Exhibit B

Spokane County Comprehensive Solid Waste Management Plan Update, 1984

Spokane County Utilities Department

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EXECUTIVE SUMMARY

A great number of changes have taken place since Spokane County developed its first solid waste management plan in 1971. Regulations governing solid waste have become more comprehensive and rigorous and new programs and technologies for handling solid waste have been developed. Likewise, public awareness of solid waste issues has increased significantly.

The purpose of this plan update is to assess current solid waste handling and disposal practices in Spokane County and recommend actions for managing solid waste in the future. The plan update was developed over a period of many months and included a detailed review of technical materials by the Solid Waste Advisory Committee. All incorporated areas within the County, with the exception of the Town of Rockford, adopted the plan update. The Town of Rockford plans to develop its own plan for integration into this one, as required by RCW 70.95.

The plan update is based on the following overall goals:

Development of solid waste handling practices that protect the natural and human environment of Spokane County.

Promotion of economically responsible means of solid waste management that recognize the need for service to the citizens of the County, long-range capital improvements and the costs of environmental protection.

Implementation of solid waste management processes and techniques that reduce the waste stream and minimize the amount of land required for future disposal.

Recognition of the importance of materials recovery as a means of reducing the amount of solid waste that must be disposed while, at the same time, conserving natural resources.

An initial step in the planning process was to evaluate the various components of the existing solid waste management system. The Spokane Municipal Waste to Energy Project report completed in 1983 served as a significant source of information for the study. The three primary organizations handling solid waste activities in Spokane County are the City of Spokane Utilities Department, the Spokane County Utilities Department and the Spokane County Health District. The County Health District is responsible for issuing disposal permits, and enforcement, development and administration of regulations regarding solid waste. Five landfills are presently operating in Spokane County. Two are operated by the County Utilities Department: Mica, located southeast of the City with direct access from the Valley, and Colbert which is located in the northern part of the County. The City of Spokane operates Northside Landfill on the northwest edge of the City, and Southside Landfill located one mile south of the city. A fifth landfill, Marshall, is privately owned and operated and serves the southwest portion of the County. An average of 734 tons of solid waste is disposed of daily at these landfills.

The plan update summarizes the problems and needs associated with Solid Waste Management in the County. Deficiences and future constraints to solid waste management were categorized as administrative organization needs, collection and transfer problems, disposal issues and waste stream management. The need for better coordination of disposal operations and fee structures were cited as administrative areas where improvement is desireable. Generally collection services were described as good, although the need for a facility to collect small quantities of hazardous wastes was identified.

After evaluating a series of solid waste management alternatives and forecasts of solid waste generation, a set of recommendations was formulated. The recommendations reflect the fact that at some point within the next ten years all the existing landfills in the County will reach or near capacity and new facilities for solid waste disposal will be required. Based on both cost and environmental considerations, the plan update recommends that a waste-to-energy facility be developed as a major element in the County-wide solid waste management system. A regional landfill with a five million cubic yard capacity

would be required to come on line by 1995 since ash and bypass materials must be landfilled. This is preferable to a regional landfill as the only method of disposal. As the only disposal site, a regional landfill would require a capacity of 16 million yards to meet the County's needs for 20 years. In order to effectively implement a waste-to-energy facility it is recommended that a County-wide flow control ordinance be adopted to ensure that solid waste is disposed at the most appropriate facility. Recyclable materials should be exempt from the flow control ordinance.

The plan update also includes a 20-year capital improvement strategy that schedules the develoment of the waste-to-energy facility, regional landfill and transfer stations as well as the closure of existing landfills. According to estimates developed by the City of Spokane, the cost of the recommended new system (transfer stations, waste-to-energy facility and regional landfill) could be as low as $37.00 per ton (in 1988 dollars) if energy generated by the waste-to-energy facility can be sold in the most efficient manner. By comparison, the cost of a major regional landfill and related transfer stations is estimated to cost approximately $43.00 per ton.

Summary of Recommendations

The following recommendations are discussed in the plan update:

A. ADMINISTRATIVE ORGANIZATION

A coordinated regional approach to County-wide solid waste management should be developed in Spokane County

Interlocal agreements are recommended as the most feasible legal avenue for funding, developing and operating new solid waste facilities in the County

A Solid Waste Advisory Committee (SWAC) should be established on a permanent basis to provide a forum for discussing solid waste management issues

It is recommended that a County-wide flow control ordinance be adopted

It is recommended that the flow control ordinance allow recycling as a preferred alternative to disposal of solid waste

The County as a whole should adopt a nuisance control ordinance similar to that used by the City of Spokane

Zoning ordinances of both incorporated cities and towns and Spokane County should address a broader range of solid waste facilities

An evaluation of manpower and training needs with an assessment of funding requirements should be undertaken by the Spokane County Health District, Spokane County Utilities and City of Spokane Utilities Department

Funding strategies for solid waste capital improvements should include sources such as state (particularly Referendum 39) and federal monies, bonding programs and private capital in addition to tipping fees and County and municipal general funds

Operating expenses for solid waste collection should continue to be supported from fees collected for the service

With the exception of collection, solid waste programs should depend on tipping fees to make up the difference between costs and other revenue sources

State, federal and private funding should be sought to assist in supporting solid waste public information programs.

B. COLLECTION

Expansion of the wasteshed to areas outside Spokane County is recommended in situations in which increasing the waste stream will result in increased cost effectiveness of disposal operations

Expansion of the wasteshed to areas outside Spokane County is recommended if it will result in environmental benefits to the County and the region

It is recommended that the County-wide solid waste management system cooperate with other local governments by accepting solid waste for disposal when short-term operational or capacity problems arise

The existing collection system should be maintained for collection of mixed municipal solid waste

A feasibility study should be conducted to determine the extent and pertinences necessary to establish a program to pick up, store, and transfer small quantities of unregulated hazardous wastes.

C. TRANSFER AND DISPOSAL

The Preferred System Recommendation

- Waste-to-energy facility
- North County transfer station
- City of Spokane transfer station
- West County transfer station
- 5 million cubic yard regional landfill

The Alternative System Recommendation

- 16 million cubic yard regional landfill

- o East County transfer station
- o North County transfer station
- o City of Spokane transfer station

Septic tank pumpings disposal is recommended to be limited to: 1) wastewater treatment plants, 2) approved drying beds facilities, or 3) other regulatory approved sites

The City of Spokane sludge utilization program should be encouraged to continue

The County-wide solid waste management system, in conjunction with Kaiser Aluminum and Chemical Corporation, should explore the feasibility of developing a new disposal site for dross to be used after Mica Landfill reaches capacity

D. OTHER WASTE MANAGEMENT PROGRAMS

A materials recycling policy should be developed

Recycling efforts should be encouraged through the use of various public awareness programs sponsored by local government

Public awareness programs focusing on educating the public regarding the proper handling and disposal of hazardous wastes in the home or office should also be developed by a local government agency

Programs to recycle automobile oil should be encouraged

The County-wide solid waste management system should cooperate with and encourage groups interested in developing curbside collection programs

Recycling bins, with prominent signs, should be located at all disposal facilities in the County, including landfills, transfer stations, drop boxes, and waste-to-energy facilities

The County-wide solid waste program should work with industrial and commercial establishments and groups to identify specific recycling opportunities

E. FACILITY SITING

Fatal flaw criteria shoiuld be used to eliminate sites with characteristics which cannot be mitigated for landfill use

Other siting criteria are recommended for use in evaluating sites

Limit consideration for siting future landfills to the south of Spokane River, west of Hangman Creek area and to areas of outcrop of granite or other pre-tertiary metamorphic basement rocks

Limit expansion of boundaries of existing landfills to where geological features will trap leachate above useable ground water resources

Phase out all existing landfills where geologic features do not trap leachate above useable ground water supplies

Monitor ground water at all existing landfills

Construct no solid waste transfer stations over the Spokane-Rathdrum Aquifer or in Hangman Creek Valley unless internal drainage-capture systems are an integral part of the solid waste transfer station design

Conduct detailed geologic-hydrologic studies of all potential new landfill sites

In the event of alternate sites for landfills, solid waste transfer stations, or other solid waste handling facilities, favorable geologic-hydrologic conditions for containing leachate should be one of the major factors considered in final site selection

All landfills and solid waste handling facilities must meet the same siting criterion regarding favorable geologic-hydrologic controls of leachate.

Siting criteria for transfer systems are similar to landfills

Siting criteria developed in the Waste-to-Energy Feasibility Study should be used for siting a waste-to-energy facility

particular, requires a substantial capital investment, implementation of a recommended system will be based on a number of factors such as funding sources that will affect the ultimate decision by County and City officials. For this reason, two transfer and disposal scenarios are presented in the recommendations, a preferred system and an alternative system.

RECOMMENDATION C-1. The Preferred System Recommendation. The preferred transfer and disposal system is focused on development of a waste-to-energy facility. Such a facility could provide a significant reduction in the volume of solid waste that must be landfilled and generate steam and/or electricity as by-products. Municipal solid wastes will be delivered to the facility by private citizens, transfer stations and public haulers and unloaded into a storage pit. From there it is fed to a furnace and burned. The wastes will not be processed or treated (except to remove large items such as stoves and refrigerators) so this disposal method is termed a "mass burn" process.

The hot gases produced by combustion pass through a boiler system which makes steam. The gases then pass through air pollution control equipment prior to being discharged to the atmosphere. Steam produced in the boiler is fed to a steam turbine which drives an electrical generator. A portion of the steam could be used by industry and then condensed to provide energy for their plant and return part of it for reuse. The electricity produced by the generator will be marketed.

If a waste-to-energy facility plant begins operation in 1990, it will initially process an average of approximately 602 tons per day (TPD). The overall availability of the waste-to-energy plant designed in Phase 3 of the Spokane Waste-to-Energy Project was 80 percent. During normal operation the plant would operate two or three processing trains. When one train is out of service, the other unit or units would process at capacity. The extra refuse received would be stored in the pit and, when all processing trains are again operating, the excess capacity would be used to process the backlog. If the equipment outage is for an extended period, the refuse storage pit capacity would be exceeded and waste would have to be bypassed to a landfill. The excess storage capacity

would also be used to avoid bypassing wastes to a landfill by operating at higher rates during periods of peak refuse collection. In addition, some future increases in refuse quantities could be accommodated by this extra capacity.

The plant capacity can be increased to accommodate any significant future waste stream increases by adding a third waste processing train. To minimize total plant costs, the building and peripheral systems were not sized for three waste processing trains.

In addition to a waste-to-energy facility with a maximum capacity of approximately 750 TPD, a number of other facilities comprise the system. Although facility siting has yet to be decided on, it is anticipated that three transfer stations will be required to support the system: a transfer station in north County, a transfer station possibly on the west side of the County with a capacity of approximately 100 tons per day; and a major transfer station with an approximate capacity of 250 to 400 tons per day, located in the City of Spokane. Solid waste from the eastern part of the County could be hauled directly to the waste-to-energy plant. It is recommended that the drop box be maintained at Fairfield to serve the southeastern part of the County. Final siting and sizing of transfer stations will be dependent on siting of the waste-to-energy facility.

A waste-to-energy facility that is in operation by 1990 will extend the aggregate life of the County's existing landfills through 1995. A program to site and develop a new regional landfill with a capacity of approximately five million cubic yards should be initiated by 1990 at the latest. This is intended to be a 20 year facility. Closure of any of the County's landfills sooner than is indicated by the schedule in the prior chapter will require siting of a larger regional landfill at an earlier date. An analysis of remaining capacity at Mica, Northside and Marshall should be conducted in the immediate future to refine present capacity estimates. As each of the five existing landfills in the County approaches capacity, it will be necessary to prepare closure plans and subsequently to close the facility according to accepted engineering practices.

From an environmental perspective, a waste-to-energy facility is beneficial in that it can reduce the volume that must be landfilled by as much as two-thirds. The residue, or ash, left from burning is a more desirable material to landfill than unprocessed solid waste, since the odors and gases associated with decomposition are not created. Likewise, the residue does not attract rodents, seagulls and other potential disease carriers. Leaching of many chemicals from ash tends to be inhibited as a result of changes in chemical composition that take place during incineration. The fact that energy that can be used to generate steam and or electricity as a by-product of burning solid waste is an additional benefit.

On the negative side, the combustion process creates particulate matter and gases that are a potential source of air pollution. Operational features to minimize discharges into the atmosphere must be an important element of project design.

According to the findings of the Spokane Municipal Waste-to-Energy Project, the user fee per ton (levelized in 1988 dollars) for a waste-to-energy facility can vary substantially, depending on the type of financing available. The minimum user fee results from the use of Referendum 39 funds to finance 50 percent of capital costs and general obligation or revenue bonds to finance the remainder.

RECOMMENDATION C-2. The Alternative System Recommendation. The alternative transfer and disposal system recommended for the County-wide solid waste management system is focused on the development of a single regional landfill. According to the solid waste projections, the existing landfill system in the County would reach capacity in 1993. A new regional landfill with a capacity of 16 million cubic yards should be operational by 1993. This facility is intended to have a 20-year lifespan.

As noted in the preferred system recommendation, an analysis of remaining capacity at Mica, Northside and Marshall Landfills should be conducted in the near future to refine present capacity estimates. As each of the five existing landfills in the County approaches capacity, it will be necessary to prepare closure plans and subsequently to close the facility according to accepted engineering procedures.