



Environment and Parks

APPROVAL

PROVINCE OF ALBERTA

**ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT
R.S.A. 2000, c.E-12, as amended.**

APPROVAL NO.: 18701-02-00

APPLICATION NO.: 008-18701

EFFECTIVE DATE: **DEC 14 2016**

EXPIRY DATE: *December 14, 2026*

APPROVAL HOLDER: CROWSNEST/PINCHER CREEK LANDFILL ASSOCIATION

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ACTIVITY: CONSTRUCTION, OPERATION AND RECLAMATION OF

the Crowsnest/Pincher Creek Class II Landfill where more than 10,000 tonnes per year of non-hazardous waste is disposed of

is subject to the attached terms and conditions.

Designated Director under the Act: *Kathleen Murphy*

Date Signed: **DEC 14 2016**

TERMS AND CONDITIONS ATTACHED TO APPROVAL

PART 1: DEFINITIONS

SECTION 1.1: DEFINITIONS

- 1.1.1 All definitions from the Act and the regulations apply except where expressly defined in this approval.
- 1.1.2 In all PARTS of this approval:
- (a) "Act" means the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c.E-12, as amended;
 - (b) "active landfill area" means the portion of the landfill that has received or is receiving waste for disposal, where final cover has not been placed and includes areas that are being used for interim management of waste and recyclable prior to disposition;
 - (c) "APEGA" means the Association of Professional Engineers and Geoscientists of Alberta;
 - (d) "application" means the written submissions from the approval holder to the Director in respect of application number 008-18701 and any subsequent applications where amendments are issued for this approval;
 - (e) "biomedical waste" means biomedical waste as defined in the *Waste Control Regulation* (AR 192/1996), as amended;
 - (f) "bulk liquid" means a liquid transported in a vehicle tank or body that is not contained in barrels or other such containers;
 - (g) "certified operator" means a person who holds a valid Certificate of Qualification recognized by the Director;
 - (h) "Class II landfill" means a Class II landfill as defined in the *Waste Control Regulation* (AR 192/1996), as amended;
 - (i) "compliance boundary" means the location or locations where measurements of groundwater quality or subsurface landfill gas for regulatory purposes are taken to assess the landfill's performance;
 - (j) "construction quality assurance" means an integrated system of management activities involving planning, implementation, documentation, assessment, reporting and quality improvement to identify the level to which construction is in compliance with the specifications;
 - (k) "construction quality control" means the overall system of technical activities that measures the attributes and performance of construction to verify that the construction meets the specifications;

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- (l) "container" means any portable device in which a substance is kept, including but not limited to drums, barrels and pails;
- (m) "control chart" means a graph plotting analytical concentrations versus time, with control points designed to alert the analyst to trends beyond normal sampling variability, before established criteria are exceeded;
- (n) "cover" means soil or other approved material that is used to cover compacted waste in a landfill cell;
- (o) "daily cover" means a cover placed on compacted waste on the working face;
- (p) "day", when referring to sampling, means any sampling period of 24 consecutive hours;
- (q) "decommissioning" means the dismantling and decontamination undertaken subsequent to the termination or abandonment of any activity or any part of any activity regulated under the Act;
- (r) "decontamination" means the treatment or removal of substances from the landfill and affected lands, excluding waste that is buried in landfill cells for final disposal;
- (s) "Detailed Construction Plan and Specifications" means the plan and specifications, signed and stamped by a professional registered with APEGA, that are issued for construction or tendering;
- (t) "Director" means an employee of the Government of Alberta designated as a Director under the Act;
- (u) "disease vectors" means animals capable of transmitting disease to humans;
- (v) "dismantling" means the removal of buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling facilities, railways, roadways, pipelines and any other installations that are being or have been used or held for or in connection with the landfill;
- (w) "dispose", when used with reference to the disposal of waste at a landfill, means dispose as defined in the *Waste Control Regulation* (AR 192/1996), as amended;
- (x) "domestic wastewater" means wastewater that is the composite of liquid and water-carried wastes associated with the use of water for drinking, cooking, cleaning, washing, hygiene, sanitation or other domestic



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purposes, together with any infiltration and inflow wastewater, that is released into a wastewater collection system;

- (y) "domestic wastewater system" means the parts of the landfill that collect, store or treat domestic wastewater generated at the landfill;
- (z) "effective distance downwind" means at a distance and orientation downwind from the working face where the most amount of fugitive waste is captured by the litter catch fence;
- (aa) "effective distance upwind" means at a distance and orientation upwind from the working face where the wind screen provides the most amount of wind protection for the working face;
- (bb) "explosive" means explosive as defined in the *Explosives Act* R.S.C., 1985, c. E-17, as amended;
- (cc) "final cover" means a designed system, natural or manmade, that is placed on the surface of a landfill or a landfill cell that has reached its maximum designated waste elevation to control transmission of moisture and gas, and that conforms to the end use plan;
- (dd) "final landfill closure" means the period of time when waste is no longer accepted for disposal in the landfill and activities are undertaken to complete the final cover system and decommissioning, and includes the construction of any additional components or monitoring systems that are necessary for landfill post-closure care;
- (ee) "fugitive emissions" means emissions of substances to the atmosphere other than ozone depleting substances, originating from a landfill source other than a flue, vent, or stack but does not include sources which may occur due to breaks or ruptures in process equipment;
- (ff) "fugitive waste" means substances originating from the landfill that are moved by natural forces, including but not limited to the following:
 - (i) styrofoam,
 - (ii) paper,
 - (iii) cardboard, or
 - (iv) plastic;
- (gg) "geomembrane" means a sheet of manufactured synthetic material designed to control the migration of liquid and gas;

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- (hh) "grab", when referring to a sample, means an individual sample collected in less than 30 minutes and which is representative of the substance sampled;
- (ii) "groundwater" means groundwater as defined in the *Water Act*;
- (jj) "groundwater control underdrain system" means a system that is located underneath a liner in a landfill cell and includes a permeable drainage layer, a network of perforated pipes, and underdrain collection wells from which groundwater can be gathered and removed;
- (kk) "hydrocarbon contaminated soil" means soil contaminated with hydrocarbon but does not include soil containing hydrocarbons;
- (ll) "ISO/IEC 17025" means the international standard, developed and published by International Organization for Standardization (ISO), specifying management and technical requirements for laboratories;
- (mm) "incompatible wastes" means substances which, when mixed, can produce effects which are harmful to human health or the environment such as heat, pressure, fire, explosion, violent reaction, toxic dusts, mists, fumes or gases, or flammable fumes or gases;
- (nn) "industrial landfill cell" means the landfill cell where non-hazardous industrial solid waste, asbestos waste, off-spec sulphur, soil contaminated with sulphur, hydrocarbon contaminated soil, soil containing hydrocarbons and non-dangerous oilfield wastes are disposed of;
- (oo) "industrial landfill cell composite liner" means a liner comprised of:
 - (i) clay material that:
 - (A) has been compacted to achieve an in-place hydraulic conductivity of 1×10^{-9} metres/second or less, and
 - (B) has a minimum thickness of 1.0 metre at all points, measured perpendicular to the slope,
 - (ii) with or without a geosynthetic clay liner overlaid on the top of the clay material, and
 - (iii) a high density polyethylene geomembrane that:
 - (A) has a minimum thickness of 60 mil, and
 - (B) has been placed directly on the top surface of the compacted clay or the geosynthetic clay liner;

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- (pp) "industrial solid waste" means solid waste resulting from or incidental to any process of industry;
- (qq) "intermediate cover" means a cover placed where a working face will not be located for 15 days or more;
- (rr) "landfill" means all buildings, structures, landfill cells, storage facilities, waste or material handling facilities, process and pollution abatement equipment, vessels, trenches, roadways, railways, berms, monitoring wells, pipelines and other installations, and includes the land, located on the W ½ of Section 8, Township 7, Range 1, West of the 5th Meridian that is being or has been used or held for or in connection with the Crowsnest/Pincher Creek Class II landfill;
- (ss) "landfill cell" means a designed or designated area of the landfill comprised of an excavation or earthen structure in which waste is enclosed;
- (tt) "landfill gas" means a mixture of gases generated by the microbial decomposition of and chemical reactions between wastes in the landfill;
- (uu) "landfill gas collection system" means a system that gathers landfill gas so that landfill gas may be removed from the landfill and includes landfill gas collection wells, piping, vacuums or pumps to move landfill gas out of the landfill;
- (vv) "leachate" means a liquid that has been in contact with waste and has undergone chemical or physical changes;
- (ww) "leachate collection system" means a system that gathers leachate so that leachate may be removed from the landfill and includes a permeable drainage layer, a network of perforated pipes, and sumps or manholes from which leachate can be removed;
- (xx) "leachate pond" means a pond that is designed for the temporary storage of leachate;
- (yy) "LEL" means a lower explosive limit that is the lowest percentage by volume of explosive vapour or gas in air that will propagate a flame at 25 degrees Celsius at atmospheric pressure when the mixture is ignited;
- (zz) "liner" means a continuous layer placed beneath and at the sides of a landfill cell that is compatible with the waste and restricts the migration of leachate, or landfill gas or both;
- (aaa) "local environmental authority" means the Department of Environment and Parks, in the Province of Alberta, or the agency that has the equivalent responsibilities for any jurisdiction outside the Province;



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- (bbb) "maximum acceptable leachate head" means the maximum depth of leachate above the primary liner, not including the sumps or leachate pipe trenches;
- (ccc) "maximum designated waste elevation" means the maximum elevation of waste in metres above sea level as described in the application;
- (ddd) "monitoring system" means all equipment used for sampling, conditioning, analyzing or recording data in respect of any parameter listed or referred to in this approval including equipment used for continuous monitoring;
- (eee) "month" means calendar month;
- (fff) "moveable litter catch fence" means a framed mesh fence that can be moved to a position downwind of the working face for the purpose of catching wind-blown waste;
- (ggg) "movable wind screen" means a barrier that can be moved to a position upwind of the working face for the purpose of reducing the wind velocity and turbulence at the working face;
- (hhh) "municipal solid waste" means solid waste resulting from or incidental to municipal, community, commercial, institutional and recreation activities, and includes garbage, rubbish, ashes, street cleanings, abandoned automobiles and all other solid wastes except hazardous waste, industrial solid waste, oilfield waste and biomedical wastes;
- (iii) "municipal landfill cell" means the landfill cell where municipal solid waste is disposed of;
- (jii) "municipal landfill cell composite liner" means a liner comprised of:
 - (i) clay material that:
 - (A) has been compacted to achieve an in-place hydraulic conductivity of 1×10^{-9} metres/second or less, and
 - (B) has a minimum thickness of 0.6 metres at all points, measured perpendicular to the slope,
 - (ii) with or without a geosynthetic clay liner overlaid on the top of the clay material, and
 - (iii) a high density polyethylene geomembrane that:
 - (A) has a minimum thickness of 60 mil, and

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- (B) has been placed directly on the top surface of the compacted clay or the geosynthetic clay liner;
- (kkk) "new landfill cell" means any landfill cell that is constructed following the issuance of this approval;
- (lll) "NORM Waste" means any waste material with concentrations of NORM above the limits specified in Tables 5.1, 5.2, or 5.3 of the *Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials* (NORM), Health Canada, 2011, as amended;
- (mmm) "nuisance" means litter, odour, dust, fire and disease vectors;
- (nnn) "off-spec sulphur" means elemental sulphur (typically greater than 95% sulphur) that is contaminated with an impurity that makes it a waste because it is not marketable;
- (ooo) "oilfield waste" means oilfield waste as defined in the *Waste Control Regulation* (AR 192/1996), as amended;
- (ppp) "post-closure" means the period of time after completion of the final landfill closure;
- (qqq) "primary liner" means the uppermost liner;
- (rrr) "record drawing/document" means a document prepared by a professional member of APEGA to record design changes to an initial design for which he or she has accepted responsibility and which represents the final design of the project that were either approved or authorized according to the terms and conditions of this approval. This document typically is issued or retained as verification that on-site conditions are in accordance with the final design;
- (sss) "regulations" means the regulations enacted pursuant to the Act, as amended;
- (ttt) "representative grab" means a sample consisting of equal volume portions of water collected from at least four sites between 0.20-0.30 metres below the water surface within a pond;
- (uuu) "run-off" means any rainwater or melt water that drains as surface flow from the active landfill area, excluding leachate;
- (vvv) "run-off control system" means the parts of the landfill that collect, store or treat run-off from the landfill;
- (www) "run-on" means any rainwater or melt water that drains or may drain as surface flow onto the active landfill area;

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- (xxx) "run-on control system" means parts of the landfill that divert landfill run-on away from the active landfill area;
- (yyy) "secondary leachate collection system" means a system that gathers and monitors liquids between a primary liner and a secondary liner system;
- (zzz) "secondary liner" means the lowermost liner of a double liner system;
- (aaaa) "soil" means mineral or organic earthen materials that can, have, or are being altered by weathering, biological processes, or human activity;
- (bbbb) "soil containing hydrocarbons" means soil containing hydrocarbon as defined in the *Waste Control Regulation* (AR 192/1996), as amended;
- (cccc) "Standards" means *Standards for Landfills in Alberta*, Alberta Environment, 2010, as amended;
- (dddd) "subsoil" means a layer of soil directly below the topsoil layer that
- (i) contains roots or the root zone,
 - (ii) is typically lighter in colour than the topsoil layer, and
 - (iii) consists of the B and C horizons as defined in *The Canadian System of Soil Classification* (Third Edition), Agriculture and Agri-Food Canada, Publication 1646, 1998, as amended;
- (eeee) "tank" means a stationary device, designed to contain an accumulation of a substance, which is constructed primarily of non-earthen materials that provide structural support including wood, concrete, steel, and plastic;
- (ffff) "topsoil" means the uppermost layer of soil and consists of:
- (i) the A-horizons and all organic horizons as defined in *The Canadian System of Soil Classification* (Third Edition), Agriculture and Agri-Food Canada, Publication 1646, 1998, as amended, and
 - (ii) the soil ordinarily moved during tillage;
- (gggg) "upper subsoil" means the layer of soil directly below the topsoil layer that consists of the B-horizons as defined in *The Canadian System of Soil Classification*, (Third Edition), Agriculture and Agri-Food Canada, Publication 1646, 1998, as amended;
- (hhhh) "week" means any consecutive 7-day period;
- (iiii) "working face" means that portion of the active landfill area where waste is currently being placed, deposited, spread and compacted; and



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(jjjj) "year" means calendar year, unless otherwise specified.

PART 2: GENERAL

SECTION 2.1: REPORTING

- 2.1.1 The approval holder shall immediately report to the Director by telephone any contravention of the terms and conditions of this approval at 1-780-422-4505.
- 2.1.2 The approval holder shall submit a written report to the Director within 7 days of the reporting pursuant to 2.1.1.
- 2.1.3 The approval holder shall immediately notify the Director in writing if any of the following events occurs:
- (a) the approval holder is served with a petition into bankruptcy;
 - (b) the approval holder files an assignment in bankruptcy or Notice of Intent to make a proposal;
 - (c) a receiver or receiver-manager is appointed;
 - (d) an application for protection from creditors is filed for the benefit of the approval holder under any creditor protection legislation; or
 - (e) any of the assets which are the subject matter of this approval are seized for any reason.
- 2.1.4 If the approval holder monitors for any substances or parameters which are the subject of operational limits as set out in this approval more frequently than is required and uses procedures authorized in this approval, then the approval holder shall provide the results of such monitoring as an addendum to the reports required by this approval.
- 2.1.5 The approval holder shall submit all annual reports required by this approval to be compiled or submitted to the Director on or before March 31 of the year following the year in which the information was collected, unless otherwise specified in this approval.

SECTION 2.2: RECORD KEEPING

- 2.2.1 The approval holder shall:
- (a) record; and
 - (b) retain

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all the following information in respect of any sampling conducted or analyses performed in accordance with this approval for a minimum of ten years, unless otherwise authorized in writing by the Director:

- (i) the place, date and time of sampling,
- (ii) the dates the analyses were performed,
- (iii) the analytical techniques, methods or procedures used in the analyses,
- (iv) the names of the persons who collected and analysed each sample, and
- (v) the results of the analyses.

SECTION 2.3: ANALYTICAL REQUIREMENTS

2.3.1 With respect to any sample required to be taken pursuant to this approval, the approval holder shall ensure that:

- (a) collection;
- (b) preservation;
- (c) storage;
- (d) handling; and
- (e) analysis

shall be conducted in accordance with the following unless otherwise authorized in writing by the Director:

- (i) for air:
 - (A) the *Air Monitoring Directive*, Alberta Environment, 1989, as amended;
- (ii) for leachate, run-off and groundwater:
 - (A) the *Standard Methods for the Examination of Water and Wastewater*, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 2012, as amended;
- (iii) for whole effluent toxicity tests:

