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G-M PEARSON ENVIRONMENTAL INC

Canadian Environmental Assessment Act Project Summary

Ryley Biomedical Waste Incinerator

307074-01969-300 – EN-REP-0002

23 January 2015

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PROJECT 307074-01969-300 - CANADIAN ENVIRONMENTAL ASSESSMENT ACT PROJECT SUMMARY

REV	DESCRIPTION	ORIG	REVIEW	WORLEY-PARSONS APPROVAL	DATE	CLIENT APPROVAL	DATE
0	Issued as final	C. Petch	T. Jacklin	T. Jacklin	06-Jan-15		
1	Re-issued as final	C. Petch	T. Jacklin/ G. Ramesh	T. Jacklin	23-Jan-15		

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Any questions concerning the information or its interpretation should be directed to C. Petch or T. Jacklin.

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1. GENERAL INFORMATION AND CONTACTS

On behalf of G-M Pearson Environmental Inc. (the Proponent), WorleyParsons Canada Services Ltd. (WorleyParsons) has prepared this Project Description for the purpose of determining whether a federal environmental assessment is required for a potentially designated project pursuant to the Canadian Environmental Assessment Act (CEAA) (Government of Canada 2012).

The Proponent is an Alberta-owned company that has operated a biomedical waste incinerator in Wainwright, Alberta under the Alberta Environmental Protection and Enhancement Act (EPEA, Government of Alberta 2014a) Approval 9846-01-00 (under Approval holder Wainwright Regional Waste to Energy Authority [WtE]), which expires in January 31st 2015.

G-M Pearson anticipates that the Wainwright Facility will be decommissioned during 2016 and plans a new Biomedical Waste Incinerator Facility (the Project) in the Equity Industrial Park in Beaver County adjacent to the Village of Ryley Alberta (refer to Figure 1). The Project will use the latest, proven technology and will be located closer to Alberta's population corridor (Edmonton – Red Deer – Calgary and outlying towns).

The address for the Proponent is:

2333 119 Avenue, NE, Edmonton, Alberta, T6S 1A9

Website: http://www.gmpearson.ca/

The Chief Executive Officer and the principal contact for the Project Description is Mr. Joe Kress:

Email address: joe@gmpearson.ca

Office phone: (780) 473-6633 Mobile: (780) 915-6874

1.1 Consultation

The Project Description Summary Report has been prepared following consultation with Ms. Susan Tiege and Ms. Tawanis Testart of the Canadian Environmental Assessment Agency (CEAA). No other public or aboriginal stakeholders or regulatory agencies under provincial or municipal jurisdictions have been consulted with respect to the preparation of the Project Description.

Further details of this consultation are provided in Section 6 and Section 7.

1.2 Other Relevant Information

The project site lies with the Equity Industrial Park Area Structure Plan (Beaver County 2009). Although the Project lies outside of the municipal boundaries for the Village of Ryley, the Project footprint is located within the Ryley Inter-municipal Development Plan Area and is designated for "general industrial" future land use. A development permit has been applied for and is under review by local municipality.

Pursuant to Schedule 1 of the Alberta Environmental Protection and Enhancement Act (EPEA) Environmental Assessment (Mandatory and Exempted Activities) Regulation (Government of

Alberta 1993), the development of a “biomedical waste incinerator” is not considered an activity for which an EIA must be conducted prior to receiving approval from Alberta Environment and Sustainable Resource Development (ESRD). On February 27, 2014, ESRD confirmed that the completion of an EIA in accordance with the EPEA is not required for the Project.

ESRD is responsible for approvals for specific facilities such as incinerator facilities. Pursuant to Schedule 1, Division 1, Clause A of the EPEA Activities Designation Regulation (Government of Alberta 2003), the Ryley Facility is considered to be an activity for which an Approval must be obtained. An EPEA Approval application was submitted to ESRD on October 31, 2014.

In accordance with the Historical Resources Act a Historical Resources Act Clearance will be sort through Alberta Culture and Tourism’s online permitting and clearance system with the submission of a historic resources application.

1.3 Regional Environmental Studies

There are no Regional Environmental Studies as defined under the CEAA, 2012 that apply to the region in which the Project is located.

2. PROJECT INFORMATION

In the Province of Alberta opportunities for the safe handling and disposal of biomedical waste are severely limited. According to ESRD the recommended management option for the disposal of biomedical waste is by incineration at approved facilities. Incineration has traditionally been the principal method to destroy anatomical and non-anatomical biomedical wastes. There is one facility in Alberta licensed to accept biomedical waste (the Wainwright WtE facility which the Proponent operates Proponent proposes to construct a new state of the art facility to replace the Wainwright facility when it closes in January 2016. It is proposed that the incinerator be approved to process ~ 1, 400 Kg per hour of waste.

2.1 Regulation Designating Physical Activities

Canadian Environmental Assessment Act, 2012 defines the regulations designating physical activities (Government of Canada 2012). Pursuant to Paragraph 29 of the Canadian Environmental Assessment Act, 2012 (Government of Canada 2012) Regulations:

> 29. The construction, operation, decommissioning and abandonment of a new facility used exclusively for the treatment, incineration, disposal or recycling of hazardous waste.

The Agency does not define “hazardous waste” but uses the definition from Environment Canada:

> Biomedical waste is defined in Schedule 3 of the Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations SOR/2005-149 issued under the Canadian Environmental Protection Act (Government of Canada 2005).

Consequently, the proposed Facility is considered to be a Designated Project.

2.2 Components and Activities

The physical works will include the construction of an enclosed building containing a rotary kiln incinerator office space, three water tanks for cooling water, air pollution control equipment (baghouse, lime storage silo, activated carbon silo), stormwater management facilities and site grading (see Figure 2).

The Project is being designed to incinerate approximately 1,400 kg/ hour of waste. The Project site is approximately 1.42 hectares (3.51 acres) and the proposed building will occupy approximately 975 m^2 (10,500 ft^2). There will also be an attached on site office that will be approximately 147 m^2 (1,600 ft^2). Figure 1 illustrates the size and location of the Project’s parcel within the industrial park.

The proposed Project will use treated wastewater from the Village of Ryley for use as industrial cooling water in the Facility. In support of the Project, a 500 m long water supply line will be constructed to transfer treated wastewater from the Village of Ryley wastewater lagoons to the project site. The pipeline will run parallel to and within an existing right-of-way north from the Facility to the Village of Ryley wastewater lagoons.

2.3 Project Emissions

The Project will have one main exhaust stack, a building heat vent stack, tank vents, and an emergency generator stack. G-M Pearson is committed to using state of the art technologies to ensure that emissions are minimized and regulations are met. The incinerator selected will provide for cleaner and consistent incineration of the waste, particularly due to the rotary design of the chamber. The exhaust gases from the rotary kiln incinerator will be directed to the afterburner to ensure the destruction of any residual organic material entrained in the exhaust fumes. The afterburner combustion exhaust gases flow to the combustion off-gas treatment system for cooling, acid gas scrubbing and filtration. The combustion exhaust gases from the afterburner will be cooled down to a temperature suitable for the baghouse. Cooling will be done in the quench tower. In the baghouse, activated carbon and acid gas sorbents (lime) will be injected into the cooled combustion exhaust gases to remove the volatile metals and trace organic materials. The acid gas sorbent will react with the acid gases to form salt products that are then removed by the fabric filters. Fine particulates will also be removed by the fabric filters.

A continuous emission monitoring system (CEMS) system will be in place to provide continuous emission monitoring. A manual stack survey for emissions will also be undertaken once per year.

Air dispersion-modelling was performed to assess the suitability and capacity of the proposed treatment and release control systems. Dispersion modeling has predicted that the air emission treatment and release control systems are acceptable and that emissions will comply with the Alberta Ambient Air Quality Guidelines (WorleyParsons 2014b).

Preliminary engineering data provided by the rotary kiln vendor indicates an operational carbon dioxide equivalent (CO_2e) mass flow rate of 2.2 tons per hour or approximately 19,272 tons per year (T/Y) assuming a constant rotary kiln operating rate of 24-hours per day, 365 days per year. 19,272 T/Y would represent only 0.04% of the 2012 total Canadian national annual CO2e emissions from the “waste and others” sector. Therefore, the Project will be an insignificant source of greenhouse gas emissions and because it will only emit 19,272T/Y of CO_2e, it does not meet the trigger level of 50,000 T of CO_2e under Alberta’s Specified Gas Emitters Regulation (Government of Alberta 2007) that requires facilities to report their greenhouse gas emissions under the program.

All the water used in the incinerator system is evaporated during the quenching process. There is no process wastewater stream. Wash water generated during equipment and vehicle cleaning events will be captured in a two compartment sump and directed to the Wash Water Tank for process use.

The biomedical waste incineration system will use Ryley’s wastewater and water from the Wash Water Tank to cool the incinerator and the incinerators off gas. The wastewater from the Ryley wastewater plants effluent and filtered prior to use in the incinerator system. The water will be used to cool the rotary kiln and to cool the off gas from the afterburner prior to the gas entering the off gas treatment system

Only the required amount of water is injected into the system. Therefore, there is no waste water from the system as all the water (approximately 108 litres per minute) is evaporated and exits the stack as vapor.

Drainage and surface water runoff will be controlled by a system of graded slopes, pipes and ditches. Surface runoff at the Project site will be diverted to an on site stormwater pond. Water collected will be stored for use in the incinerator quench tower.

Ash waste will be disposed of to the adjacent approved licensed landfill site. Any incidental nonhazardous waste generated during operations will be incinerated on site.

2.4 Project Phases and Scheduling

The Project duration including timelines and associated milestones is provided in Table A.

Table A Project Timelines

Milestone	Timeline
Public Consultation & Engagement	December, 2013 to present. Stakeholder updates are ongoing. Next Public Meeting Jan 13, 2015.
ESRD Application Submitted	October 31, 2014
Construction Start Date	April 1, 2015
Incinerator Start-up	December 1, 2015
Cessation of Operations	anticipated to be >30 years

A construction plan will be prepared by the selected contractor prior to construction commencing. The plan will show the construction area, and access, parking, waste storage and laydown provisions. Topsoil within areas that will be required for construction will be salvaged and stockpiled on site. The stockpile will be stabilized as soon as practicable with grass seed. Salvaged topsoil will be used on site for landscaping where possible. The estimated Project construction schedule is shown below in Table B Schedule for Construction:

Table B Approximate Schedule for Construction

Activity	Schedule
Approval granted by ESRD	Q1 2015
Site clearing and grading	Q2 2015
Foundations	Q2 2015
Building structures	Q2 - Q3 2015

Activity	Schedule
Incinerator installation	Q3 – Q4 2015
Electrical installation	Q4 2015
Facility Operational	Q4 2015

The design life of the Project will exceed 30 years. The property is industrial zoned and is expected to continue to have industrial use. If operations were suspended, the equipment would be purged of any product, all tanks and vessels emptied and contents disposed appropriately, equipment and facilities removed, any contamination issues resolved, and the Site sold for future industrial use. In the event of decommissioning a Decommissioning and Land Reclamation Plan will be prepared in advance of the end of design life and will be submitted to ESRD for approval.

3. PROJECT LOCATION

The Project site is situated in the Equity Industrial Park immediately east of the Municipal Limits of the Village of Ryley, Alberta. Edmonton, the nearest city, is located approximately 86 km away. The Project site is owned by G-M Pearson. A location plan is provided in Figure 1 and the Equity Industrial Park Structure Plan is shown in Figure 3. A site plan is provided in Figure 2.

The street address is: 31 - 50025 Range Road 173, Equity Industrial Park, Ryley, Alberta, T0B 4A0.

The latitude and longitude of the Project site are 53°17’33N 112°24’19”W respectively.

The nearest Aboriginal land area is approximately 80 km from the Project site (Figure 4). There is no current aboriginal use at the site for traditional purposes. The Project will not require access to, use or occupation of, or the exploration, development and production of lands and resources currently used for traditional purposes by Aboriginal peoples.

The project is not located on federal land and there is no federal land within approximately 10 km of the Project site. Figure 5 illustrates the nearest crown land to the Project site.

Municipally, the Site is within the area covered by the Beaver County Municipal Development Plan (Beaver County 2013a) and the Beaver County Land Use Bylaw (Beaver County 2013b). The land is designated as Rural Industrial District according to the Land Use District Map 10.4, Beaver County (2010a) and as General Industrial in Map 1C of the Beaver County Municipal Development Plan (Beaver County 2010b). The industrial park is within the Equity Industrial Park Area Structure Plan.

The land-use surrounding the Project site includes agriculture, and the Village of Ryley including municipal and rural industrial facilities. Nearby industrial development includes the Beaver Regional Waste Management Services Landfill, located 550 m north. This is a Class II landfill facility and is 160 ha in size and accepts municipal waste, contaminated soils, waste sludge, construction and demolition debris, and asbestos waste. Additional industrial and commercial ventures include a tank manufacturing company, ATCO Electric, a humalite processing facility (Black Earth - a soil processing/mixing company) and warehousing.

Figure 6 shows the Project site in relation to environmental sensitive, protected, or designated areas.

4. FEDERAL INVOLVEMENT – FINANCIAL SUPPORT, LANDS AND LEGISLATIVE REQUIREMENTS

There are no other federal legislative or regulatory requirements (including any federal license or permit) that are applicable to the Project.

No federal authority will be providing any financial support for the Project and nor will federal lands be required for the Project.

The Proponent will comply with all legislative requirements for the auxiliary activity of the transportation of the biomedical waste.

5. POTENTIAL ENVIRONMENTAL EFFECTS

5.1 Site Conditions

5.1.1 Local and Regional Vegetation Types

Vegetation in the Central Parkland Natural Subregion contains a mixture of grasslands, mixed deciduous and mature aspen forests, saline wetlands, shrublands and sparse communities stabilizing sand dune slopes (NRC 2006). The Project site is dominated by herbaceous and graminoid vegetation communities, consisting primarily of grasses and herbs. Only two trees occur within the Project site, both are cottonwood poplar (*Populus deltoides*), and both are less than 2 m tall. There are no shrubs within the Project site.

A search of the Alberta Conservation Information Management System (ACIMS) revealed that there are no element occurrences within Township 37, Range 9, West of the 5th Meridian (ESRD 2014b). This includes both rare and non-rare plants and ecological communities.

5.1.2 Wildlife

Limited wildlife and signs of wildlife were seen during a July 2014 site reconnaissance. Two songbirds were flushed from the herbaceous vegetation community, several species of butterflies, mosquitoes, several gopher burrows, the bed of an ungulate along the west side of the Project site, as well as a wildlife trail in the northeastern part of the Project site.

A report was generated using ESRD's Fish and Wildlife Internet Mapping Tool (FWIMT) using a 5 km buffer radius. The results of the mapping are shown below in Table C (ESRD 2014a):

Table C Species Summary Report

Fish Inventory	Wildlife Inventory	Sensitive Species
Fathead minnow	Barn swallow	Yes
	Green-winged teal	No
	Least flycatcher	Yes
	Northern pintail	No
	Sora	No
	Swainson's hawk	Yes

* As categorized by the general status assessment process of ESRD - Wildlife Management

5.1.3 Soils

The land capability class and rating displayed on the Canada Land Inventory Soil Capability for Agriculture map (Edmonton, 83H). NW 3-50-17W4 is categorized as Class 2, indicating moderate limitations that restrict the range of crops or require moderate conservation practices. The area is deemed as subclass S, signifying soil limitations, whether by undesirable structure, low permeability, a restricted rooting zone, low natural fertility, low moisture holding capacity or salinity.

According to a previous soil survey report (Alberta Research Council 1988), the parent material of the local area, consists of mostly fine loamy brown till of variable thickness with some gray till at the surface deposited within an undulating to slightly hummocky terrain characterized by numerous scattered depressions. Soils consist of mostly well-drained, Black Solonetzic (Solodized Solonetz and Solod) soils with poorly-drained Humic Gleysols in scattered depressions in addition to some Chernozemic soils and Gleyed subgroups (Alberta Research Council 1988).

5.1.4 Surface Watercourses and Drainage

The Project site is situated in the Beaverhill Watershed and the major drainage feature in the region is the North Saskatchewan River, which is located approximately 78 km north of the site. The Vermilion River, a tributary of the North Saskatchewan River, is located about 14 km northeast of the site. Beaverhill Lake, located about 15 km northwest of the site, is a lake that was designated a Wetland of International Importance by the Ramsar Convention in 1987. The Beaverhill Natural Area, including Beaverhill Lake, was also established in 1987 and is significant habitat for migrating birds. This area is also protected under the Alberta Provincial Government's Wilderness Areas, Ecological Reserves and Natural Areas Act (1981), now known as the Wilderness Areas, Ecological Reserves, Natural Areas and Heritage Rangelands Act (Government of Alberta 2013a).

Regional surface drainage generally moves north-north-east.

There are no aquatic habitats, e.g. water bodies or watercourses, in the Project site. A seasonal low lying drainage area present approximately 360 m east of the Project site, and a dugout is present about 50 m southeast. There are no wetlands in the Project site; however, several low lying wet areas occurred within 250 m east and northwest of the Project site that were tentatively classified as Class II, Temporary Wetlands, under the Stewart and Kantrud (1971) wetland classification system.

5.1.5 Groundwater

There are no aquifers of note documented to be beneath the Project site. Saturated sand and gravels are reported of limited areal extent in the study area. Total dissolved solids concentrations for wells completed in the surficial deposits for the County of Beaver were <1,500 mg/L (Hydrogeological Consultants Ltd. 1999) (WorleyParsons 2014a).

The bedrock aquifers beneath the site include the Bearpaw Formation, Oldman Formation, and the Foremost Formation (Continental) (Hydrogeological Consultants Ltd. 1999) (WorleyParsons 2014a). Underlying the Foremost Formation is the Lea Park Formation, consisting of very low permeability shales

(aquitard) and with thickness in the range of 100 to 200 m (WorleyParsons 2014a). The depth to the top of the Bearpaw Formation within the study area is in the order of 30 m below ground surface (mbgs). The Bearpaw Formation is characterized by expected yields of <15 imperial gallons per minute (igpm). Total dissolved solids concentrations in this formation range from 500 to 2,000 mg/L. The depth to the top of the Oldman Formation within the study area within the Project site is in the order of 60 mbgs. Yields in this formation are expected yields are <1.5 igpm while total dissolved solids concentrations range from 500 to 3,000 mg/L. Deeper, the depth to the Foremost Formation (Continental): is 120 mbgs. Expected yields are within the Foremost Formation are <1.5 igpm. Total dissolved solids concentrations here range from 1,000 to 3,000 mg/L.

5.1.6 Air Quality

Ambient or background air quality is defined as ambient concentrations that occur in the absence of the Project. Other potential sources could include other facilities, communities and traffic. Ambient air quality data for nitrogen dioxide (NO_2), sulphur dioxide (SO_2), and particulate matter up to 2.5 micrometres ($PM_{2.5}$) were obtained from the Edmonton East monitoring station. Its elevated background level due to being an urban setting provides a conservative estimate of the ambient air quality for the Project site. Table D presents the ambient air quality data relevant to the project site.

Table D Background NO_2, SO_2 and $PM_{2.5}$ Concentrations based on 2013 Measurements at the Alberta Capital Airshed Alliance (ACAA)

Contaminant	Molecular Weight (g/mole)	Time Average[3]	90th Percentile (ppm)	90th Percentile (µg/m3)	Average (µg/m3)
NO_2[1]	46	1-Hour	0.033	61.3	
		Annual	-	-	11.8
SO_2[1]	64	1-Hour	0.002[3]	5.2	
		24-Hour	-	-	5.2[2]
		Monthly	-	-	5.2[2]
		Annual[2]	-	-	5.2[2]
TPM[4]	-	1-Hour	-	49.0	-
		24-Hour			49.0[2]
		Annual			49.0[2]
PM_{10}[5]	-	1-Hour	-	29.0	-
		24-Hour			

Contaminant	Molecular Weight (g/mole)	Time Average[3]	90th Percentile (ppm)	90th Percentile (µg/m3)	Average (µg/m3)
	-	Annual	-	-	29.0[2]
$PM_{2.5}$[1]	-	1-Hour	-	20.0	
		24-Hour	-	-	20.0[2]

Notes:

[1] NO_2, SO_2 and $PM_{2.5}$ background concentrations are from Edmonton East air monitoring station obtained from Clean Air Strategic Alliance (CASA), Alberta Ambient Air Data Management System.

[2] 24-Hour, monthly, and annual background concentrations are conservatively assumed to be equivalent to the 1-hour 90th percentile background concentration.

[3] Data has been verified and validated by CASA.

[4] Representative background TPM concentrations are not available hence assumed to be equivalent to the total of $PM_{2.5}$ and PM_{10} background concentrations

[5] PM_{10} background concentrations are from Edmonton South air monitoring station obtained from Clean Air Strategic Alliance (CASA), Alberta Ambient Air Data Management System.

5.2 Potential Environmental Effects

Overall, due to the location of the Project site and the nature of the area (pasture), environmental impacts as a result of the project are considered to be minimal.

The Project site is within an existing industrial park adjacent to a land reserved for landfill purposes and the Project site is not identified as providing significant wildlife habitat. Therefore environmental wildlife impacts from the Project are considered to be unlikely.

Given the distance from Beaverhill Lake, current land use within the Project footprint and implementation of applicable operational and closure measures, impacts to migratory birds are anticipated to be limited in extent and severity and are considered to be reversible during the period following closure and reclamation of the Project footprint. Furthermore, to avoid construction impacts on birds, a wildlife sweep will be conducted prior to any works which is planned to take place between April 15th and August 31st. This sweep will identify if there are nesting birds present at the site. Should any evidence of migratory birds on the site be found, ESRD will be contacted to determine a suitable management approach.

No significant issues with terrain or soil were noted for the proposed Project location. Operational soil impacts from the Project are considered to be unlikely as Project activities will take place indoors on a concrete floor; the concrete floor is constructed in such a way to collect facility wash water and recycle it as cooling water. There are three water tanks for use as cooling water at the Facility. These water tanks do not contain compounds which may cause soil or groundwater contamination. Outdoors, the small fuel tank for fuelling the loader will be portable and made using double walled steel construction with spill containment. The lime storage silo and activated carbon storage will be constructed on concrete pads which collect and drain any accumulated stormwater back into the Facility for use as cooling water thereby avoiding potential contact with soil.

There are no watercourses or wetlands present within the Project site, no process effluent will be generated from the facility, and no off site discharges of liquid wastes such as stormwater and sewage to watercourses. Liquid sewage will be transported by pipe to the municipal wastewater treatment plant while solid sewage will be transported by a truck. Stormwater will be conveyed to the on site stormwater pond. Therefore impacts on watercourses as a result of the Project are unlikely and no changes are expected to off site fish and fish habitats as defined in the Fisheries Act nor are there anticipated effects on aquatic species as defined in the federal Species at Risk Act.

There is no marine component to the project therefore there will be no impact on Marine Plants as a result of this Project.

It is considered unlikely that the project will have any impacts on groundwater as Project activities will take place indoors on a concrete floor and bunded building and there will be no process effluent generated or disposed of as part of the process. Furthermore, there will be no waste disposal on site and the inert (decontaminated) ash produced from the incinerator process will be disposed of at the adjacent landfill site. The ash will be directly loaded from the kiln/baghouse into sealable waste containers and trucked to the landfill for disposal.

An air quality assessment was completed (WorleyParsons 2014b) to evaluate possible changes in potential air quality effects, which are attributed to the Project. A standard dispersion modelling approach was used to predict maximum oxides of nitrogen (NO_x) which include nitrogen dioxide (NO_2), sulphur dioxide (SO_2), total particulate matter (TPM) and particulate matter less than 2.5 microns ($PM_{2.5}$) concentrations due to emissions from the Project.

Concentrations of NO_x, SO_2, TPM, and $PM_{2.5}$ under maximum design operation and also in the case of emergency power generation were evaluated. In all cases, the maximum ground level NO_2, SO_2, TPM, and $PM_{2.5}$ concentrations were predicted to be less than their respective Alberta Ambient Air Quality Objectives (AAAQOs Government of Alberta 2013b).

5.3 Potential Effects Related to Interprovincial/Federal/International Lands

It is anticipated that there will be no environmental effects of the Project on federal lands or on other provinces or countries. The Project is not located on federal land and there is no federal land within approximately 10 km of the Project site. Nor is the Project site located near a provincial or international border.

5.4 Potential Effects on Aboriginal Peoples from Changes to the Environment

Given the distance between the Project and the nearest aboriginal land (~80 km) and since the detailed environmental analysis of air quality and ecology impacts predicted that there would be no significant change to the environmental beyond the property line, the potential for construction and operation of the Project to affect aboriginal peoples is considered to be unlikely.

6. PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS

G-M Pearson has reviewed the location of aboriginal communities with nearest proximity to, and therefore most likely to be affected by, the Project. The aboriginal groups identified as having the greatest potential to be affected by the Project include:

- Kikino Métis Settlement;
- Buffalo Lake Métis Settlement;
- Saddle Lake Cree First Nation;
- Louis Bull First Nation;
- Ermineskin First Nation;
- Samson First Nation; and
- Montana First Nation.

Engagement and consultation with aboriginal groups has not yet been initiated however initial contact was made with Mr. Darcy Evanochoko (ESRD North Saskatchewan Regional Lead, Regulatory Consultation) regarding Aboriginal consultation for the project. Mr. Evanochoko advised that consultation with aboriginal groups is not likely to be required however this will be reviewed again upon the submission of the EPEA approval application.

G-M Pearson is committed to identifying and addressing aboriginal concerns regarding the Project, including those concerns related to aboriginal rights, health, safety and the environment. At this time G-M Pearson has reached out to aboriginal groups and the public through notification for the open house mail out (February 2014, public advertising in January and February 2014 and open house in January 2015). To date no comments of concerns have been expressed by aboriginal groups in relation to this project. Aboriginal groups will be provided with information regarding the project through the Alberta EPEA approval application process once the application and will have opportunity to raise any comments or concerns pertaining to the project.

7. CONSULTATION WITH THE PUBLIC AND OTHER PARTIES

The Proponent is committed to engaging and consulting with community stakeholder with regard to potential impacts of the Project. The Proponent is working collaboratively with the local community, stakeholders and local and provincial governments to ensure that the Project is understood by those affected and incorporates their input.

Below is a summary of the key stakeholders and groups that have been consulted with at the time of submission:

Government Bodies and Regulatory Agencies

Alberta Environment and Sustainable Resource Development (ESRD)
Federal Member of Parliament (MP)
Provincial Member of the Legislative Assembly (MLA)
Beaver County Council
Village of Ryley Mayor and Council
Canadian Wildlife Services, Environmental Stewardship Branch of Environment Canada, Beaverhill Lake

Direct Neighbours

Equity Development Park: Neighboring businesses and industries
Village of Ryley: Residents, especially those in close proximity to the industrial park
Farmers and landowners: within 800 m of the proposed Project Site

Community Group

Ryley Public Advisory Committee

Communities in the Immediate Vicinity

Holden: Located past Poe about 15 km east of Ryley - population in 2006 was 398 people.
Town of Tofield: Located about 18 km northeast of Ryley - population in 2006 was 1,876 people.
Haight: Located approximately 10 km north east of Ryley - unincorporated area.

Special Interest Groups

Nature Canada http://www.naturecanada.ca/
Beaver Hill Birds Observatory http://beaverhillbirds.com/#
The Beaver Hills Initiative www.beaverhills.ab.ca
Beaver River Watershed Alliance www.beaverriverwatershed.ca
Other special interest groups to be identified during the Consultation process

Consultation and Engagement commenced late 2013. A Project Information Package was mailed out February 4, 2014 to stakeholders groups.

Informational meetings were also held with the Village of Ryley Council on February 4, 2014, the Beaver County Council on February 19, 2014 and ESRD on May 20, 2014.

Additionally, a forum by way of an Open House in the Village of Ryley was held on February 18, 2014. It was advertised in the local weekly newspaper, the Tofield Mercury, on January 18, February 4 and February 11, 2014. An ad was also run in the February edition of the monthly newsletter, the Ryley Village Voice, on January 30, 2014. In addition, an invitation to the Open House was included in the Project Information Package which was sent to all identified stakeholders. The invitation was also posted at the Village Office and in local businesses in Ryley.

The Open House attracted a large turn-out with approximately 72 people.

Specific environmental concerns raised during the course of the public consultation process to date were:

- concern: air emissions/risks of cancers and bio-accumulation in food and the environment;
  - response: air modelling has been performed in order to ensure compliance with the Alberta Ambient Air Quality Guidelines, and
  - response: an afterburner burns any residual organic particles in the exhaust gas at 1,000°C. Only filtered exhaust gasses will be emitted. Activated carbon will remove volatile metals, semi-volatile metals and trace amounts of organic materials. Chemicals injected into the gas ducting react with any acid gases to form solid salts.
- concern: biomedical waste and public health;
  - response: the design of the incinerator is to operate at temperatures ranging from 860°C to 1,093°C, destroying any pathogens present in the waste.
- concern: transport and handling of biomedical waste;
  - response: The Proponent has an Emergency Response Plan in place in case of an accident. The waste is transported in approved, labelled boxes following applicable regulations.

Ongoing communications with individual stakeholders as follow-up to the information package mail-out, the Open House and the meeting with Beaver County Council are underway to address any outstanding questions and concerns. An updated open house is scheduled for January 2015.

In addition to the above, the general public will be formally notified of the application through advertisement of the application in local weekly newspapers per the EPEA approval process.

8. CLOSURE

We trust that this report satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact the undersigned at any time.

Report Prepared by

Cleo Petch, B.Sc
Staff Environmental Approvals Specialist

Senior Review by

Tom Jacklin M.Eng, P.Eng
Principal Remediation Engineer

Geetha Ramesh, Ph.D., P.Biol.
Principal Toxicologist
Technical Director, Contaminated Sites

APEGA Permit to Practice No. P00725

Prairie Business Unit
Infrastructure & Environment
WorleyParsons Canada Services Ltd.

9. REFERENCES

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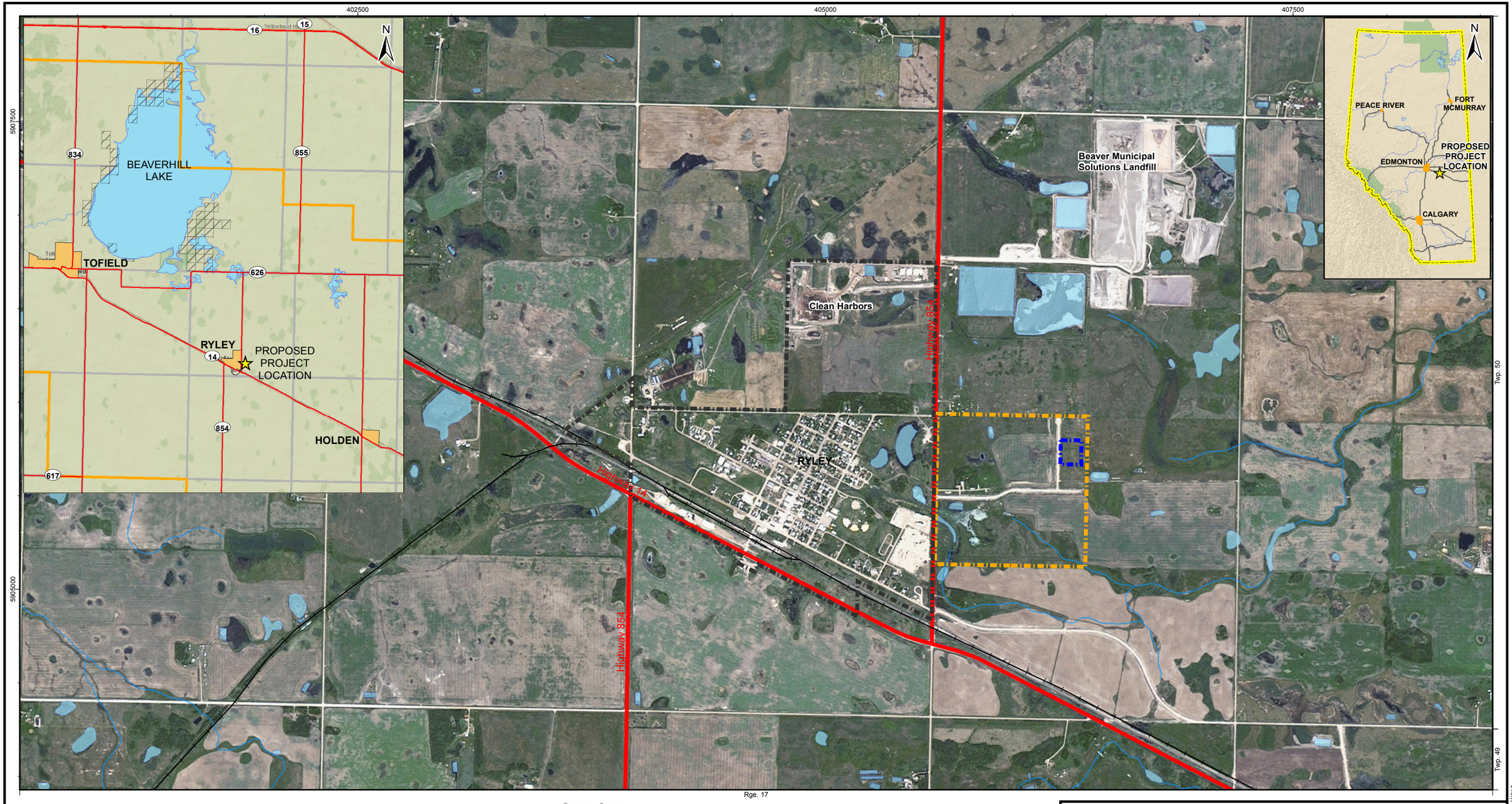
Figures



Legend

- Project Location
- Village of Ryley Municipal Limits
- Equity Industrial Park
- Waterbodies/Lagoons
- Watercourse
- Provincial Highway
- Railway

Basemap Sources:
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

0 0.5 1
Kilometres
1:20,000
NAD 1983 UTM Zone 12N

G-M PEARSON
RYLEY BIOMEDICAL WASTE INCINERATOR
CEAA PROJECT DESCRIPTION

SITE LOCATION

OneWay™ to zero harm

Date:	Drawn by:	Edited by:	App'd by:
27-OCT-14	T.G.	E.H.	TJ

WorleyParsons resources & energy

WorleyParsons Project No.: 307074-01969-300

FIG No: 1 | REV: A

PLOT DATE & TIME: 30/01/2014 12:43:37 PM USER NAME: Edie Hebert
SAVE DATE & TIME: 27/10/2014 3:50:30 PM ISSUING OFFICE: CALGARY GIS

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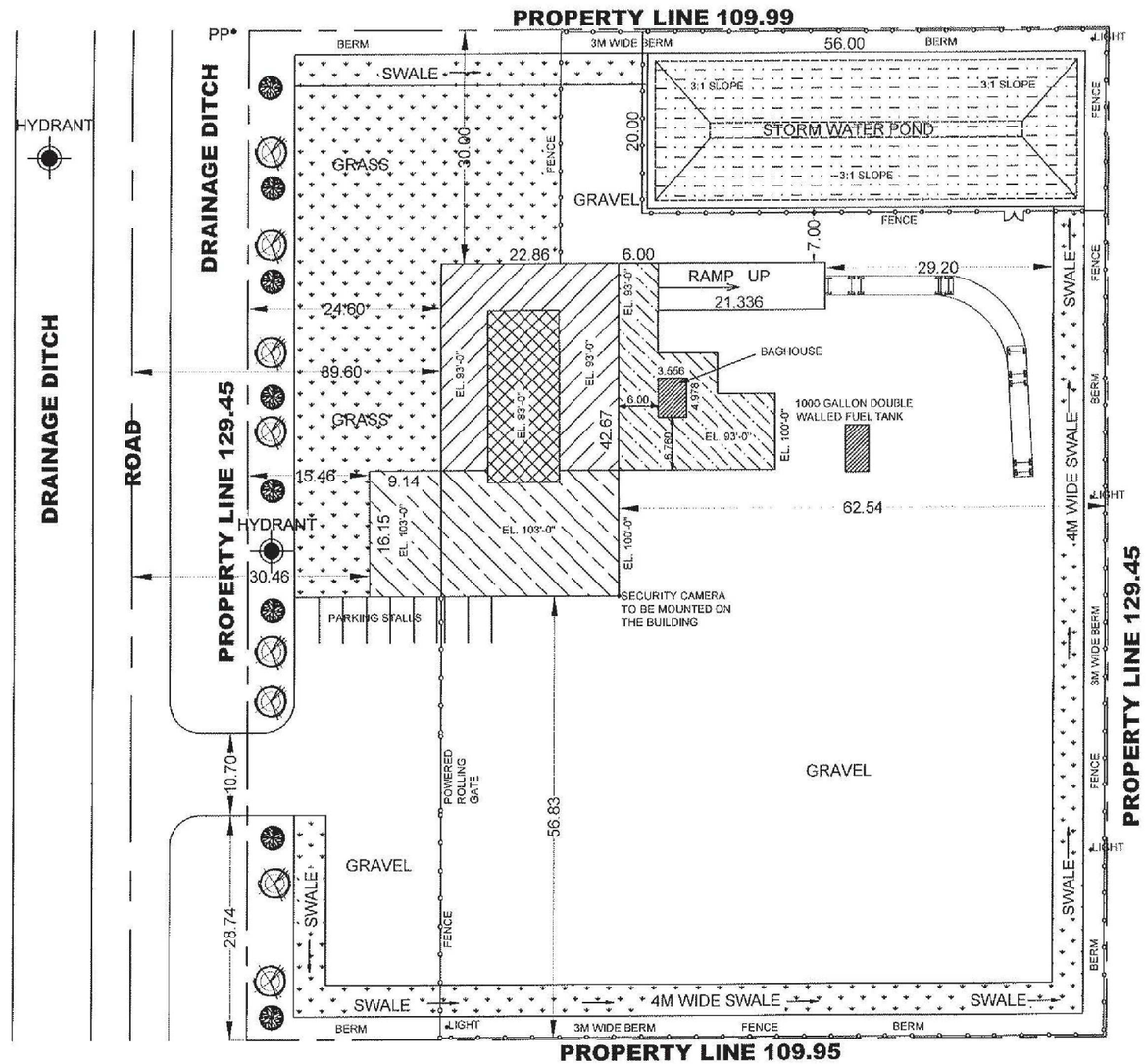

LEGAL DESCRIPTION

PLAN: 042 7065
BLOCK:1
LOT: 2
LSD:

MUNICIPAL ADDRESS

BEAVER COUNTY

BUILDING CLASSIFICATION

-ALBERTA BUILDING CODE: 2006
-GROUP F - DIVISION 1 (INDUSTRIAL BUILDING)
-CLAUSE - 3.2.2.66
-SINGLE STOREY, FACING ONE STREET
-NON-SPRINKLERED
-COMBUSTIBLE AND/OR NON-COMBUSTIBLE CONSTRUCTION PERMIT PERMITTED

LOT COVERAGE

LOT AREA: 1.42 ha = 14,245 m^2
BUILDING AREA = 1,123 m^2
LOT COVERAGE = 7.88 %

OCCUPANCY & USE

TYPE OF BUSINESS

1. MEDICAL WASTE DISPOSAL
2. HOURS OF OPERATION WILL BE 24/7
3. THIS LOT IS FAIRLY LEVEL THEREFORE NO EXTRA SOIL WILL VE BROUGHT IN OR CARTED AWAY

EXTERIOR LIGHTS ON BUILDING

HIGH PRESSURE SODIUM (SHOWN ON BUILDING ELEVATIONS)
a. 400W MOUNTED AT HIGH ELEVATION ON BUILDING
b. 250W MOUNTED AT LOW ELEVATION ON BUILDING

SIGNAGE ON THE BUILDING

THERE WILL BE 8FT. X 4FT. SIGN BOARD ATTACHED TO WEST WALL NOT SHOWN ON ELEVATION

SOURCE:
OLYMPIA ENGINEERING (1982) INC.; PROJECT No.: 14012; SITE PLAN DATED: JULY/28/2014, REV.B

m 0 10 20 30 40 m

1:750

G-M PEARSON
RYLEY BIOMEDICAL WASTE INCINERATOR
CEAA PROJECT DESCRIPTION

SITE PLAN

Date: 03-NOV-14	Drawn by: OTHERS	Edited by: KMS	App'd by: TJ

WorleyParsons Project No. 307074-01969-300
FIG No 2
REV B

OneWay to zero harm
WorleyParsons resources & energy

PLOT DATE & TIME: 3/11/2014 2:19:24 PM
SAVE DATE & TIME: 24/10/2014 8:21:35 AM
USER NAME: kevin.st-jacques
ISSUING OFFICE: eCAD

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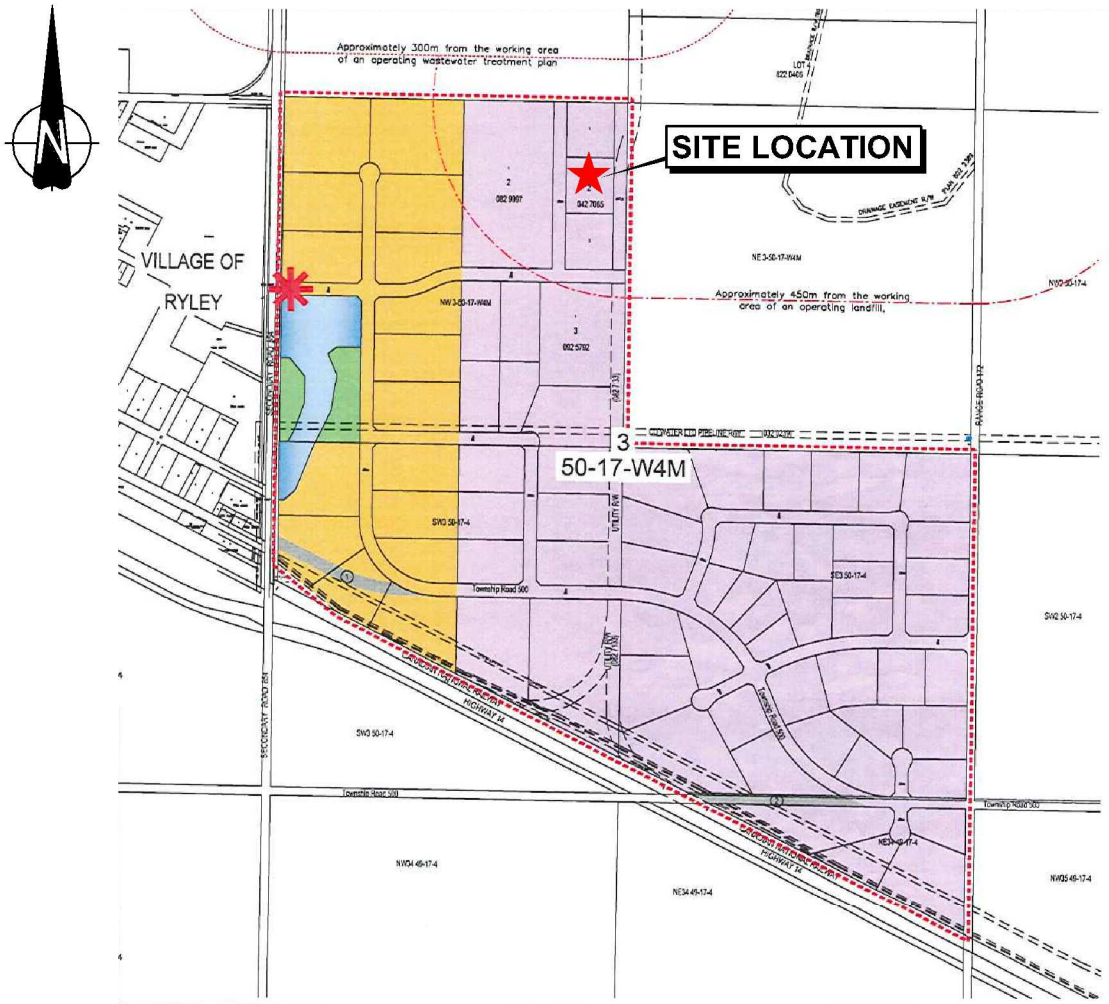


- Commercial/Light Industrial
- Industrial
- Environmental Reserve
- Municipal Reserve
- Proposed Road Closures:
  1. Portion of Road Plan 082 3216;
  2. Portion of Township Road 500 R/W
- Type IVb Intersection Treatment (To be confirmed by Traffic Impact Assessment)
- 450m Setback to Landfill
- 300m Setback to Wastewater Treatment Plant
- Area Structure Plan Boundary

SOURCE:
EQUITY INDUSTRIAL PARK ARE STRUCTURE PLAN
DECEMBER 2009; FIGURE 4.0

m 0 250 500 750 m

1:17500

G-M PEARSON
RYLEY BIOMEDICAL WASTE INCINERATOR
CEAA PROJECT DESCRIPTION

EQUITY INDUSTRIAL PARK AREA STRUCTURE PLAN

Date:	Drawn by:	Edited by:	App'd by:
24-OCT-14	OTHERS	KMS	TJ

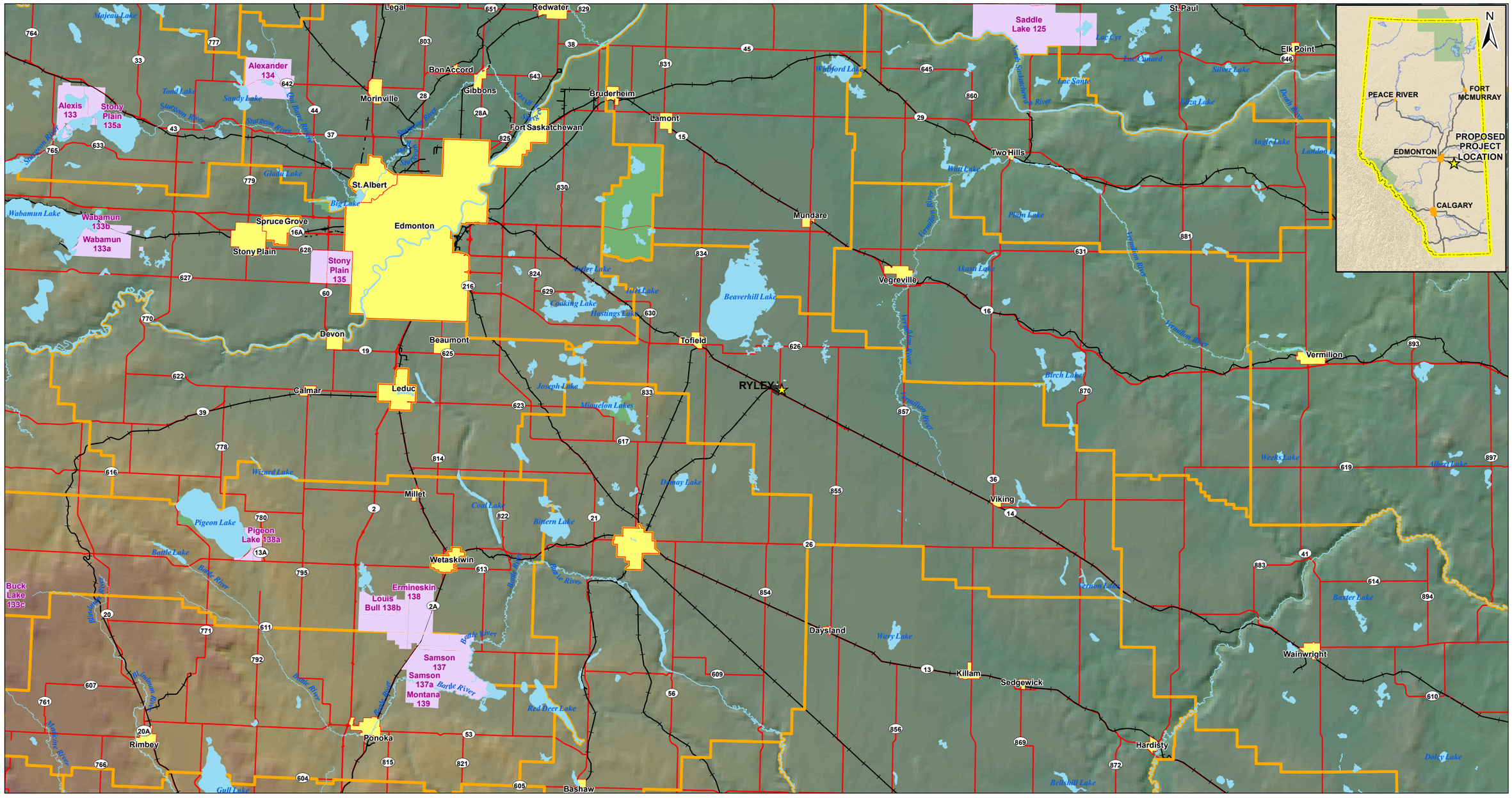
OneWay to zero harm

WorleyParsons resources & energy

WorleyParsons Project No. 307074-01969-300

FIG No 3 | REV A

PLOT DATE & TIME: 24/10/2014 11:13:10 AM USER NAME: karen.st.jacques
SAVE DATE & TIME: 24/9/2014 9:05:38 AM ISSUING OFFICE: eCAD



Legend

- Project Location
- Water Body
- Watercourse
- Community
- Indian Reserve
- Metis Settlement
- County / Municipality
- Park
- Railways
- Major Road

0 15 30
Kilometres
1:750,000
NAD 1983 UTM Zone 12N

G-M PEARSON
RYLEY BIOMEDICAL WASTE INCINERATOR
CEAA PROJECT DESCRIPTION

ABORIGINAL LANDS

OneWay to zero harm

Date:	Drawn by:	Edited by:	App'd by:
07-NOV-14	T.G.	T.G.	TJ.

WorleyParsons resources & energy

WorleyParsons Project No. 307074-01969-300

FIG No 4 | REV B

PLOT DATE & TIME: 30/01/2014 12:43:37 PM USER NAME: tom.graham
SAVE DATE & TIME: 07/11/2014 2:28:10 PM ISSUING OFFICE: CALGARY GIS

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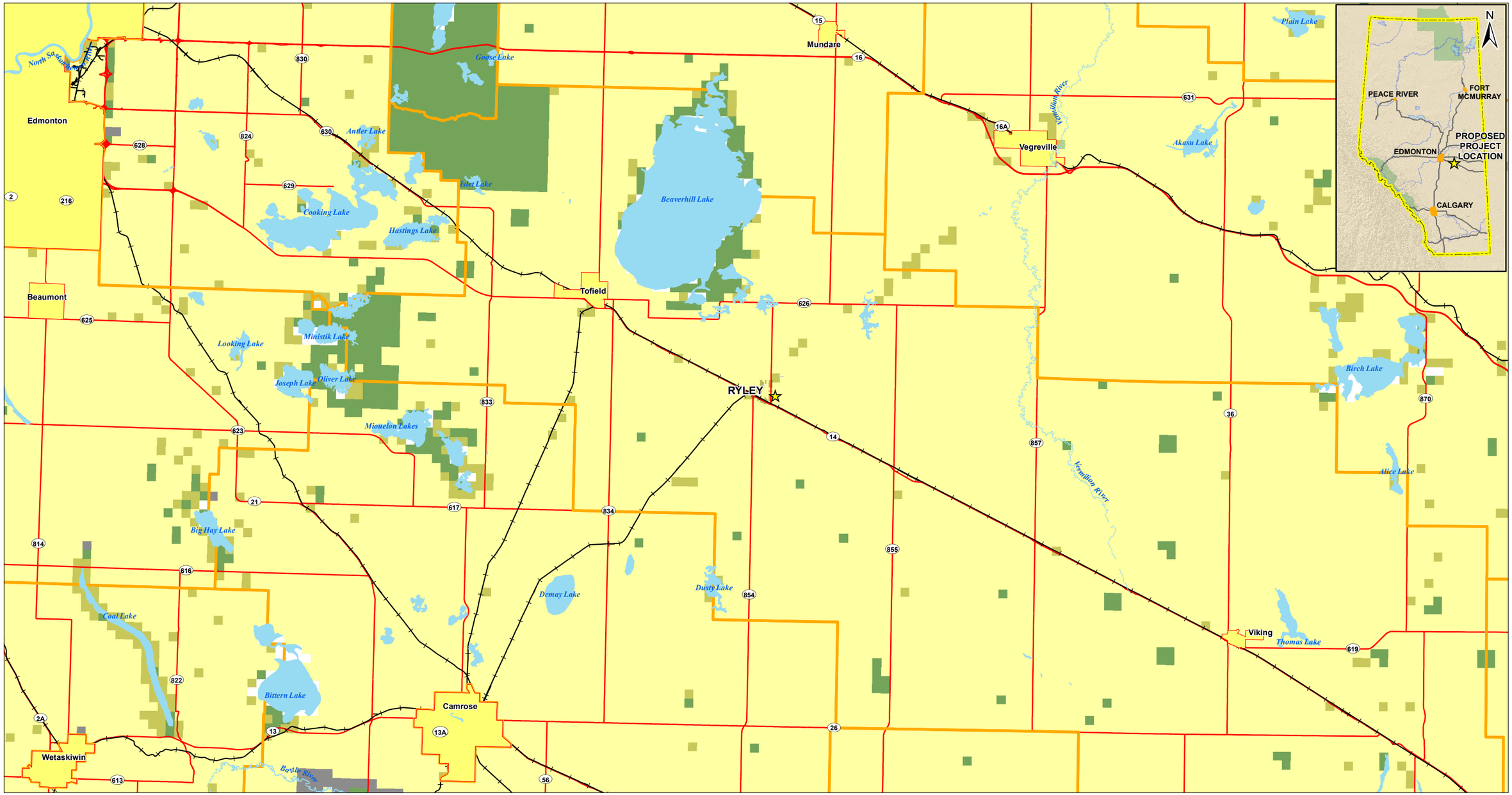

Legend

- Project Location
- Crown Land (Provincial and Federal)
- Freehold/Private
- Mixed
- Other
- Community
- County / Municipality
- Railways
- Major Road
- Watercourse
- Water Body

0 5 10
Kilometres
1:350,000
NAD 1983 UTM Zone 12N

G-M PEARSON
RYLEY BIOMEDICAL WASTE INCINERATOR
CEAA PROJECT DESCRIPTION

FEDERAL LAND

Date:	Drawn by:	Edited by:	App'd by:
27-OCT-14	T.G.	E.H.	TJ

WorleyParsons Project No. 307074-01969-300
FIG No 5
REV A

OneWay to zero harm
WorleyParsons resources & energy

PLOT DATE & TIME: 30/01/2014 12:45:37 PM USER NAME: Eddie Hebert
SAVE DATE & TIME: 27/10/2014 4:17:27 PM ISSUING OFFICE: CALGARY GIS

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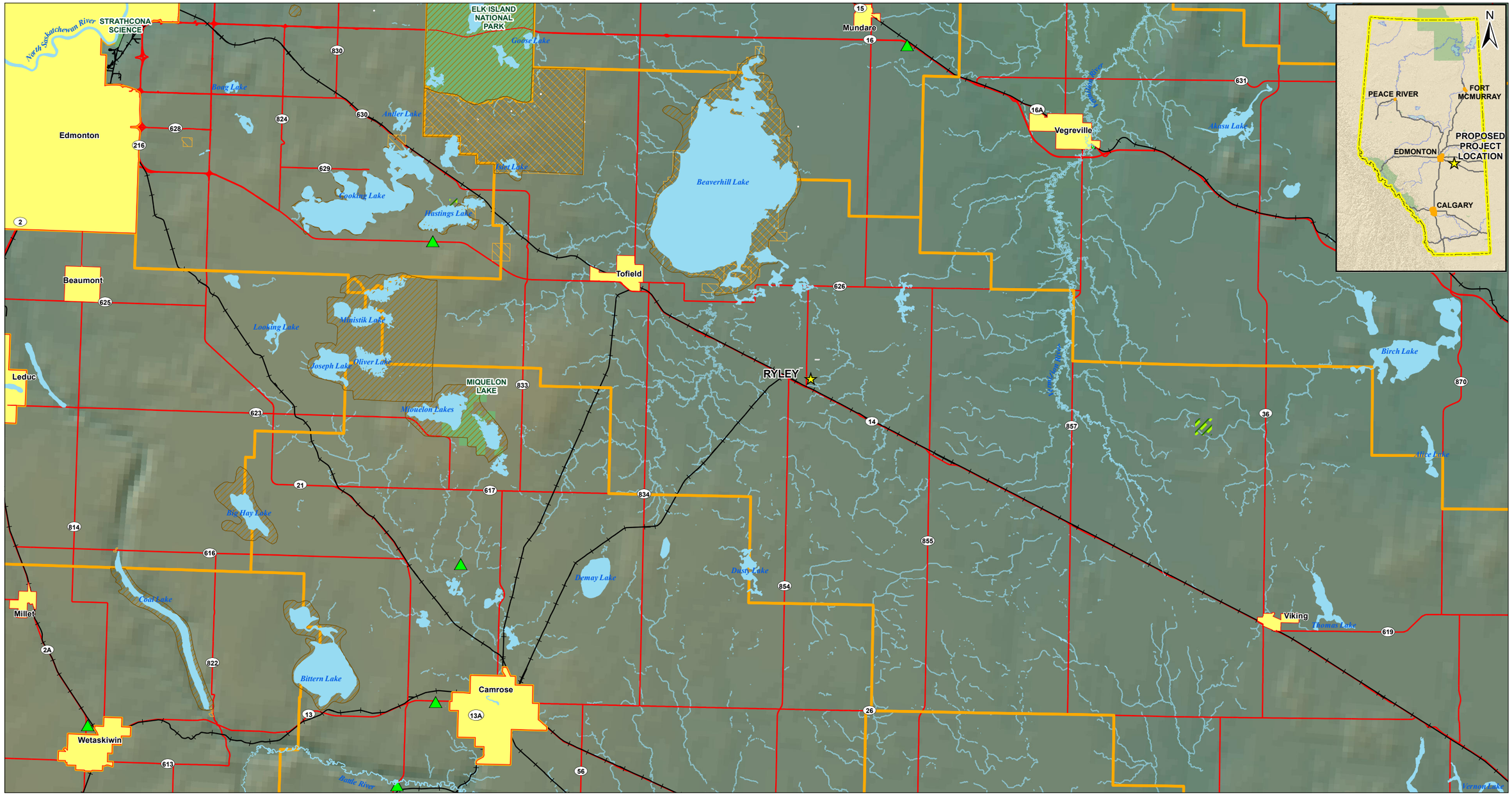

Legend

- Project Location
- Heritage Site
- Community
- County / Municipality
- Critical Wildlife
- Environment Designation
- Environmentally Significant Area
- Protected Area
- Park
- Railways
- Major Road
- Watercourse
- Water Body

0 5 10
Kilometres
1:350,000
NAD 1983 UTM Zone 12N

G-M PEARSON
RYLEY BIOMEDICAL WASTE INCINERATOR
CEAA PROJECT DESCRIPTION

ENVIRONMENTALLY SENSITIVE AREAS

OneWay™ to zero harm

Date:	Drawn by:	Edited by:	App'd by:
27-OCT-14	T.G.	E.H.	TJ

WorleyParsons resources & energy

WorleyParsons Project No.: 307074-01969-300

FIG No: 6 | REV: A

PLOT DATE & TIME: 30/01/2014 12:43:37 PM USER NAME: Eddie Hebert
SAVE DATE & TIME: 27/10/2014 2:09:51 PM ISSUING OFFICE: CALGARY GIS

FILE LOCATION: N:\PROJECTS\G-M Pearson\Ryley_Biomedical_Incinerator\MXDs\307074-01969.300\RiskMapOverview_RevA.mxd