9401 Trans Canada Highway
Chemainus, BC
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www.coastenvironmental.ca

Operating Plan

As Required by CVRD bylaw 2570

Company: Coast Environmental Ltd.
Facilty: Chemainus Composting Facility

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The Coast Environmental Chemainus Compost site, currently processing dewatered sludge, pre/post consumer food waste, fish waste, dairy waste, yard and garden waste along with the processing and storage of Class A compost will be done onsite utilizing two specific fully enclosed building technologies. The operating plan below is a revised plan to describe an expanding compost operations and updated operating practices.

The compost/curing area of the compost facility (facility 1) is 72' (21.95m) W x 255' (77.73m) L (18,360 sq/ft), while the mixing/receiving area is 70' (21.34m) W x 90' (24.4m) L (6300 sq/ft), resulting in a total 24,660 sq/ft fully enclosed coverall facility. The compost/curing and mixing/receiving areas are separated with a coverall tarp allowing for an approximate 2.5/4.0 air change per hour respectively within each area of the compost facility. As the facility is located on the site of the former Doman Mill, it was paved at ~6" (15.24 cm) thickness to account for heavy equipment traffic. The mixing, receiving, composting and curing process will all be conducted within the coverall building. The receiving/mixing area of the building will utilize a 10,000cfm exhaust fan, while the compost/curing Gore covered area of the facility will utilize a 18,000cfm exhaust fan. Both fans are connected to their own adjacent biofilters. The biofilters will provide 4,500ft3 of treatment volume (27sec/15sec Empty Bed Contact Time (EBTC) respectively).

This will be the first facility in North America to take the additional step of utilizing the Gore Cover technology indoors. The odour and emissions protection provided by the in-vessel Gore Cover technology will dramatically improve air quality and emissions within the building when compared to normal Aerated Static Pile (ASP) systems.

To further reduce its environmental impact and odour emissions, Coast Environmental is allowing for the storage, handling and screening of its class A compost to all be done on asphalt and within a fully enclosed 80' (24.38m) W x 300 (91.44m) L (24,000 sq/ft) fabric covered facility. The storage facility will utilize a 18,000 cfm exhaust fan that will produce ~ 1.88 air-changes per hour, where all building exhaust is filtered in an adjacent biofilter. Again this will be the first facility of its kind in North America to store and process its Class A compost within a fully enclosed building which interchanges its air through a biofilter.

Globally, GORE™ Cover – as the market leader – is used in over 150 composting and organic waste treatment plants, with a total plant throughput amounting to more than 2 million tons per annum. In addition to the supply of the laminate and the technical system Gore provides intensive training to ensure sustainable operation of the treatment process.

This operating plan will fully comply at all times with CVRD Bylaw 2570, Waste Stream Management Licensing Bylaw and the Organic Matter Recycling Regulation (OMRR).

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1. Type, quantity and quality of waste

The current forms of waste to be accepted/delivered to Coast Environmental are: dewatered sludge generated from an approved wastewater facility in Victoria and any other dewatered sludge generated from wastewater facilities throughout Vancouver Island, pre/post consumer food waste, fish waste, dairy waste, yard and garden waste, generated from either the private or municipal sectors.

The licensed wastewater facility in Victoria produces approximately 4,000 wet metric tonnes of dewatered sludge annually. This sludge is made up of various wastewaters: food waste, septage, dairy waste, brewery waste, fish waste, etc. This equates to one end dump (~20 tonne) generated per day and delivered to the Coast Environmental facility. **(Note: ~25% of the approved wastewater facility's dewatered sludge annually comes from the CVRD and North Cowichan regions).** The sludge is dewatered to ~30% solids and transported via sealed end dump trailer. Tonnages of pre/post consumer food waste, fish waste, dairy waste, yard clippings and land clearing debris changes monthly/annually due to market amounts available.

Coast Environmental's composting facility has 11 aerated receiving cells, with an annual processing capacity of ~6,600 wet tonnes or a total annual facility processing capacity of 13,200 MT including amendment/bulking agent material.

Maximum Onsite Waste Quantities (MT):	
Dewatered Sludge/Brewery Waste/ Dairy Waste	25
Pre/Post Consumer Food Waste/ Fish Waste	10
Yard and Garden Waste (Unground)	35
Yard & Garden Waste (Ground/Processed)	250
Inorganic Material (Plastics, Glass, Cardboard, ect…)	0.5

2. Handling methods

The bulking agents (woodchips, sawdust, yard and garden waste) for the compost facility will be utilized using public/commercial yard and garden waste and previously buried onsite hogfuel woodwaste as part of the remediation plan for the property**.** The responsibility for the existing hogfuel woodwaste onsite is solely that of the property owner, and Coast Environmental only assumes responsibility for woodwaste received within its leased paved area.

Dewatered sludge will be accepted from any wastewater facility on Vancouver Island and upon weigh-in/weigh-out Coast Environmental staff will inspect for approval. All arriving trucks carrying dewatered sludge to the Coast Environmental site will be

weighed in by a Coast Staff member to produce a gross vehicle weight. Once a customer 's gross vehicle weight is taken, a Coast staff member will direct and instruct customer to follow all posted site maps, speed limit, and safety signs "AT ALL TIMES" while making their way to and from the mixing/receiving area of compost facility. Once in the mixing /receiving area of the compost facility, the customer will then be directed as to where staff would like the arriving waste to be unloaded. Mixing/receiving area doors will be closed at all times accept to allow vehicles to enter/exit the building. Once the truck has unloaded its waste, the customer will be instructed to clean all truck tires off of any contaminates picked up while unloading using a washing station (garden hose and nozzle) located within the mixing/receiving area before leaving the facility. The customer will be directed back to the weigh scale to be weighed out by a Coast Environmental staff member. The customer will receive a final weigh slip with trucks total net weight before leaving the Coast site. All dewatered sludge will be mixed and stored on the day of arrival with compost bulking agents (woodchips, sawdust, yard and garden waste) within the mixing/receiving area of the compost facility to await the composting process. Bulk delivery (sealed end dump) is the only approved delivery method for the dewatered sludge to the Coast Environmental site with one or more loads expected per day, Monday to Saturday.

Pre/post consumer food waste, yard and garden waste and land clearing debris will be accepted from any drop in customer on Vancouver Island and upon weigh-in/weigh-out Coast Environmental staff will inspect for approval. All arriving customers carrying pre/post consumer food waste, yard and garden waste and land clearing debris to the Coast Environmental site will be weighed in by a Coast Staff member to produce a gross vehicle weight. Once a customer's gross vehicle weight is taken, a Coast staff member will direct and instruct customer to follow all posted site maps, speed limit, and safety signs "AT ALL TIMES" while making their way to and from their designated disposal area. Customers disposing of yard and garden waste will be directed to unload all material within a designated outside holding cell located on an impermeable asphalt surface at the south end of the composting facility. All customers disposing of pre/post consumer food waste will be directed to the inside mix/receiving area of the composting facility. Once in the mixing /receiving area of the compost facility, the customer will then be directed as to where staff would like the arriving pre/post consumer food waste to be unloaded. Mixing/receiving area doors will be closed at all times accept to allow vehicles to enter/exit the building. Once the customer has unloaded their material, the customer will then be instructed to clean all truck tires off of any contaminates picked up while dumping using a washing station (garden hose and nozzle) located within the mixing/receiving area before leaving the facility. The customer will then be directed back to the weigh scale to be weighed out by a Coast Environmental staff member. The customer will receive a final weigh slip with trucks total net weight before leaving the Coast site. All pre/post consumer food waste must arrive in a fully sealed (sealed collections truck, roll-off, tractor trailer, totes ect..) collections container. All customers will be turned away if the arriving collections container is not fully sealed. All inorganic

material (plastics, paper, cardboard, ect…) collected during the screening/separation process of food waste and or yard and garden waste will be disposed of into nearby covered garbage bins. Coast staff will also patrol the compost grounds for any loose litter (which will also be disposed of within the covered dumpster) as part of their daily onsite inspection program. The covered garbage bin will be emptied once a month with a possible increase/decrease in dump amount upon discretion of Coast Environmental management.

All yard and garden waste will be stored outside within a designated cell on asphalt. All yard and garden waste will sit no longer than 2 days before being ground onsite. Grinding at minimum of every 2 days will minimize stored unground yard and garden debris stockpile volumes. Once ground, yard and garden debris will be stored inside the fabric covered compost buildings.

All food waste being stored within the mixing/receiving area in the facility will sit no longer than one day before being mixed with onsite bulking agents to be then moved to the composting portion of the facility. Yard and garden and being chipped onsite will be wetted down if needed before/while being chipped to help with dust mitigation. Pre/post consumer food waste, yard and garden waste will be accepted Monday to Saturday 7:00am - 5:00pm.

Fish and dairy waste will be accepted from any drop in customer on Vancouver Island and all loads will weighed-in/weighed-out by Coast Environmental staff and inspect for approval prior to unloading. All arriving customers with fish and dairy waste to the Coast Environmental site will be weighed in by a Coast staff member to produce a gross vehicle weight. Once the customers gross vehicle weight is taken, a Coast staff member will direct and instruct the customer to follow all posted site maps, speed limit, and safety signs "AT ALL TIMES" while making their way to and from the mixing/receiving area of compost facility. Once in the mixing /receiving area of the compost facility, the customer will then be directed as to where staff would like the arriving waste to be unloaded. Mixing/receiving area doors will be closed at all times accept to allow vehicles to enter/exit the building. Once the customer has unloaded their material, the customer will then be instructed to clean all truck tires off of any contaminates pickup up while unloading using a washing station (garden hose and nozzle) located within the mixing/receiving area before leaving the facility. The customer will then be directed back to the weigh scale to be weighed out by a Coast Environmental staff member. The customer will receive a final weigh slip with the trucks total net weight before leaving the Coast Site. All fish and dairy waste must arrive in a fully sealed (sealed collections truck, roll-off, tractor trailer, totes…etc) collections container. All customers will be turned away if the arriving collections container is not fully sealed. All fish and dairy waste will be mixed and stored on the day of arrival with compost bulking agents (woodchips, sawdust, yard clippings and land clearing debris) within the compost facility to await the composting process. Fish and dairy waste will sit no longer than one day before being

transferred to a compost cell within the compost facility. Fish and dairy waste will be accepted Monday to Saturday 7:00am - 5:00pm and only within the covered mix/receive area of the facility.

Coast understands that due to the organic nature of the incoming feedstocks, there is an increased possibility of vector attraction (rats, mice, raccoons etc..) within the onsite compost operations. If vectors are found within or around the compost facility a pest control technician will be called and control program implemented.

3. Site and Environmental Protection

The Coast Environmental site is controlled by two existing locked access gates, one along the Trans Can Hwy, the other at the MB Haul Road. The existing office trailer has phone/fax/email capabilities in place, staff are also equipped with cell phones/handheld transceivers. There are no buildings within 15+metres of the coverall structure and two fire hydrants are located within 50m of the coverall building.

The site is fully asphalt paved and an asphalt paved raised berm of 3-4" (7.62-10.16cm) that surrounds both the compost building and storage facility foundations to prevent rainwater/run-on from entering. All rain-water/run-on is directed away from and around both buildings to existing catch basins, bioswale and/or a stormwater retention unit (sru) located approximately 100 m east of the facility. Investigations during site development indicate groundwater at depth of >6ft (1.83m). In case of spill, the sru can be emptied with a vacuum truck, with the contaminated liquid contents taken to the SPL wastewater facility.

Within the composting area of the composting building, each of the 11 aerated floor systems are completely sealed systems and are connected to 20 gallon (75.71 litre) water traps, which in turn are connected to 2 central concrete sumps of ~100 gallon capacity each. The sumps are 2ft round, 5 ft deep concrete type well casings. These sumps are in turn connected to a larger 1,700 gallon concrete underground holding tank.

The mixing/receiving area of the building will use natural flowing contours of the asphalt slab to direct all leachate runoff to a 450 gallon concrete sump found in the southwest corner of the mixing/receiving area. The sump will be inspected daily and pumped out when deemed necessary by a Coast Environmental staff member using an onsite vacuum tanker truck.

Pipe used is sewer type (gasketed) PVC SDR 28, ensuring no leakage and cracking will occur. All leachate generated by the compost process and/or any process liquids are directed to these sealed sumps. The leachate contained in these sumps will be trucked away via vacuum tanker back to the approved wastewater facility as required. These procedures and systems insure that no lands adjacent to the facility will be impacted.

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With Class A compost being stored and processed/screened on asphalt and within the confines of a fully enclosed storage building, almost all surface water coming in contact with Class A compost piles will be eliminated, as will any surface water sediment and nutrient loading entering the onsite bioswale.

4. Monitoring / Inspection program

Site staff will conduct daily general inspections of the building, grounds, equipment, and processes as part of daily operating procedures and recorded on attached Daily Compost Site Inspection Form (See appendix B).

Monitoring of the compost process within the composting facility will be conducted electronically through use of temperature and oxygen probes, downloaded automatically to a recording software program. Target parameters will be well above the 3 day 55 °C pathogen degradation requirement set out by the provincial regulations (OMRR), **as temperatures utilizing Gore Cover technology often reach 65-70+ °C for more than 21 days.** Moisture parameters for in-process and outdoor piles will be ≤ 60% and bulking agent will be stockpiled and covered as required to ensure proper moisture levels.

One of the benefits of the Gore Cover technology is additional ability to monitor Oxygen content within the pile. A probe is placed beside the temperature probe and the "Kompmaster" software automatically adjusts and monitors the O2 levels within the pile in conjunction with the temperature and either turns air on or off to the pile as required to maintain oxygen parameters maintained between 5%-18% as required.

Data is uploaded continuously to the database, providing up to 24 automated monitoring intervals per day. The mix/receive, primary composting and curing phases will all occur indoors. Upon cured compost piles leaving composting facility, analytical samples will be taken to classify the compost pile as a Class A product. Finished Class A compost storage will occur on asphalt and within a fully covered 80' (24.38m) W x 300 (91.44m) L (24,000 sq/ft) fabric covered facility that is biofilter outfitted. Compost shall be considered Class A once specified parameters from within the Organic Matter Recycling Regulations (OMRR) have been adhered to and met (Coast Environmental will supplement the C/N Ratio test periodically (~ once per month) with the Solvita Compost Maturity Test (to be considered class A compost, Solvita maturity index parameters must be between 6.5 – 8.0) to further assess its composts maturity). **To ensure Coast produces and sells a top quality, environmentally safe soil amendment, Coast also further samples its finished screen compost for all required OMRR parameters.**

H_2S monitors will be worn at all time during the leachate removal period by facility staff due to the possible occurrence of high levels of Hydrogen Sulfide (H_2S) that could be found during the removal of leachate from within the leachate containment

areas of the compost facility. If high levels of H_2S are detected, all operations from within the compost facility will immediately stop and all facility staff members will be ordered to evacuate the building. No staff will be allowed to enter and or resume operation until monitor levels return to normal.

To ensure the safety of its workers, an independent air quality testing firm was contracted by Coast to perform an air quality test within the compost facility during daily hours of operation. Results of the tests state all WCB indoor air quality parameters were met and adhered to.

5. Odour Management Plan

Overview

The purpose of this plan is to outline procedures that we, Coast Environmental, will take to minimize odours generated by our composting facility located at 9401 Trans Can Hwy, Chemainus BC. The intent is to control odours to the point where our facility does not cause significant objectionable odours at all.

We plan to minimize and control odours that may be generated at our facility through control of our feedstocks and composting, curing, screening, final compost handling operations and open facility door policy.

Odour Control – Ventilation and Biofilter

Although the Gore Cover system provides very effective odour control during the active compost process, odours are generated in the facility during the mix/receive process. The odours generated during mix/receive process however is limited to only a short time span of approx 60-90 minutes per day. Material is then taken and placed beneath the in-vessel Gore Cover which then provides its own odour protection.

Coast Environmental staff will keep all building doors closed at all times during all facilities operations, with exception to the delivery of feedstocks and bulking agents within the mixing/receiving area (~10-15 minutes for each delivery) of the compost facility the loading of customer vehicles of finished Class A compost from within the processing and storage facility (~10-15 minutes).. Doors will only be open for a short period of time involving these unavoidable circumstances.

Coast Environmental has increased its mixing/receiving area from 4,200 ft^2 to 6,300 ft^2 for the stockpiling of more composting amendment within the facility. This will assist to keep amendment dry, plus with the additional space for amendment storage, doors to the facility will need to be open less frequently thus lowering the

potential for odours escaping the facility while doors are open.

Compost building ventilation design incorporates 3 - ~ 40 ft (18.3m) 14" (35.56cm) galvanized ventilation lines over the mix/receive area. The 3 feed lines tie into a 24" (30.48cm) main galvanized ventilation line leading out to the fan. The fan is a Greenheck 10,000cfm unit, with 24" (30.48cm) outlet line of ~75ft to the biofilter. Placing the ventilation system over the mix receive area will ensure proper air changes will occur.

The compost building ventilation design for the compost area also incorporates 3 - ~ 100 ft (30.5m) 14" (35.56cm) galvanized ventilation lines. The 3 feed lines tie into a 24" (30.48cm) main galvanized ventilation line leading out to the fan. The fan is a Greenheck 18,000cfm unit, with 24" (30.48cm) outlet line of ~75ft to the biofilter. With the incorporation of 2 separate ventilation systems within the compost facility, a significant odour reduction will occur. **An air distribution test report was performed by independent firm on the 18,000 cfm fan after installation and the report found that +90% cfm efficiency was achieved.**

The mixing/ receiving area biofilter dimensions are 15ft W x 65ft L x 4ft or ~4,500ft3 which provides a EBCT of 23.5 sec for exhaust gases from the facility. There are a minimum of 16-8" lines planned within the biofilter, which provides a total pipe area of 804" to the 452" of main exhaust pipe ventilation line.

The compost area biofilter dimensions are 15ft W x 75ft L x 4ft or ~4,500ft3 which provides a EBCT of 15sec for exhaust gases from the facility. There are a minimum of 24-8" lines planned within the biofilter, which provides a total pipe area of 1,206" to the connecting 1,017" of main exhaust pipe ventilation.

An air pressure gauge is installed at the start of all 24" galvanized exhaust pipes leading into each biofilter to monitor and maintain all biofilter operational efficiencies. Average operating air pressure measurements for each biofilter are as follows: Compost building - 18,000 cfm - ~.6 pascals, Compost Building - 10,000 cfm - ~.75 pascals, Processing and Storage Building 18,000 cfm - ~.6 pascals. All biofilters will be monitored daily to ensure proper performance. A temperature probe will be permanently installed in all biofilters to continuously monitor temp levels within each biofilter to maintain optimal operating tempurature ranges 10 – 40°C. Coast staff will monitor and maintain each biofitler's moisture content to the average industry standard of ~ 30- 70%. A near neutral (6 - 8) biofilter medium industry standard pH range will be monitored and maintained within both filters. Air-pressure, temperature and moisture content data will be recorded manually on a weekly basis, while pH will be recorded once per annum. Moisture (if required) will be added via water hose/lines or mist style heads. All biofilters will be surrounded by one layer of concrete lock blocks protecting them both from physical damage and run-off.

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In case of biofilter(s) problems/failure, the compost facility will be temporarily shut down while replaced/enhanced. Feedstock will be directed to either another composting facility or landfill as required.

To even further reduce odours during its curing process, Coast Environmental has added an additional 2 days extended duration on air with tarp off. This additional time on air within building further reduces moisture and residual odours from within the finished compost piles. This additional step extends the retention time of each pile from within the composting building to 45 days.

Class A finished compost will be stored and screened on asphalt and within a fully enclosed fabric structure outfitted with a biofilter, another first for North America. By storing Class A finished compost piles in a building, piles will be allowed to "breathe" and further minimize any potential odour issues that can be created by the tarping of finished piles. Finished compost stored and screened within a building will also eliminate almost any chance of excess moisture from coming in contact with the Class A compost piles, either from direct precipitation and/or run-on at the base of the piles. The Chemainus facility has set the highest standard for the management of organics known in North America.

Finished screened Class A compost will only leave the confines of the fully covered and sealed storage facility in the event it is being processed into a variety of soil amendments / blends (garden mix, golf course blends, sand blends, ¼ soil amendment, ½ soil amendment, aggregate blends ect..).

The processing and storage building ventilation design incorporates 3 - ~ 100 ft (30.5m) 14" (35.56cm) galvanized ventilation lines. The 3 feed lines tie into a 24" (30.48cm) main galvanized ventilation line leading out to the fan. The fan is a Greenheck 18,000cf m unit, with 24" (30.48cm) outlet line of ~75ft to the biofilter.

The processing and storage building biofilter dimensions are 15ft W x 65ft L x 4ft or ~4,500ft3 which provides a EBCT of 13 sec for exhaust gases from the facility. There are a minimum of 16-8" lines planned within the biofilter, which provides a total pipe area of 804" to the 452" of main exhaust pipe ventilation line.

To even further mitigate and reduce odours during the storage and processing of Coast Class A compost, a fully enclosed tunnel that will maintain negative air pressure as described will connect both the composting and process and storage facilities for the transportation of all new Class A compost piles from the active/curing area of the compost building to the storage and processing facility.

Control of Feedstocks

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We will endeavor to use feedstocks compatible with our composting operation, which are not too wet for the desired mix characteristics. The only feedstocks anticipated at this time for the composting facility are: dewatered sludge from various wastewater facilities on Vancouver Island, pre/post consumer food waste, fish waste, dairy waste, yard and garden waste, land clearing debris and pre-existing onsite woodwaste.

The incoming materials (except yard and garden waste and land clearing debris) will be received entirely within a purpose built fabric covered building. The mixing/receiving area 70' (21.34m) W x 90' (27.43m) L will have a min 10,000 CFM (600,000 ft^3/hr) ventilation system in place to provide ~4 air exchanges per hour in this area. The composting area 72' (21.94m) W x 255' (77.73m) L of the facility will have a min 18,000 CFM (108,000 ft^3/hr) ventilation system in place to provide ~ 2.5 air changes per hour in this area. Also, if necessary, any incoming feedstock that can not be immediately processed within the facility will be immediately covered with wood chips to provide addition odour control. All feedstock will be processed within 24hrs of arriving at the composting facility.

Only feedstocks licensed under CVRD Bylaw #2570 will be accepted. It is clearly understood that acceptance of additional feedstocks will require a license amendment.

Doors to the compost facility will be kept closed at all times except to allow delivery of feedstock and amendment and removal of finished compost product from the process and storage building. Sufficient amendment will be kept at all times within the building to mix daily received feedstocks as required. Doors to facility will only be open to allow access to vehicles/equipment entering or exiting the building.

Control of Composting Processes

We fully understand that composting odours are primarily related to not maintaining proper aerobic conditions throughout the composting piles. Accordingly, our primary means of controlling odours during the composting processes will be to maintain aerobic conditions with an in-vessel, covered, aerated static pile (CASP) system.

The Gore Cover technology components include: odour and moisture controlling membrane covers, air floors, temp probes, oxygen probes, ventilation blowers, and monitoring software. Coast Environmental will take the additional step of utilizing the Gore Covers indoors, in a completely enclosed coverall building with 2 biofilters, a first in North America.

A compost flow chart (See Appendix A for reference) shows an approximate operational flow of the suggested cells that will house the active composting and curing phases of the composting process from within the building.

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The mixing of the incoming feedstocks will be done on the day of arrival at the facility. Moisture content and weights of each mixture will also be monitored by staff to help maintain an optimal mixture ratio. This is done using a digital electronic weigh scale mounted on the mixer. Moisture content of mixes will also be measured by Coast staff using a simple periodic squeeze test. Moisture content of compost during the squeeze test should be compared to that of a "wrung out wet sponge". If moisture content appears to be high within the compost mix, more bulking agent will be added.

To stop cross contamination between the active, curing, and screened compost piles on the Coast compost site, a 3yd3 mixing bucket and an 8 yd3 curing and finished compost bucket exist for the front end loader.

The compost facility will utilize 8 Gore Covers within an 11 cell composting facility. All cells will have their own computer controlled air flow channel for proper compost aeration. Compost piles utilizing Gore Covers will be placed on air for a minimum of 2-3 weeks (active composting phase), turned, then covered again and on air for an additional 3-4 weeks (curing composting phase). The Gore Cover acts as a physical barrier against gaseous substances escaping from the decomposing material. The micro porous membrane structure of the Gore Cover means that 99% of bioaerosols and microbes are retained within the cover, protecting both workers and nearby residents. The piles will be limited to max height of 2.5m, max width of 6m, and length of 17m. Covers are installed and removed with an automated mechanical winder.

Turning of the piles will be done within the fully enclosed compost building, with all process air directed to the ventilation systems and biofilters. The primary odour protection provided by the Gore Cover technology, combined in an enclosed building with ventilation and biofilters will provide maximum odour protection for both the facility and surrounding community. As both the active composting and curing and screening portions of the composting process are fully enclosed and highly ventilated, no noxious odours are anticipated.

Curing

Primary curing (14 days as required by the OMMR) of compost will be completed within the compost building. As with the active composting process, aerobic conditions will be maintained, thereby minimizing generation of noxious odours. Aerobic conditions will be maintained by utilization of the following procedures: minimizing pile heights to no more than 8 feet, utilization of either passive (blower) or active (turning with loader) or other methods as appropriate. The odours generated are anticipated to be "earthy" or "musty" in character and unlikely to cause off site impacts.

All finished Class A compost will be stored within the fully enclosed storage facility for a minimum of 4 weeks time frame before being screened. All finished Class A compost piles will be periodically (~weekly) flipped within the fully enclosed storage facility with a loader to keep piles aerobic and provide optimal compost finishing environment.

Screening

No odour is anticipated to be released during the screening process for final product distribution, as all air from within the fully enclosed storage area will be interchanged through a ventilation system and into a biofilter. Finished screened Class A compost will only leave the confines of the fully covered and sealed storage facility for final retail sale and processed into a variety of soil amendments / blends (garden mix, golf course blends, sand blends, ¼ soil amendment, ½ soil amendment, aggregate blends etc.).

Odour Complaint Procedures

Any composting operation desires to not cause any impacts to its neighbors. We realize however that we can not always control conditions at the site and that temporary odour may be released. The following odour complaint procedure will be implemented to ensure we can identify and rectify any potential odour issue in a timely manner:

- A standardized odour complaint procedure wherein the CVRD acts as intermediary and serves as point of contact for all complainants has been adopted and will be followed.
- Odour complaints will be dealt with by staff in a professional and courteous manner.
- The complaint will be recorded on the attached odour incident report form.
- Staff will visit and note the conditions at the plant as well as visiting the site of odour impact (business, home, etc) to determine the nature of the odour (using the compost "odour wheel" as a guide).
- Staff will determine what is causing the odour problem and what actions can be taken to mitigate it, appropriate actions will be implemented immediately.
- After mitigation has occurred, the site of odour impact will be monitored and reported to ensure the odour problem is solved.

6. Unauthorized waste

The composting facility is open to the public and any other supplier/contractor throughout Vancouver Island. Weigh-in/weigh-out will be by Coast Environmental staff, load inspection criteria along with site security (access gates and fully enclosed compost process) ensures no other waste is received at the compost facility. All customers bringing in unauthorized waste will be turned away and directed to the nearest Waste/ Recycling facility that will accept the refused material. The site is equipped with front

load type steel refuse containers if required as contingency for the disposal of municipal solid waste.

7. Weigh procedures

Coast Environmental has a fully operational 60 tonne industrial electronic weigh scale on site. All customers hauling dewatered sludge, pre/post consumer food waste, fish waste, dairy waste, yard clippings and land clearing debris are to weighed-in/weighed-out upon arrival and departure at the Coast Environmental Chemainus Compost Facility as part of its reporting requirements to Regional Authorities. Upon scaling completion, a Coast Environmental staff member will supply the hauler with a printed electronic weigh scale slip showing the hauler's gross, tare and net weights for billing purposes for both parties. Scale operational hours are Monday to Saturday 7:00am - 5:00pm.

8. Protection measures

Fire

Coast Environmental site is equipped with fire hydrants within 50m of each composting facility and 1" (2.54cm) diameter ~200' (60.69m) long waterline to reach each facility in case of need. There is a 20lb (9.1kg) fire extinguisher mounted at the wall of the electrical room. Absolutely no smoking will be permitted on the property. Stockpiles of amendment and cured compost will each be limited to ~1,000yds max size each and separated by a minimum of 5' (1.52m). This is a precautionary measure that will provide both a physical buffer and access for equipment against a larger type pile size fire. Earthmoving equipment (excavator and loader) are onsite to assist as required

Floods

In the event of a flood, incoming deliveries of feedstock and bulking agents would be restricted or refused. The composting building would remain closed to prevent water from coming in contact with the in processing compost and appropriate authorities would be contacted as required.

Seismic disturbance

The affected facility will temporarily shut-down pending complete investigation by the operator in the case of any significant seismic disturbance. All structural components and ground infrastructure will be thoroughly investigated to ensure no damage has occurred to grounds or building which could create a safety or health hazard.

Emergency Planning

The CVRD Manager will be contacted verbally as soon as possible, and in writing within 48hrs, of an emergency event.

9. Leachate and Run-off

Overview

This plan will address the procedures that Coast Environmental will take to both minimize and manage leachate generated by our proposed compost operation located at 9401 Trans Can Hwy, Chemainus BC. The intent is to control leachate to the point where our facility does not cause any significant impact to the ground or surface waters around the facilities.

Leachate generated from the compost operation will be minimized through stormwater run-on and run-off, control of feedstocks, and control of compost processes (receiving, mixing, curing, etc.)

Control of Stormwater Run-on and Run-off

The best way to minimize leachate from the composting operation is to reduce the amount of stormwater (rain, snow, etc) that can come into contact with the composting feedstocks, the active composting processes and the curing and final storage area.

Accordingly, Coast Environmental has built two fabric cover building 24,660 sq/ft and 24,000 sq/ft respectively in size to house the entire receiving, active composting, primary curing and processing, screening and storage of Class A compost to be done entirely in doors, under cover.

Run-on control will be established by the use of a containment berm around the entire perimeter of both facilities, directing all overland flow (rain, melting snow, etc) to the existing catch basins, stormwater retention unit and 3 chambered bioswale already onsite. This will significantly minimize leachate generation to the small amount generated specifically from within compost building process itself. Upon the regulatory bioswale cleanout set forth within the in place EMP, all bioswale water will be taken to a private wastewater facility for treatment. Any accumulated sludge from within bioswale chambers will be removed (utilizing either vacuum truck or excavator as appropriate) and used either as pre active phase compost additive or disposed of to an approved offsite landfill as required.

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Leachate Capture

Due to the fully contained and sealed nature of the compost facility, any leachate generated from either the below grade center air channel, and/or from incoming feedstocks and/or the active/curing compost piles on the asphalt interface within the facility will be directed to either of the strategically placed ~1,700 gallon leachate storage tank and/or ~450 gallon leachate storage sump by means of slope from within the air channels and a natural occurring slope of the asphalt interface. All captured leachate from within the holding tanks will be pumped out from within the confines of the fully enclosed compost facility (doors will be shut during this process to minimize odours) and trucked away to approved wastewater facility. Leachate will not be used to re-moisten piles.

Stormwater Management

All Coast Environmental composting, storage and processing operation are contained within fully enclosed and covered buildings, situated on a pre-paved 25 acre formal mill site. This former mill site has several other buildings/tenants. The site is equipped with existing bioswale, catch basin and stormwater retention unit (sru) infrastructures onsite to meet North Cowichan local municipal requirements for stormwater discharge. The Coast Environmental lease with the site landlord specifies that the landlord is responsible for the maintenance and performance of the sru (understood to be cleaned out semi-annually by the landlord).

The SRU dimensions are ~18' (5.49m) W x 50' (15.24m) L x 3' (.92m) D providing a total retention capacity of ~18,000gallons (68,137 liters) for the treatment of stormwater. The sru will effectively reduce both the Biological Oxygen Demand and Total Suspended Solids of site stormwater by primary settling of suspended solids. The SRU is also equipped with a baffle wall/plate to prevent any floating oils from reaching the outlet side of the unit.

The bioswale's dimensions are ~ 25' (7.65m) L x ~14' (4.25m) W x ~ 4'(1.25m) D 2 chambered approved bioswell providing a total retention capacity of ~18,000gallons (68,137 liters) for the treated stormwater. The bioswale will effectively reduce both the Biological Oxygen Demand and Total Suspended Solids of site stormwater by primary settling of suspended solids. The bioswale is equipped with 3 chambers with invert T inlets to prevent any oils from reaching the outlet side of the bioswale.

Control of Feedstocks and Composting Processes

External feedstocks anticipated for the composting operations are: dewatered sludge, pre/post consumer food waste, fish waste, dairy waste, yard/garden waste. The dewatered sludge is stable with a consistent moisture content of ~30% solids. The other

feedstock is internal, woodchips/sawdust located on the ~20 acre non-paved portion of the site. This material was stockpiled and covered from the sites previous history as a mill site. All feedstocks will be mixed and processed inside a fabric cover building. Coast Environmental assumes no responsibility for the existing woodwaste onsite, as this is solely the responsibility of the property owner.

The entire composting operation will be covered in a fabric cover building with end walls/doors. The composting processes will include impermeable pads, curbs and drains. Leachate will be convened to storage tanks. Curing of all compost mixes will be done indoors for the required retention period, as will the transfer and final screening of all Class A compost

10. Monitoring

Monthly records will be kept regarding the following:
- amount of dewatered sludge received
- amount of leachate collected/transported offsite for treatment/disposal to the approved wastewater facility.
- Amount of finished compost distributed annually
- Temperature and 02 data, along with start dates from each of the 11 compost cells/windrows are recorded by the automated Gore Cover technology software program.
- As per section 12.4 of Bylaw 2570, monthly statements will be provided to the CVRD outlining the quantities of received and shipped and the max net tonnage onsite at any one time.
- The above monitoring steps will all ensure that sampling and record-keeping requirements (Schedules 3, 5 and 6) of OMRR will be adhered to.

11. Remedial actions

No ground or surface water contamination is anticipated. The facility is fully enclosed, sealed at the base and has sealed containment within its footprint. Coast Environmental will take immediate remedial action if required as a result of operations at the facility, which may include any of the following:
- Use of earth moving equipment to excavate/remove material.
- Use of vacuum truck to remove liquids and washdown as required.
- Use of sweeper type equipment to clean paved surface areas.

The following agencies will be contacted in the event of a spill:

Ministry of Environment (Provincial Emergency Program, PEP) 1-800-663-3456

National Environment Emergency Centre 1-819-997-3742

And for transport spills: Canadian Transport Emergency Centre 1-613-996-6666

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This Operations Plan is solely to fullfill all compost operational requirements put forth within CVRD RFP: ES 007-12 and CVRD: RFP ES 008-12. When not under contract with the CVRD, Coast Environmental may ammmend the Operations Plan to change the handling and storing methods of class A compost from within a sealed building to outside on ashpalt as per previous operating plan and industry standard practise. At no time is the stipulation for covered storage and processing of all unscreened class A compost from within a sealed building to be a condition/requirement of Coast Environmental Ltd's Waste Stream Management License.

Composting Personnel Training Program

Facility Name: Coast Environmental Ltd.

Facility Location: 9401 Trans Can Hwy, Chemainus BC

Compost Technology: Gore Cover – Covered Aerated Static Pile (In-vessel System), completely enclosed within coverall building.

Prepared by: Dan Lazaro, B.Sc / CTech - Env
Coast Environmental Ltd.

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Dated: Dec, 2011

Coast Environmental Ltd. intends to commission an in-vessel composting facility, fully enclosed in a large coverall building, utilizing the Gore Cover enclosed aerated static pile (CASP) system. Coast Environmental Ltd. (CEL) has been selected to operate the compost facility. This training program will allow site personnel to be functional as compost professionals so that the facility can be fully compliant with the requirements of the Organic Matter Recycling Regulation (OMRR).

The following guidance documents are mandatory reading for compost facility personnel:

Organic Matter Recycling Regulation – review of regulation in its entirety. Specific attention and acknowledgement to:
- Part 3, Division 5 and 6 - class A and B compost quality and the relationship between time, temp and pathogen kill.
- Schedule 5 – Sampling and Analyses
- Schedule 6 – Record Keeping

Compost Facility Requirements Guidelines – reviewed in its entirety.

Gore Cover Systems – Operating Manual and Plans
- On site training and orientation (~40hrs).

BC Agricultural Composting Handbook

The Art and Science of Composting – Leslie Cooperband

Putting Order in Odour – Paul van der Werf

Benefits of Low Head Space In-vessel Composting – Engineered Compost Systems

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Health Impacts of Compost Air Emissions – Literature Review, Ellen Harrison

Coast Environmental, Employee Safety Manual – topics covered include: Personnel Protective Equipment, Lockout / Tagout, Confined Space Entry, Hygiene Protocol, Ladder Safety, etc.

The guidance documents above will be assembled in a binder located at the facility for site personnel to review/reference. Personnel may also be enrolled in appropriate compost courses as the need and/or opportunity arises.

The training program includes the following:

Overview of Composting
– biological process: microorganisms, fungi, bacteria, etc.
– Objectives – pathogen destruction and product quality production

Principals of Aerobic Composting
- feedstock mixing ratios/requirements
- feedstock characteristics: moisture, particle size, bulk density
- bulking agent – moisture, porosity, pile structure, c/n ratio
- aeration basics – oxygen requirements and control for temperature

Covered Aerated Pile Composting (Gore Cover)
- construction of windrows for proper height and shape
- in vessel gore cover system
- odour and moisture control (benefits of gore cover)
- positive aeration (piping, blower, etc and benefits of gore cover)
- monitoring (gore system monitors both temp and 02 levels within pile)
- Labeling piles, data collection, sampling and record keeping using the Gore comptroller system.
- Cross-contamination, pile teardown, turning, curing and final product storage.

Odour Control
- Benefits of gore cover in reducing odours, emissions (air quality compared to non -covered ASP systems)
- Separation of mix/receiving area and utilization of biofilter for odour control.

Record Keeping

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- Automated software (Gore comptroller) - control points, data recording, parameters, graphs, etc.

Equipment Specifications
- Building Information
- Gore Cover system
- Loader and mixer specifications
- Biofilter design and maintenance

Compost Staff Training
- Staff have received 40hrs of hands on basic compost training as above and specific training on the Gore Cover technology through Mateo Ocejo, P.Eng of Net Zero Waste, the authorized Gore service representative.
- Gore also requires/conducts a complete review of both the Standard Installation Guide as well as a specific Operation Manual for the system. This training and information is a requirement of purchasing the Gore Cover technology. This is conducted again directly with Mateo Ocejo, P. Eng of Net Zero Waste.
- Gore Cover Systems keeps copies of all installations and training programs are acknowledged and signed off by all staff.

By signing below, staff acknowledge having read all guidance documents as above that form part of training program as well as participating in the required Gore Cover training program, and reviewing the Gore Cover Installation and Operation Manuals.

Staff **Date**

Staff **Date**

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Staff **Date**

Appendix A
Compost Flow Chart

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Appendix B

Daily Compost Site Inspection Report