

## Awards

### **Award of Excellence 2011**

Municipal Engineering Category

Consulting Engineers  
of British Columbia

District of Kent  
Duncan-Bateson Pump Station

### **Award of Merit 2011**

Municipal Engineering Category

Consulting Engineers  
of British Columbia

Abbotsford Mission Water &  
Sewer Services  
Dickson Lake Upgrades

### **Award of Excellence 2009**

Municipal Engineering Category

Association of Professional  
Engineers & Geoscientists of  
British Columbia

### **Award of Excellence 2009**

Municipal Engineering Category

Consulting Engineers  
of Canada

District of West Vancouver  
Eagle Lake Membrane  
Water Treatment Facility

### **Award of Excellence 2009**

Municipal Engineering Category

Consulting Engineers  
of British Columbia

### **Gold Award 2009**

Water & Wastewater Category

American Council of Engineering  
Companies of Washington

### **Honor Award Local Civil Engineering Achievement 2009**

American Society of  
Civil Engineers

King County, Washington State  
Design/Build of the  
Brightwater Marine Outfall



Secondary Biofilter Odour Control System  
Greater Vancouver Regional District  
Annacis Island Wastewater Treatment Plant, Delta, B.C.

**Opus DaytonKnight** was incorporated in British Columbia in 1965. The company is largely made up of technicians and professional engineers. Management rests with senior engineers who are active in the day-to-day activities of the organization.

Fields of specialization include sewage collection, treatment, disposal, and reclaimed water reuse; water supply, treatment, and distribution; stormwater management; solid waste management; SCADA systems; emergency response planning, asset management and trenchless technology.

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\*As of 15 Nov 2010 Dayton & Knight Ltd. became Opus DaytonKnight Consultants Ltd.

## Odour Control



Biological Scrubber Towers, Ozone  
Odour Treatment & Wet Chemical Scrubbers  
City of Salmon Arm, British Columbia

**OPUS DAYTONKNIGHT**



# When Wastewater Treatment Requires Odour Control

## MAIN TYPES OF ODOUR AT WASTEWATER TREATMENT FACILITIES

- a) Hydrogen Sulphide (rotten egg smell)
- b) Methyl Mercaptan (rotten cabbage or garlic smell)
- c) Dimethyl Sulphide (rotten vegetable smell)
- d) Dimethyl Disulphide (rotten organic matter)
- e) Ammonia

## TYPICAL ODOUR QUALITY OBJECTIVES

Standard	H <sub>2</sub> S Level	Significance
OSHA, WCB Appendix A	15 ppm	Allowable Worker Exposure up to 15 minutes
	10 ppm	Allowable Worker Exposure up to 8 hours
Emissions	<0.1 ppm	Treatment Objective
Property Line	<.005 ppm	10 x Olfactory Threshold
Olfactory Threshold	0.00047 ppm (0.47 ppb)	(not yet measurable with a meter)

1. The olfactory threshold is the concentration of substance that is recognizable by a lay person to be present where no presence was recognizable before its introduction.
2. Allowable ammonia concentrations for workers exposure are 25 ppm for eight hours and 35 ppm for 15 minutes.

Opus DaytonKnight can assess odour control requirements and recommendations on odour mitigation methods such as:

- Odour surveys - measurements, soap bubble tests, and smoke bomb testing
- Chemical addition (ferrous chloride, ferric chloride, hydrogen Peroxide, potassium permanganate, sodium hypochlorite)
- Chemical masking agents
- Covering and venting of structures
- Septage dilution techniques
- Biological scrubber towers (nitrifying and/or caustic)
- Trickling filter media for use as a biological scrubber
- Compost biofilters (for scrubbing wastewater treatment process off-gases and sewage pumping station wet well off-gases)
- Exhaust ducting and stacks
- Ozone generation for vapour phase oxidation
- Ultra violet light for free radical vapour phase oxidation of odour compounds
- Thermal oxidation system for volatile organic compounds

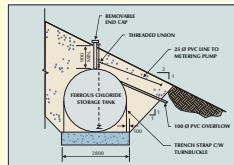


Enclosing of odorous area such as grit hopper storage bay

J.A.M.E.S. Water Pollution Control Centre

Enclosed and automated septage receiving station with downstream dilution tank

French Creek Water Pollution Control Centre



Ferrous chloride addition into trunk sewers and/or pumping station wet well to precipitate dissolved sulphides

Parksville Bay Avenue Pumping Station



Recuperative Thermal Oxidation (RTO) Treatment for VOC Trans Mountain Pipeline Company Ltd.

Burnaby Tank Farm, Burnaby, B.C.



Solair (UV) Treatment for Pump Station WetWell



Activated Carbon Odour Control

Emerald Estates, Whistler, B.C.