

**DATE:** February 5, 2015 **FILE:** 5360-20/Comox Valley

**TO:** Chair and Directors  
Comox Valley Regional District (Comox Strathcona waste management) board

**FROM:** Debra Oakman, CMA  
Chief Administrative Officer

**RE:** Award of a contract for the supply of a landfill gas flare system

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**Purpose**

To recommend the award of a contract for the supply of a landfill gas (LFG) flare system required for the Phase 1 closure of the Comox Valley waste management centre (CVWMC).

**Policy analysis**

Bylaw No. 284, being the “Comox Valley Regional District Delegation of Purchasing Authority Bylaw No. 284, 2013” requires that the board approve all contracts in excess of \$100,000.

The Phase 1 closure construction, Comox Valley Waste Management Centre which includes the installation of a landfill gas flare system, is included in the solid waste management financial plan with targeted completion in 2015.

**Executive summary**

The 2014-2018 approved financial plan is the CVRD’s spending authority between January and March 2015. This financial plan includes a capital works budget for Phase 1 closure at the Comox Valley waste management centre in the amount of \$8,250,000. This project includes the landfill gas flare system with the equipment supply estimated at \$450,900 (Canadian funds).

Due to the timeline restraint between the upcoming tendering/awarding of the construction contract for the Phase 1 closure contract and the subsequent construction season, there would not be adequate time for the successful contractor to specify, order, fabricate, ship and install a landfill gas flare system within the 2015 construction season. Consequently CVRD requested the engineering consultant, Tetra Tech EBA Inc., solicit quotations from LFG flare vendors and provide a recommendation for the supply of the system based on cost, performance specifications, installation requirements and system commissioning assistance. The results of the consultant’s analysis are presented in appendix A.

**Recommendation from the chief administrative officer:**

THAT as a result of a competitive process, a contract be awarded to Perennial Energy for the supply of a landfill gas flare system as part of the Phase 1 closure project at the Comox Valley waste management centre in an amount US\$ 255,158 excluding applicable taxes and customs brokerage.

AND FURTHER THAT the chair and corporate legislative officer be authorized to execute the purchase agreement.

Respectfully:

***D. Oakman***

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Debra Oakman, CMA  
Chief Administrative Officer

### **History/background factors**

The phase 1 closure construction contract is scheduled to be awarded at the April 16,2015 CSWM board meeting. The contract award will be followed by an intensive 6 month (approximate) construction period. Included within this construction period is the installation of the landfill gas flare system.

In compliance with Comox Valley Regional District Bylaw No. 284 Tetra Tech EBA Inc. was awarded a contract to provide tender assistance and construction contract oversight for phase 1 of the existing landfill closure construction at the Comox Valley waste management centre (CVWMC). The scope of this work includes providing project management assistance for the landfill gas system and the flare station installation.

Tetra Tech EBA analysed the feasibility of the successful contractor supplying the flare system within the construction contract schedule. Due to time restraints, the consultants recommended that, on behalf of the CVRD, Tetra Tech EBA solicit quotations for the supply of the system directly with flare suppliers. This option would allow time for a flare system vendor to fabricate the system and deliver it in time for installation by the successful construction contractor in 2015.

Tetra Tech EBA Inc. analyzed the quotations received from four landfill gas flare systems vendors. One vendor did not participate in the follow-up clarification process and their quotation was withdrawn. The analysis of the three compliant quotations prepared by the consultants provides a recommendation based on pricing, capabilities and technical specifications proposed. The quotations were also evaluated based on shipping, pre-shipment approvals, customs brokerage fees, on-site training, commissioning, warranty provisions and certification.

The landfill gas flare system vendors and their pricing is detailed in the Appendix A – Letter of recommendation provided by Tetra Tech EBA Inc. and summarized below:

Perennial Energy	\$255,158 USD
LFG Specialties LLC	\$286,660 USD
John Zink Company, LLC	\$310,790 USD

From this analysis Tetra Tech EBA Inc. has recommended Perennial Energy as they provided the best price of the three vendors in addition to providing several included options.

Perennial Energy is an experienced design and manufacturing company specializing in the biogas processing systems and equipment. The estimated delivery time for the LFG flare system is 23 to 26 weeks from receipt of an approved order from the CVRD.

### **Options**

1. Award a contract for the supply of the LFG flare system to Perennial Energy.
2. Do not proceed with the purchase of the LFG flare system at this time.

To facilitate the construction schedule for the Phase 1 closure of the CVWMC in the summer of 2015 with the availability of this critical component, staff recommended proceeding with the purchase of the flare system at this time to allow for the long lead time for delivery of this equipment.

### Financial factors

The cost for the LFG flare system is part of the \$8,250,000 capital project included in the 2014-2018 adopted financial plan for phase 1 closure work at the Comox Valley waste management centre, function number 391. This is the financial plan that provides the CVRD with spending authority until the 2015-2019 financial plan is adopted by the end of March 2015.

The landfill gas flare system component has an estimated supply cost of \$450,900. The award of this supply contract at a cost US\$ 255,158 is within the project budget.

### Legal factors

Closure of the existing landfill at the Comox Valley waste management centre is a requirement of the Ministry of Environment and is part of the solid waste management plan.

The Ministry of Environment developed the Landfill Gas Management Regulation under the Greenhouse Gas Reduction (Emissions Standards) Statutes Amendment Act, 2008. This regulation is effective as of January 1, 2009.

If a landfill site is estimated to generate annually 1000 tonnes or more of methane, the owner or operator of that site is required to complete a LFG management facilities design plan and to install the designed facilities at the landfill site.

### Sustainability implications

Flaring the methane from landfill gas is a benefit to the social and community well-being by removing a substantial amount of greenhouse gas from the environment.

Typically landfill gas is composed of 45-58% methane and 35-45% carbon dioxide. Because landfill carbon dioxide does not derive from fossil fuel but is part of the natural carbon cycle, it is typically not considered a contributor to the greenhouse gas effect. Due to its higher infrared absorption capacity, methane is a much stronger greenhouse gas than carbon dioxide by a factor of 21. Because of the methane contribution, landfill gas that is not flared or utilized can be a major contributor to the greenhouse effect.

Prepared by:

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Concurrence:

***T. Boatman***

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Thomas A Boatman, PE  
Senior Manager of CSWM  
Services

Concurrence:

***M. Rutten***

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Marc Rutten, P. Eng.  
General Manager of  
Engineering Services Branch

Attachments: Appendix A – “Tetra Tech EBA Inc. - Letter of Recommendation”



February 5, 2015

ISSUED FOR USE  
FILE: 704-ENVSWM03295-01

Comox Valley Regional District  
600 Comox Road  
Courtenay, BC V9N 3P6

**Attention:** Thomas A. Boatman, P.E.  
Senior Manager of CSWM Services  
Comox Valley Regional District

**Subject:** Recommendation on Landfill Gas Flare System Purchase  
Landfill Closure Phase 1  
Comox Valley Regional District

The proposed Landfill Closure Phase 1 work at the Comox Valley Waste Management Centre includes installation of landfill gas (LFG) collection and flaring equipment. The landfill closure construction contract is scheduled for implementation during the summer of 2015.

LFG flaring equipment is specialized and produced in North America by only a few companies.

The Comox Valley Regional District (CVRD) is considering the purchase of the LFG flaring equipment for their landfill closure project directly from the equipment supplier. Direct purchase by the CVRD of a LFG Flare System will reduce the project cost and ensure timely delivery of the equipment to the project. CVRD retained the services of Tetra Tech EBA Ltd. (Tetra Tech EBA) to assess potential suppliers of this equipment.

Four (4) LFG Flaring System vendors were requested to provide a quotation.

Each vendor received a Quotation Package that included a complete set of technical specifications, drawings and piping, and instrumentation diagrams describing the requirements for the LFG Flare System to be supplied specifically for this project. Each company responded with quotations that were reviewed for consistency with the Quotation Packages by Tetra Tech EBA staff. Each of the LFG Flare System vendors was provided with a follow-up questionnaire to clarify specific aspects of their quotations and were invited to participate in a teleconference to review those items.

Three (3) vendors chose to proceed with the questionnaire and teleconference and their submissions were subject to a thorough evaluation by Tetra Tech EBA. The fourth withdrew from the process.

The recommendations from the technical and financial assessment are:

**Perennial Energy LLC** was selected as the preferred supplier of the Landfill Gas Flaring System Equipment.

The equipment that would be provided includes the following critical components and considerations:

- Flare Stack;
- Gas Analyzer;
- Flow Meter;
- Pneumatic Shut-off Valve;
- Two – 25 HP Blowers;

- Insulated Condensate Knock-out Tank;
- Insulated Piping;
- Flanged “T” to Allow for Future Alternative LFG Utilization;
- Stainless Steel Piping on Skid;
- Lowest Price of Offers Considered;
- On-site Training; and
- Canadian Standards Association Equipment Compliance Review Prior to Shipping.

Tetra Tech EBA Inc. recommends that the Comox Valley Regional District enter into a purchase agreement with Perennial Energy LLC for the amount of **\$US 255,158** (excluding taxes and brokerage) for the supply and commissioning of the LFG Flare System.

We trust this letter report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,  
Tetra Tech EBA Inc.



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