40
Recycling Centers	20 to 50	40
Shops, Equipment Storage	20 to 50	30
Transfer Stations	20 to 50	30
Miscellaneous		
Furniture	5 to 15	10
Computers	3 to 10	5