



Phase I Environmental Site Assessment

Hawkwood Lands in Bearspaw (Lot A, Plan 921 2196, and Portions of SE and SW 19-25-2 W5M)
Rocky View County, Alberta

Highfield Land Management



Executive Summary

GHD Limited (GHD) was retained by Highfield Land Management (Highfield) to conduct a Phase I Environmental Site Assessment (ESA) of the agricultural property known as the Hawkwood Lands in Bearspaw, located at Lot A, Plan 921 2196, and portions of SE and SW 19-25-2 W5M, Rocky View County, Alberta (Site or Property). The Property has been historically operated for agricultural purposes. The farmyard is located at Lot A, Plan 921 2196, which is within the cropland located at SE and SW 19-25-2 W5M. The purpose of the Phase I ESA was to identify, through a non-intrusive investigation, the existence of any significant actual or potential areas of environmental impairment associated with the Site. It is GHD's understanding that the Phase I ESA is being completed as part of Highfield's required technical studies associated with submission of a Conceptual Scheme and Land Use Amendment application to Rocky View County to support future development of the Property.

The Phase I ESA has been conducted in general accordance with the document entitled, "CSA Standard Z768-01, Phase I Environmental Site Assessment" for conducting environmental assessments. The Phase I ESA included a review of Site history, a review of Property title records, a Site inspection, document review, interview with persons knowledgeable of historical and current Site operations, and inquiries with regulatory agencies. The Phase I ESA identified the following potential area of environmental impairment to be associated with the Site:

- i) **Historical Site Operations:** At the time of the Site inspection, the Site was operated as farmland with an associated farmyard. The farmyard included a residence, garage, and shed. Numerous drums containing engine oil, drilling oil, hydraulic oil, and gear oil were stored outdoors adjacent to the garage on an earthen surface. In addition, two totes containing hydraulic oil were observed in this area. Within the garage and shed, numerous containers of oils, solvent, paints, gasoline, and degreaser were observed, some located on the earthen floor. Minor staining was observed in this chemical storage area. It was reported that the farmyard historically included two additional barns and several associated sheds surrounded by corral fencing, as cattle were historically raised at the Property until the early 1990s. The Site has also been operated for hay and barley cropland from at least the 1950s until present. Limited information was provided to GHD regarding the historic handling, use and storage of chemicals on the Site and the ultimate disposal location and management practices for wastes generated at the Site. In absence of comprehensive soil and groundwater quality data for the Site, the historic handling, use and storage of chemicals at the Site, and waste management practices were identified as potential sources of environmental impairment to the Site.



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1. Introduction

GHD Limited (GHD) was retained by Highfield Land Management (Highfield) to conduct a Phase I Environmental Site Assessment (ESA) of the agricultural property known as the Hawkwood Lands in Bearspaw, located at Lot A, Plan 921 2196, and portions of SE and SW 19-25-2 W5M, Rocky View County, Alberta (Site or Property). The Property has been historically operated as agricultural farmland. The farmyard is located at Lot A, Plan 921 2196, which is nested within the cropland located at SE and SW 19-25-2 W5M. The purpose of the Phase I ESA was to identify, through a non-intrusive investigation, the existence of any significant actual or potential areas of environmental impairment associated with the Site. It is GHD's understanding that the Phase I ESA is being completed as part of Highfield's required technical studies associated with submission of a Conceptual Scheme and Land Use Amendment application to Rocky View County to support future development of the Property. A Site location map is provided on Figure 1 and a Site plan is provided on Figure 2.

The Phase I ESA has been conducted in general accordance with the document entitled, "CSA Standard Z768-01, Phase I Environmental Site Assessment" for conducting environmental assessments. Curricula vitae for the project team members that completed the Phase I ESA are included in Appendix A.

The Phase I ESA included a review of Site history, a review of Property title records, a Site inspection, document review, interviews with persons knowledgeable of historical and current Site operations, and inquiries with regulatory agencies. The following tasks were conducted as part of the Phase I ESA:

- Completion of an electronic environmental database search
- Review of available historical records including aerial photographs and fire insurance plans of the Site and surrounding area
- Review of past and current Property usage and adjacent property occupancy
- Inspection of the facilities, equipment, utility services, operations, and associated records for the Property
- Observations of any conditions that represented potential environmental concerns
- Review of aboveground and underground storage tank records
- Review of chemical use and storage and spill/release incidents
- Review of waste handling, accumulation, storage, and disposal practices
- Review of air emissions and wastewater discharges
- Review of equipment that potentially contains polychlorinated biphenyls (PCBs)
- Observations of potential asbestos-containing materials (ACM)
- Inquiries with regulatory agencies and discussions with persons knowledgeable of the Site and Site operations



GHD relied on information received from all parties as accurate unless contradicted by field observations or written documentation.

The following report summarizes the information gathered by GHD during the Phase I ESA and identifies any significant actual or potential areas of environmental impairment associated with the Site. This Phase I ESA report has been prepared for the use of Highfield and may not be relied upon by others without the written concurrence of GHD.

2. Environmental Databases Search and Historical Records Review

2.1 Environmental Databases Search

GHD contracted EcoLog Environmental Risk Information Services Ltd. (ERIS) to conduct a search of available federal, provincial, and private environmental databases. The database searches were completed to assist in the identification of environmental conditions at the Site. A summary of the search results from pertinent databases is provided below. The number of records identified for the Site and for the properties within 0.25 kilometres (km) of the Site are identified on the following table. The complete databases search report is included in Appendix B. Limitations concerning the information obtained from the environmental databases are identified on the databases search report.

Database	Number of Records	
	Site	Distance to Site 0-0.25 km
Federal Databases		
Environmental Effects Monitoring (EEM)	None	0
Environmental Issues Information System (EIIS)	None	0
Federal Convictions (FCON)	None	0
Contaminated Sites on Federal Land (FCS)	None	0
Indian and Northern Affairs Fuel Tanks (IAFT)	None	0
National Analysis of Trends in Emergencies System (NATE)	None	0
National Defence & Canadian Forces Fuel Tanks (NDFT)	None	0
National Defence & Canadian Forces Spills (NDSP)	None	0
National Defence & Canadian Forces Waste Disposal Sites (NDWD)	None	0
National Environmental Emergencies System (NEES)	None	0
National PCB Inventory (NPCB)	None	0
National Pollutant Release Inventory (NPRI)	None	0
Parks Canada Fuel Storage Tanks (PCFT)	None	0
Provincial Databases		
Agriculture and Fisheries – Certificates of Approval (AGR)	None	0
Alberta Oil and Gas Wells (AOGW)	None	0
Waste Management Facilities – Certificates of Approval (CAWD)	None	0



Database	Number of Records	
	Site	Distance to Site
		0-0.25 km
Confined Feeding Operations (CFO)	None	0
Chemical Processing Operations – Certificates of Approval (CHEM)	None	0
Compliance and Convictions (CONV)	None	0
Enforcement Action Summary (EAS)	None	0
Environmental Site Assessment Repository (ESAR)	None	0
Facility List (FAC)	None	0
Field Inspection Incident Report (FIS)	None	0
Food Processing Operations – Certificates of Approval (FOOD)	None	0
PTMAA Fuel Storage Tanks (FST)	None	0
Waste Generators Summary (GEN)	None	2
May-Ruben Thermal Solutions Inc., located adjacent to the west of the Site at 253147 Bearspaw Road, is listed twice in the GEN database as operating since 2015. No further information is provided regarding the type of operations at this location.		
Gas Processing Plants (GPP)	None	0
Alberta Environment's Help End Landfill Pollution (HELP) Program Database	None	0
Horizontal Wells (HORW)	None	0
Identification and Verification of Active and Inactive Land Disposal Sites (LDS)	None	0
Land Disposal Sites on Indian Reserves (LDSI)	None	0
Lumber Related Operations – Certificates of Approval (LUM)	None	0
Metals, Minerals and Building Materials Operations–Certificates of Approval (MMB)	None	0
Mineral Occurrences (MNR)	None	0
Operating and Abandoned Mines (OAM)	None	0
Alberta Orphan Wells (ORP)	None	0
Petrochemical, Coal and Gas Operations – Certificates of Approval (PCG)	None	0
Pesticide Register (PES)	None	0
Conglomerate and Waste Management Facilities (PITS)	None	0
Alberta Private Sewage Disposal Permits (PSP)	None	0
Waste Receivers Summary (REC)	None	0
Special Operation Classifications – Certificates of Approval (SPEC)	None	0
Wastewater Operations (WSTE)	2	0
The Bearspaw municipal district is listed twice in the WSTE database as operating a wastewater pipeline in the N and SE sections of 19-25-2 W5M. The Site is located in the SE section of 19-25-2 W5M. The wastewater pipeline is located along the Crowchild Trail NW roadway, adjacent to the Site. The wastewater pipeline was installed in 2002.		
Water Well Information System (WWIS)	6	4
Records for six water wells are associated at the Site. The wells were installed in 1992, 1967, 1975, 1983, and 1986. The wells were reportedly installed for either domestic or stock purposes. The wells were installed to depths ranging from 54 to 82 metres (m) below ground surface (bgs). The		



Database	Number of Records	
	Site	Distance to Site
		0-0.25 km
<p>general soil stratigraphy at the Site is comprised of clay and sand to a depth of 33 m bgs followed by shale to a depth of 52 m bgs. The shale was underlain by sandstone to a final depth drilled of 82 m bgs.</p> <p>Four water wells were also installed on the properties adjacent to the west and south of the Site. The wells were installed for domestic and stock water wells in 1978 and 1982.</p>		
Private Source Databases		
Automobile Wrecking & Supplies (AUWR)	None	0
ERIS Historical Searches (EHS)	None	2
Canadian Mine Locations (MINE)	None	0
Oil and Gas Wells (OGW)	None	0
Canadian Pulp and Paper (PAP)	None	0
Retail Fuel Storage Tanks (RST)	None	0
Scott's Manufacturing Directory (SCT)	None	1
<p>Westfour Oil and Gas Ltd., located adjacent to the south of the Site at 83 Blueridge Rise, is listed in the SCT database for operating as a facility with conventional oil and gas extraction. NAICS Code: 211113. No dates of operation were included in the ERIS database search.</p>		
Inventory of Waste Disposal Sites (WDS)	None	0

2.2 Property Title Search

GHD contracted ERIS to conduct a search of property title records and other documents (e.g., lease agreements, easements, environmental liens, etc.) associated with the ownership or occupation of the Site. The following entities were reported to be historically associated with ownership or occupation of the Site:

SW and SE 19-25-2 W5M (Cropland)

Registered Owners	Ownership Period
Thomas Hawkwood (Farmer)	1988 to 2005
Gertrude Hawkwood	2005 to 2012
Maxima Developments Inc.;	
Highfield Stock Farm Inc.;	
1684676 Alberta Ltd.;	
1684697 Alberta Ltd.;	
CLT Contracting Ltd.	2012 to 2014
1797669 Alberta Ltd.	2014 to Present



Lot A, Plan 921 2196 (Farmyard)

Registered Owners	Ownership Period
Gertrude Hawkwood	2005 to 2012
Maxima Developments Inc.;	
Highfield Stock Farm Inc.;	
1684676 Alberta Ltd.;	
1684697 Alberta Ltd.;	
CLT Contracting Ltd.	2012 to 2012
Wayne Poffenroth	2012 to 2013
Maxima Developments Inc.	2013 to Present

No environmental liens or identified encumbrances of environmental concern were identified as being registered on title to the Property. The Property title search documents are included in Appendix C.

2.3 Fire Insurance Plans

Fire insurance plans assist in the identification of historical land use and commonly indicate the existence and location of aboveground and underground storage tanks, structures, improvements; and facility operations. No fire insurance maps were reported to be available for the Site in the ERIS collection. A copy of the correspondence from ERIS is included in Appendix D.

2.4 Aerial Photographs

Aerial photographs were reviewed to generally document the development of the Site and properties in the vicinity of the Site and to identify potential solid waste disposal areas. Aerial photographs of the Site and surrounding areas were obtained by GHD for the years 1953, 1967, 1975, 1983, and 1995. Satellite images of the Site were obtained from ESRI Basemap Imagery for the years 2008 and 2014. The following is a summary of observations based on review of the aerial photographs.

1953 Aerial Photograph (Scale 1:40,000): The 1953 aerial photograph indicates the Site and adjacent properties are used as agricultural farmland. A farmyard is visible in the eastern portion of the Property. The farmyard appears to be comprised of a residence and several barns/sheds. Low lying water run-off areas are visible in the central portion of the Property and drain into a natural water body located along the southern Property boundary. A gravel access roadway (Township Road 253A) is located adjacent to the northeast of the Site followed by Highway 1A. The 12 Mile Coulee Road NW roadway is located adjacent to the east of the Site. The Bow River is located approximately 2 km west of the Site.

1967 Aerial Photograph (Scale 1:30,000): The 1967 aerial photograph indicates the Site remains agricultural farmland. Several barns/sheds have been added to the farmyard in the eastern portion



of the Property. The remaining adjacent properties remain generally unchanged from the 1953 aerial photograph.

1975 Aerial Photograph (Scale 1:30,000): The 1975 aerial photograph indicates that the Site remains agricultural farmland. The adjacent properties southwest and southeast of the Property have been developed as estate properties. The remaining adjacent properties remain generally unchanged from the 1967 aerial photograph.

1983 Aerial Photograph (Scale 1:60,000): The 1983 aerial photograph indicates that the Site remains agricultural farmland. The adjacent properties south and north of the Site have been developed as estate properties. A farmyard has been constructed adjacent to the northeast of the Site and a commercial facility comprised of an apparent warehouse building has been constructed adjacent to the northwest of the Site. Township Road 253 has been constructed along the southern Property boundary. The remaining adjacent properties are generally unchanged from the 1975 aerial photograph. Residential communities of the City of Calgary are now present approximately 4 km southeast of the Site.

1995 Aerial Photograph (Scale 1:60,000): The 1995 aerial photograph indicates the Site and adjacent properties remain generally unchanged from the 1983 aerial photograph. Grading activities have begun east of the Site, east of Highway 1A. Residential communities of the City of Calgary are now present approximately 2.5 km southeast of the Site.

2008 Satellite Image (Basemap Imagery): The 2008 satellite image indicates that the Site and adjacent properties are generally unchanged from the 1995 aerial photograph.

2014 Satellite Image (Basemap Imagery): The 2014 satellite image indicates that the barns/sheds in the eastern portion of the farmyard have been removed. The residence, garage, and shed appear to remain in the farmyard. The remaining portions of the Site remain agricultural farmland. Residential communities of the City of Calgary are now present east of the Site, east of 12 Mile Coulee Road NW.

2.5 Historical City Directories

Historical city directories generally document the occupants of municipal addresses on a yearly basis. City Directories do not exist for Bearspaw.

2.6 Petroleum Tank Management Association of Alberta

GHD contacted the Petroleum Tank Management Association of Alberta (PTMAA) to search for available records of tanks associated with the Property. PTMAA did not identify and records of historical fuel tanks associated with the Site.

A copy of the correspondence with PTMAA is provided in Appendix E.

2.7 Previous Environmental Reports

No previous environmental reports were identified to exist for the Site, other than an asbestos survey which is discussed in Section 3.12.



3. Facility Inspection

On November 22, 2016, Ms. Cearra Stott of GHD completed a Site inspection of the property known as the Hawkwood Lands in Bearspaw, located at Lot A, Plan 921 2196, and portions of SE and SW 19-25-2 W5M, Rocky View County, Alberta. At the time of the Site inspection, GHD met with Mr. Charles Boechler of Highfield Land Management, who accompanied GHD during the Site inspection. Additionally, GHD completed a telephone interview with Mr. Wayne Poffenroth who has been associated with the Site since 2005 and provided information concerning the historical and current conditions at the Site.

The Site inspection included an inspection of the Property, review of relevant Site records available to GHD, visual observations of adjacent properties as viewed from the Site and surrounding roadways, and interviews with individuals associated with the Site. A Site location map is provided on Figure 1 and a Site plan is provided on Figure 2. Photographs of the Site are presented in Appendix F.

At the time of the Site inspection, the Site was operated as farmland with an associated farmyard. The farmyard included a residence, garage, and shed. It was reported that the farmyard historically included two additional barns and several associated sheds surrounded by corral fencing, as cattle were historically raised at the Property until the early 1990s. The Site has also been operated for hay and barley cropland from at least the 1950s until present. At the time of the Site inspection, this year's hay crop had been cut and bailed.

The Site was family owned and farmed until 2005. In 2005 the Site was sold to independent companies and the fields and residence were leased separately.

3.1 Site Overview

The Site is located on approximately 109 hectares (270 acres) of land within Rocky View County, Alberta. The Site is comprised of cropland and an associated farmyard area. The farmyard portion of the Site is generally grass covered and the driveways are gravel covered. The entire Property boundary is delineated with a barbed-wire fence.

At the time of the Site inspection, the single story farm residence was occupied. The house was reportedly built in the late 1940s. It was reported that no previous residences were historically located at the Site prior to the late 1940s. Additionally, the garage and shed were operated at the time of the Site inspection for the storage of general maintenance equipment and parts. The shed was of wood construction with dirt floors and appeared to have been vacant for multiple years. The garage was also of wood construction with dirt floors and was observed to store general equipment and parts, including a lawn mower, water slip-tank, building supplies, and tools.

The barns and sheds associated with the cattle operations were reportedly demolished and removed from the Site in 2012. The barns and sheds were located in the eastern portion of the farmyard and were surrounded by corral fencing. The structures were reportedly of wood construction and had stone floors. Based on discussions with the Site representatives a barn was also formerly located west of the Site farmyard. This barn was also removed from the Site in 2012. At the time of the Site inspection, the former location of the barns and sheds were visible based on



the natural vegetation overgrowth due to some remaining concrete debris. It was reported that no large machinery was historically stored at the Site.

3.2 Utility Services

According to Site personnel, potable water is supplied by the on-Site water well. It was reported that the domestic use water well was installed in 1967. There has reportedly not been any analytical testing done on the well. Additionally, two water wells for stock use were installed at the Site in the 1980s. A buried septic tank is operated at the Site for the collection of sanitary and grey water originating from the farm residence. The fiberglass septic tank is located adjacent to the north of the residence and has been operated since at least 2005. The septic tank is emptied by a third party contractor on an as needed basis. It was reported by the Site representatives that a septic field has not been historically used at the Site, to his knowledge.

Electricity and natural gas for the Site are supplied to the Site by ENMAX and AtcoGas. It was reported that the former barns and sheds were provided with electricity.

3.3 Environmental Settings/Adjacent Properties

Based on the water well drilling record for a water well located at the Site, the subsurface soils in the area of the Property consist of clay and sand to a depth of 33 m bgs followed by shale to a depth of 52 m bgs. The shale is underlain by sandstone to a final depth drilled of 82 m bgs. The nearest natural water body is a pond located in the southwest portion of the Site along the southern Property boundary.

Based on the general topographic gradient at the Site and nearby areas, the shallow groundwater beneath the Site is estimated to flow in a southwestern direction. A low lying vegetated wetland area is located along the southern Property boundary. The Property is sloped towards the naturally low lying southwest corner.

The Property is bounded to the north by a farm residence and by new residential estate development. The Property is bounded to the west by Bearspaw Road and a commercial property, followed by cropland. Based on visual inspections at the time of the Site inspection, the commercial property appeared to be a small cattle feedlot and a May-Ruben Thermal Solutions centre (an environmental innovation centre). The Property is bounded to the northeast by an access road, followed by Highway 1A. The Property is bounded to the east by 12 Mile Coulee Road NW, followed by residential estate development. The Property is bounded to the south by Township Road 253 followed by residential estate development. Aboveground power lines are present along the Property boundaries.

No visual evidence of environmental impact to the Site from the adjacent properties was observed by GHD. The Site representatives were not aware of any impact to the Site attributable to adjacent land uses.

3.4 Underground Storage Tanks (USTs)

The Site representatives stated that USTs have not been operated at the Site to their knowledge. At the time of the Site inspection, no physical evidence (e.g., vent pipes, fill pipes, etc.) suggesting the



presence of any USTs was observed at the Site, by GHD. No evidence of current or historical operation of USTs was identified in the historical environmental databases or documents reviewed by GHD.

3.5 Aboveground Storage Tanks (ASTs)

The Site representatives stated that ASTs have not been operated at the Site to their knowledge. At the time of the Site inspection, no ASTs were observed and no physical evidence suggesting the past presence of any ASTs were observed at the Site, by GHD. No evidence of current or historical operation of ASTs was identified in the historical environmental databases or documents reviewed by GHD.

3.6 Chemical Use and Storage

Two PVC totes were observed adjacent to the garage at the time of the Site inspection. The totes were approximately 1,000 litres in size and contained hydraulic oil. Approximately 6-205 litre drums containing diesel engine oil, drilling oil, hydraulic oil, and gear oil were observed adjacent to the totes. The totes and drums were located the ground surface, at the time of the Site inspection, and were stored without spill containment. No evidence of significant spills or releases was observed on the ground surface below the totes or drums. The chemicals were reportedly used for general top and maintenance of farm equipment.

The chemicals used and stored in the garage and shed were generally limited to lubricating oils, solvents, paints, gasoline, and degreasers. The chemicals were generally stored on shelving units in the garage and on the dirt floor of the shed. There were no spill containment features in the areas where the chemicals were stored. Minor surface staining was observed on the dirt floor of the garage and the shed, at the time of the Site inspection.

No further information regarding the historical use of chemicals was provided by the Site representatives. Limited information was provided to GHD regarding the historic handling, use and storage of chemicals on the Site. In absence of comprehensive soil and groundwater quality data for the Site, the historic handling, use and storage of chemicals at the Site were identified as a potential source of environmental impairment to the Site.

3.7 Wastewaters/Sewers

According to Site representatives, the Site is not serviced with sanitary sewers. A buried septic tank is operated at the Site for the collection of sanitary and grey water originating from the farm residence. The Site representatives were not aware of any historical operation of any other septic tanks or leach fields at the Site. At the time of the Site inspection no evidence of any other septic tanks or leach fields were identified by GHD.

According to Site personnel, no process wastewater is generated or discharged on Site.

3.8 Stormwater

Stormwater runoff at the Site generally infiltrates into the ground surface or flows overland to the low lying areas in the central portion of the Site which drain into the natural water body located



along the southern Property boundary. No visual evidence of adverse impact to stormwater quality generated at the Site was observed by GHD at the time of the Site inspection.

3.9 Solid Wastes

Solid waste generated at the Site includes general residential waste and occasional commercial product packaging. These wastes are consolidated into a bin located adjacent to the garage and reportedly removed from the Site as required. At the time of the Site inspection, scrap metal, parts, tires, wood, and tools were located on the ground surface adjacent to the garage. Additionally, a concrete debris and large rock pile was observed in the farmyard. The scrap concrete and rock were reportedly the remains of the floors of the previously demolished barns and sheds.

Historical storage, handling, and disposal practices for solid wastes generated at the Site are not known.

The Site representatives were not aware of any current or historical on-Site disposal of solid waste. No evidence of on-Site solid waste disposal was observed by GHD at the time of the Site inspection or in the aerial photographs reviewed.

3.10 Liquid/Hazardous Waste

The Site representatives stated that they have no knowledge of liquid/hazardous waste being generated at the Site. At the time of the Site inspection, no liquid/hazardous waste was observed to be generated at the Site.

Limited information was provided regarding historic handling, storage and disposal of liquid/hazardous waste generated during historical operations at the Site. In the absence of comprehensive soil and groundwater quality data for the Site, historic liquid waste management was identified as a potential source of environmental impairment to the Property.

3.11 Chemical Spills/Releases

The Site representatives were not aware of any reportable chemical spill/release incidents having occurred at the Site to their knowledge. At the time of the Site inspection, minor surface staining was observed in the garage and shed. The remaining portions of the Site were generally free of significant surface staining.

3.12 Asbestos Containing Materials

GHD was provided with a ACM Survey report entitled "Pre-Demolition Asbestos-Containing Material Survey at 25055 – Township Road 253A, Calgary, Alberta", dated June 5, 2015, by EHS Partnerships Ltd (ACM Report). The ACM Report was completed on the residence at the Site, for the independent Property owner. The results of the ACM Report indicated that ACM are present in drywall joint compound in the basement, sheet flooring in the bathroom, duct paper throughout the house, and vermiculite in the attic space. The ACM Report recommended the following regarding demolition work:



- “Low-Risk procedures must be followed to remove the asbestos-containing duct paper as per the Alberta Asbestos Abatement Manual, dated October 2012
- Moderate-Risk procedures must be followed to remove the asbestos-containing drywall joint compound and sheet flooring as per the Alberta Asbestos Abatement Manual, dated October 2012
- High-Risk procedures must be followed to remove the asbestos-containing vermiculite as per the Alberta Asbestos Abatement Manual, dated October 2012”

A copy of the ACM Report is provided in Appendix G.

3.13 Urea Formaldehyde Foam Insulation (UFFI)

The Site representatives were not aware of the presence of urea formaldehyde foam insulation (UFFI) at the Site. No evidence of potential UFFI was identified by GHD at the time of the Site inspection.

3.14 Polychlorinated Biphenyls (PCBs)

The Site representatives were not aware of the presence of PCB-containing equipment or PCB testing programs at the Site. No potential PCB-containing equipment was observed by GHD at the time of the Site inspection.

3.15 Air Emissions

Fixed-point air emissions generated at the Site consist of emissions from the natural gas-fired furnace and hot water tank at the residence. No air emission sources were observed by GHD that could potentially impact soil or groundwater quality at the Site.

3.16 Ionizing Radiation

At the time of the Site inspection, no industrial sources of ionizing radiation (e.g., fill level controllers) were observed at the Site. The Site representatives were not aware of any other sources of ionizing radiation at the Site to their knowledge. No testing is known to have been completed at the Site for ambient radon gas levels.

3.17 Lead Paint

The presence of lead paint at the Site was investigated through observations made by GHD during the Site inspection, and discussions with the Site representatives. A hazardous materials survey has never been completed at the Site according to the Site representatives and was not included in the scope of work for this Phase I ESA. At the time of the Site inspection, the painted surfaces in the Site buildings appeared to be in decent condition, with some peeling paint. Based on the age of construction of the Site buildings (at least the late 1940s) there is a potential that lead paint would be found in the Site buildings.



3.18 Regulatory Agency Correspondence

The Site representatives were not aware of any federal regulatory agency concerns, complaints, notices of violation, or directions issued against the Site.

GHD contacted the Environmental Law Centre (ELC) and requested information concerning historical environmental information, past complaints, violations, and/or directives concerning Highfield. The ELC reported that there has been no enforcement actions issued against Highfield Land Management.

The regulatory agency correspondence is provided in Appendix H.

GHD accessed the online Environmental Site Assessment Repository (ESAR) database on December 6, 2016, which presents publicly available environmental documentation for properties in Alberta. As of December 6, 2016, no information was available in the ESAR database for the Site or adjacent properties.

GHD also accessed the online Abacus Datagraphics (AbaData) database on December 8, 2016, an electronic oil and gas mapping software tool for properties located throughout Alberta. Based on review of the AbaData database, no oil and gas pipelines or wells are located on the Site or within 500 metres of the Site.

4. Conclusions

The Phase I ESA identified the following potential area of environmental impairment to be associated with the Site:

- i) **Historical Site Operations:** At the time of the Site inspection, the Site was operated as farmland with an associated farmyard. The farmyard included a residence, garage, and shed. Numerous drums containing engine oil, drilling oil, hydraulic oil, and gear oil were stored outdoors adjacent to the garage on an earthen surface. In addition, two totes containing hydraulic oil were observed in this area. Within the garage and shed, numerous containers of oils, solvent, paints, gasoline, and degreaser were observed, some located on the earthen floor. Minor staining was observed in this area. It was reported that the farmyard historically included two additional barns and several associated sheds surrounded by corral fencing, as cattle were historically raised at the Property until the early 1990s. The Site has also been operated for hay and barley cropland from at least the 1950s until present. Limited information was provided to GHD regarding the historic handling, use and storage of chemicals on the Site, the ultimate disposal location for wastes generated at the Site, and management of wastes generated. In absence of comprehensive soil and groundwater quality data for the Site, the historic handling, use and storage of chemicals at the Site, and waste management practices were identified as potential sources of environmental impairment to the Site.



All of Which is Respectfully Submitted,

GHD

A handwritten signature in black ink, appearing to read "Cearra Stott".

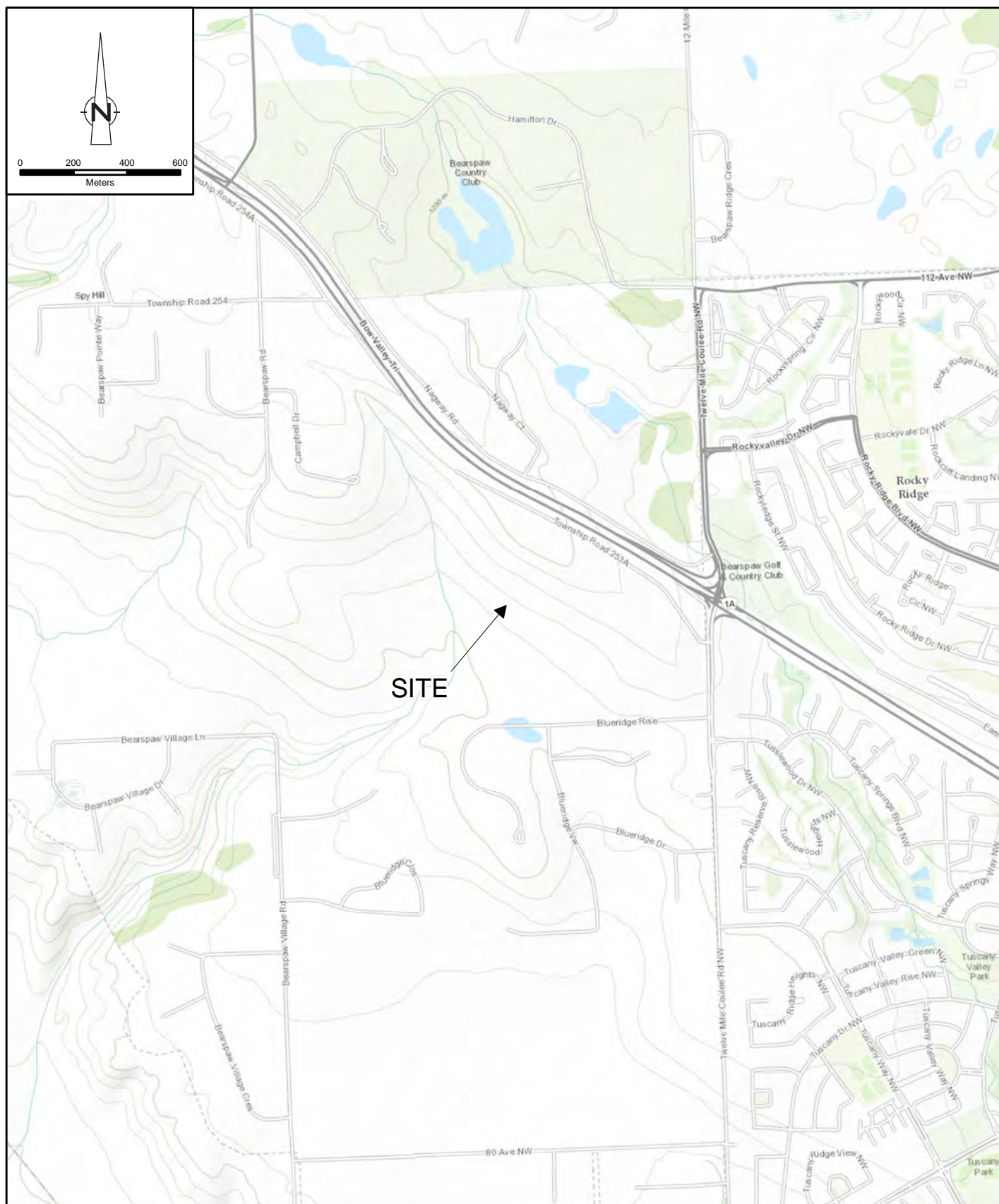
Cearra Stott, EIT

A circular professional engineer seal for the Province of Alberta. The seal contains the text "PROFESSIONAL ENGINEER ALBERTA" around the top and "ROBERT M. DAIR" in the center. Below the seal is a handwritten signature in blue ink, which appears to be "Greg Brooks".

Robert M. Dair, P.Eng.

Greg Brooks, P.Eng.

Figures



Source: ESRI Topographic Basemap, Accessed 2016
 Coordinate System: NAD 1983 UTM Zone 11N

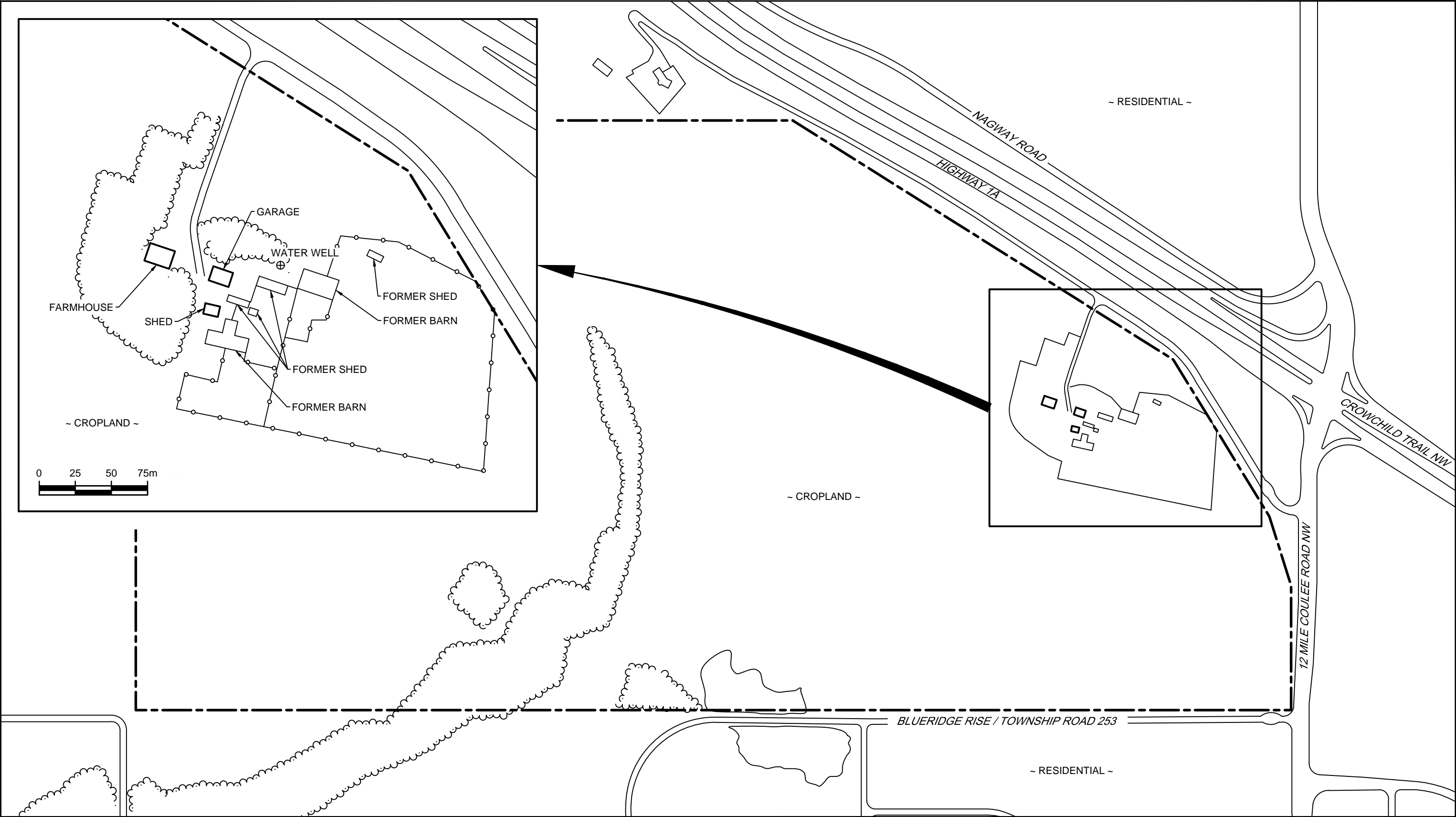


HIGHFIELD LAND MANAGEMENT
 HAWKWOOD LANDS IN BEARSPAW, LOCATED AT LOT A, PLAN 921 2196, AND
 PORTIONS OF SE AND SW 19-25-2 W5M, ROCKY VIEW COUNTY, ALBERTA
 PHASE I ENVIRONMENTAL SITE ASSESSMENT

SITE LOCATION MAP

11139400-00
 Dec 7, 2016

FIGURE 1



050100150m

LEGEND

SITE BOUNDARY

ROAD

TREE LINE

FORMER CORRAL FENCE

GHD

HIGHFIELD LAND MANAGEMENT

HAWKWOOD LANDS IN BEARSPAW (LOT A, PLAN 921 2196,

AND PORTIONS OF SE AND SW 19-25-2 W5M) ROCKY VIEW COUNTY, ALBERTA

PHASE I ENVIRONMENTAL SITE ASSESSMENT

SITE PLAN

11139400-01

Dec 8, 2016

FIGURE 2

CAD File: I:\CAD\11130000\11139400\11139400-REPORTS\11139400-01(001)\11139400-01(001)GN\11139400-01(001)GN-CA001.dwg

Appendices

Appendix A

Curricula Vitae



Cearra Stott

Project Engineer

Qualified: B.Sc Environmental Engineering, 2012

Connected: Engineer in Training with APPEGA

Professional Summary: Cearra has experience with project coordination, project budgeting, and the development of analytical reports. She has technical and field experience relating to Phase I and II Environmental Site Assessment work on commercial and industrial sites across Western Canada as well as substantive environmental compliance and health and safety reviews. Cearra is safety conscience while on site and aims to produce professional and efficient work.

Project Manager

Site Management | Shell Canada Products | AB

Cearra is project manager for multiple Sites in southern Alberta for Shell Canada Products. The Sites are both operating and former retail fueling stations. The business objective for the Sites involves limiting risk and liability to human and environmental receptors. This is accomplished through development of soil and groundwater delineation programs, monitoring, and stakeholder involvement.

Project Engineer

Phase I ESA and Hazardous Materials Survey | CBC Radio | Radium, BC

Cearra conducted a Phase I ESA and a Hazardous Materials Survey (HMS) on a radio transmission tower and associated building. The HMS included the sampling of lead based paint and asbestos materials. Cearra developed the reports which detailed the results of the field work and database searches.

Project Engineer – Team Lead

Spill Clean-Up | Baker Hughes Canada | Peace River, AB

Coordinated with subcontractors and Alberta Transportation to plan and organize the clean-up work located adjacent to a provincial highway. The field work also required communication with utility companies in the area to maintain a safe work zone near underground fiber optic lines.

Project Engineer

Phase II ESA Site Delineation | J&A Trucking Ltd. | Drayton Valley, AB

Cearra assisted in the installation of boreholes and monitoring wells to allow for site delineation. The field work also included the coordination of sub-contractors and the removal of investigative derived waste. Following field activities, the results were interpreted and a report was completed detailing the summary of field activities and the interpretation of the results.

Project Engineer

Phase I ESA | General Electric Canada | Langley, BC

GE Canada required an exit Phase I ESA as part of their due diligence prior to selling the property. The industrial manufacturing facility required further sampling following the Phase I ESA and Cearra collaborated with the GHD Vancouver, BC office to complete this work.

Other related areas of interest

- Petroleum Orientated Safety Training, 2016
- Shell Safety and 12 LSRs, 2016
- Standard First Aid and CPR, 2016
- Ground Disturbance, Level II, 2015
- H2S Alive, 2015
- 8-hour OSHA HAZWOPER Safety Training, 2015
- Construction Safety Training System-CSTS, 2012

Work History

2012 – present	GHD (formerly Conestoga-Rovers & Associates), Calgary, AB
----------------	---



Robert M. Dauk Associate

Qualified: Bachelor of Engineering (B.Eng) 2002, Master of Business Administration (MBA) 2011

Connected: Member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta, and the Association of Professional Engineers and Geoscientists of Saskatchewan

Professional Summary: Fourteen years of project management, project coordination, technical and field experience relating to Phases I, II, and III Environmental Site Assessments, geotechnical and hydrogeological investigations; site characterization studies; field performance and material testing evaluations; groundwater modelling and geotechnical laboratory analyses for numerous retail fuelling stations, commercial, industrial, municipal, and public works projects across Canada.

Environmental Investigation, Remediation, and Project Management

Project Manager

Phase I ESAs | Halliburton Energy Services | Numerous Properties, Across Alberta and Saskatchewan

Responsible for the completion of over 20 Phase I ESAs across Alberta and Saskatchewan to support the acquisition of a new business unit by Halliburton. GHD was able to meet the schedule and scope of the project to support the successful purchase of the target company.

Project Manager

Fuel Station Phase II ESA, DUA Assessment and UST Decommissioning | Shell Canada Products | Grande Prairie, AB

Robert was the project manager for a Phase II ESA, a domestic use aquifer (DUA) assessment, and a UST decommissioning and soil remediation program at the site. Successfully completed the assessment and remediation work to allow for closure of the property.

Project Manager

Fuel Station UST Decommissioning | Shell Canada Products | Mission, BC

Robert was the project manager for the UST decommissioning and assessment, and delineation of impacted groundwater at the site. Successfully completed and submitted Stage 1 PSI, DSI and Risk Assessment reports to the MOE to allow for closure of the property.

Project Manager

Phase I ESAs | Multi-Chem | Various Properties, Canada

Phase I Environmental Site Assessments – Project Manager for 10 oilfield chemical facilities across Alberta. Responsibilities included budgeting, coordinating technical staffing resources, meeting the client schedule, peer review of reports, and report preparation.

Project Manager

Soil and Groundwater Assessment and Remediation | Baker Hughes | Calgary, AB

Project manager for assessment and remediation for soil and groundwater impacts associated with petroleum hydrocarbon releases from a concrete septic tank. The scope included assessment of groundwater quality the overburden and bedrock layers, soil excavation programs, UST decommissioning and conducting a pilot study to assess the effectiveness of an MPE system.

Project Manager

Former Fuelling Station Groundwater and Soil Vapour Assessment | Shell Canada Products | Medicine Hat, AB

Robert managed annual groundwater monitoring and sampling, including soil vapour testing to verify that no significant risks are posed to the occupants of the site. Based on review of available data, the frequency of sampling and number of monitoring wells to be sampled has been decreased providing a cost saving to the client.

Project Manager

Fuel Station UST Decommissioning | Mac's Convenience Stores | Kelowna, BC

Robert was the project manager for the UST decommissioning activities conducted at the site. GHD successfully completed the decommissioning activities to allow for closure of the property.

Project Manager

Transformer Spill Remediation | ENMAX | Calgary, AB

Effectively managed the cleanup of impacted soil associated with releases of transformer oil from electrical transformers in Calgary. Completed the remedial activities within 1 day and provided confirmatory data which allowed the project to be closed in a short timeframe.



Project Manager
Soil Remediation | Baker Hughes |
Edmonton, AB

Robert managed the remediation of petroleum hydrocarbon impacted soil on a former Baker Hughes property. The soil impacts also extended onto the adjacent property and beneath the off-site building. By effective coordination with the stakeholders, contractors and field staff, the impacts were effectively remediated on both properties.

Site Assessor
Stage 1 Preliminary Site Assessment | Kitimat
LNG | Kitimat, BC

Completed a Stage 1 PSI of a former saw mill operation in Kitimat, BC to support the redevelopment of the 175-acre facility as an LNG terminal. Effectively assessed the property to allow for further drilling activities, delineation and remediation of impacts to allow for redevelopment of the facility.

Project Manager
D58 Soil, Groundwater and Geotechnical
Assessment | Secure Energy Services | Peace
River, AB

Robert managed a baseline environmental assessment and geotechnical assessment to support the design and AER approval for an oilfield full service waste disposal terminal in northern Alberta. The project was completed within the required budget and schedule and met the AER requirements to allow for approval of the facility.

Project Manager
Phase I ESAs | G&K Services | Numerous
Properties, AB

Responsible for the completion of several Phase I ESAs in Alberta and Saskatchewan to support the acquisition of new business units by G&K. GHD was able to meet the schedule and scope of the project to support the assessment of environmental risks of the target companies.

Project Manager
Site Characterization Assessment | City of
Saskatoon | Saskatoon, SK

Completed the initial Geological Site Characterization for a freeway extension and river crossing in Saskatoon, Saskatchewan. The project included a visual site review, a desktop study of historical geotechnical information, review of air photos, compilation and presentation of past geotechnical reports in the study area, preliminary geotechnical design recommendations and report preparation.

Project Manager
Soil and Groundwater Assessment and
Remediation | Baker Hughes | Red Deer, AB

Robert managed a soil and groundwater assessment of an industrial property where petroleum hydrocarbons had been released to the subsurface, as well as completed a pilot study to test groundwater remedial options including an SVE and air sparge remedial system

Project Manager
Soil and Groundwater Assessment | Secure
Energy Services | Fox Creek, AB

Robert managed a Phase I and II ESA to support an oilfield liability assessment as required by the AER. Activities included identification of potential environmental issues during the Phase I ESA and assessment and delineation of impacts during the Phase II ESA.

Project Manager
Fuel Spill Remediation | Baker Hughes | Grande
Prairie, AB

Robert managed the cleanup of a diesel fuel spill associated with a transport truck roll over adjacent to a highway in Northern Alberta. By effective coordination with contractors, the client, Alberta Transport, and adjacent buried utility owners, the impacted soil was remediated and restored in one day.

Project Manager
Phase I ESAs | Reimer | Various Properties, AB
and BC

Project manager for eight concurrent Phase I Environmental Site Assessments for trucking operations located across Alberta and British Columbia. Responsibilities included budgeting, coordinating technical staffing resources, meeting the client schedule, peer review of reports and report preparation.

Project Engineer
Site Characterization Assessment | City of
Edmonton | Edmonton, AB

Completed a Geological Site Characterization for a sanitary truck upgrade in Edmonton, Alberta. The project included desktop review of historical geotechnical information and air photos, compellation and presentation of past geotechnical reports in the study area, preliminary geotechnical design recommendations, and report preparation.

Project Manager
Soil and Groundwater Assessment and
Remediation | Shiningbank | Near Onoway, AB

Robert was the project manager for remediation of hydrocarbon impacted soil and groundwater at an upstream oil and gas site in Alberta. Project tasks included client liaison, project scheduling, site supervision, contaminant delineation, formulation of a remediation



strategy, monitoring well installation, groundwater and soil sampling, disposal of impacted water, bio treatment cell decommissioning and backfilling documentation, budget preparation, and preparation of an annual report.

Project Manager
Reclamation Certificate Applications |
Erehwon | Near Red Deer, AB

Project manager for a project relating to an application for a reclamation certificate for a dry and abandoned well site for an upstream oil and gas property in Alberta. The project included a completion of a Detailed Site Assessment and Phase I and II Environmental Site Assessments for submission to Alberta Environment.

Project Manager
PCB Remediation | Confidential Client |
Confidential location, AB

Project engineer for remediation of hazardous PCB-impacted soil at an industrial facility in Alberta. Project tasks have included client liaison, project scheduling, site supervision, contaminant delineation, formulation of a remediation strategy, soil sampling, supervision of construction of a decontamination cell, backfilling documentation, budget preparation, and preparation of project status update reports.

Primary Author
Resource Estimate | Confidential Client | BC
Resource Estimate - Primary author for the revision and update of a technical report for a mine located in BC, to ensure compliance with the National Instrument 43-101, Standards for Disclosure for Mineral Projects.

Project Engineer
Environmental Screening | Parks Canada |
Banff, AB

Environmental Screening - Project manager for an environmental screening project within a Canadian National Park for development of infrastructure services, which utilized the Canadian Environmental Assessment Act report format. Potential environmental impacts included: destruction of habitat, interruption of mating and rearing cycles, sediment, aquatic and aesthetic impacts, and soil contamination. Other project tasks included: development permit completion and application, acted as an intermediary between the client and other consultants, and report preparation.

Project Engineer
Hydrological Analysis | Confidential Client |
Northern SK

Hydrological Analysis - Analyzed pump test data and designed a hydrogeological model for preliminary groundwater inflow estimates for a proposed gold mining operation in Northern Saskatchewan.

Project Engineer
Landfill Gap Analysis | City of High River | High
River, AB

Robert was involved with the design and management of an environmental investigation to delineate and assess the extent of groundwater impacts and distribution of methane gas on the properties adjacent to an inactive landfill to support the development of Tier 2 guidelines.

Work history

2011 – present	Associate, GHD (formerly Conestoga-Rovers & Associates), Calgary, AB
	Named Associate, 2014
2010 – 2011	Team Lead Engineering and Technical Services, Cirrus Environmental, Calgary, AB
2004 – 2009	Conestoga-Rovers & Associates, Calgary, AB
2002 - 2004	P. Machibroda Engineering Ltd., Saskatoon, SK

Other related areas of interest

Recognized (Certifications/Trainings):

- ACSA Safe Trenching, Excavation, and Ground Disturbance Program, 2004
- Ground Disturbance, Level II, 2011
- H2S Alive, 2016
- Petroleum Safety Training, 2011
- First Aid 2016
- HAZWOPER 2004
- Shell GESS Cost Reduction Award Winner in Canada For Q3 2014



Qualified: Civil Engineering, University of Waterloo, 1987; Licensed Professional Engineer in Alberta, Ontario, Manitoba, and Saskatchewan

Connected: Former Ontario Chapter Executive, National Brownfield Association

Professional Summary: Mr. Brooks is a professional engineer and a Principal in GHD. Mr. Brooks leads GHD's Canadian Environmental Due Diligence practice and has been extensively involved in Site Investigations, Phase I and II ESAs, Site Remediation, Risk Assessment, and Brownfield Redevelopment in Canada and the United States. Past experience also includes the planning and implementation of Environmental Compliance Assessments in Canada and the United States. Mr. Brooks also oversaw the development and implementation of GHD North America's ISO 9001 Quality System.

Remedial Design/Construction

- Construction supervision of leachate collection system and treatment facility for groundwater contaminated with coal tar. Treatment facility consisted of physical tar/water separation followed by chemical adsorption using granular activated carbon for the Regional Municipality of Ottawa-Carleton - Lees Avenue Transitway Station, Ottawa, Ontario.
- Design of leachate recirculation system to enhance rapid landfill stabilization for Metropolitan Toronto - Keele Valley Landfill Site, Maple, Ontario.
- Design and construction of landfill gas recovery and utilization for the Regional Municipality of Waterloo - Kitchener, Ontario.
- Design of groundwater extraction system for contaminated groundwater at existing cement plant for Canada Cement Lafarge, Woodstock, Ontario.
- Supervision of excavation and securement of soils contaminated with coal tar for the Regional Municipality of Ottawa-Carleton - Lees Avenue Transitway Station, Ottawa, Ontario.
- Development of remediation plan for the former coal gasification plant in Woodstock, Ontario. Study included complete field investigation and evaluation of remedial alternatives for the City of Woodstock, Woodstock, Ontario.
- Executed a hydrogeologic investigation of coal tar contaminated site including the design of remedial alternatives for the Algoma Steel Corporation, Sault Ste. Marie, Ontario.
- Site Engineer during bioremediation project for soils contaminated with oil tar. Project also included sampling of soils and analysis of analytical data for Ultramar Canada, Port Stanley, Ontario.
- Remedial action plan design for a former lead Smelting and Refinery Plant for Toronto Refiners and Smelters Ltd., Toronto, Ontario.
- Design Operations and Stormwater Management Plans for a proposed clay borrow operation. The project involved all required engineering support for a Joint Board Hearing under the Consolidated Hearing Act for the Municipality of Metropolitan Toronto, Toronto, Ontario.
- Design of a Coal Tar Collection System which included; shallow perforated pipe collector, deep coal tar collection well, creek rerouting and infilling, and overflow weir tar collector for the Algoma Steel Corporation, Sault Ste. Marie, Ontario.
- Site Engineer during remediation of a diesel fuel spill. Project included site remediation with contaminated soil removal and redesign of existing fuel facilities. Construction of a temporary fuel facility was required during construction for the Britannia Water Filtration Plant, Regional Municipality of Ottawa-Carleton, Ottawa, Ontario.
- Site supervisor during the excavation of coal tar contaminated materials, Lancaster Street reconstruction for the City of Kitchener, Kitchener, Ontario.
- Project Manager for the decommissioning of a rental car service facility at the Lester B. Pearson International Airport. Remedial activities included UST closure, mitigation of soil impacts attributable to past spills and site restoration for Avis Rent-A-Car System.
- Project Manager for Remedial Design, including the change of USEPA Record of Decision at a former Tannery Site in Sault Ste. Marie Michigan.
- Site investigation and design of groundwater pump and treatment system for a retail service station in Kitchener - Witter's Fuels.
- Preliminary Assessment, Site Investigation and Remedial Investigation for ISRA closure of a manufacturing facility in Perth Amboy, New Jersey.

- Design and construction oversight for an air sparging and soil vapour extraction system to remove chlorinated solvents from groundwater at the downgradient perimeter of an industrial facility, Brantford, Ontario.
- Design of a groundwater extraction and treatment facility to remove trichloroethylene from groundwater, Guelph, Ontario.
- Design of a chemical oxidation remedial program to remedial shallow groundwater under a chemical storage shed, Waterloo, Ontario.
- Design and oversight of soil remediation of an active trucking facility, Mississauga, Ontario.

Facility Decommissioning/Brownfields

- Decommissioning of a 200,000-square-foot manufacturing facility to accommodate change in land use and sale of property - FMG Timberjack.
- Investigation and decommissioning of a 200,000-square-foot former smelting facility in Scarborough, Ontario to facilitate sale and redevelopment of the property - Eli Lilly Canada. Project included design of a vapour barrier to mitigation potential for migration of chlorinated solvents to indoor air.
- Site investigation and remedial design for decommissioning of a former pesticide formulation plant for Pfizer C&G Inc., Sarnia, Ontario.
- Assessment and cleanup of a former outboard marine motor manufacturing facility to accommodate change in land use and sale of property. Assessment included a Site Specific Risk Assessment completed in accordance with the MOE Contaminated Sites Guideline.
- Fuel facility decommissioning for trucking facility in Oshawa, Ontario - Yellow Freight System Inc.
- Consultant to the Town of Collingwood on the Brownfield redevelopment of the Canada Steamship Lines property.
- Consultant to the University of Waterloo on the development of the School of Pharmacy and Medical School campus in Kitchener, Ontario.
- Investigation and development of remedial cost estimates for a former footwear manufacturing facility that was impacted with chlorinated solvents in Kitchener, Ontario.
- Investigation and preparation of a Remedial Action Plan for a former automotive parts manufacturing facility that was impacted with chlorinated solvents in Waterloo, Ontario.
- Investigation of a former electronics manufacturing facility impacted with chlorinated solvents in Kitchener, Ontario.

Environmental Management Systems

- Development and implementation of an Environmental Management System for five manufacturing facilities located in Ontario - GSW Inc. One of these facilities implements an isocyanate control and monitoring program.
- Development and implementation of an Environmental Management System for 16 automotive parts manufacturing facilities in Ontario - Linamar Corporation.
- Development of an Environmental Management System for a large automotive frame manufacturing facility in Ontario - Budd Canada Inc.
- Completed ISO 14000 GAP analysis on largest quarry operation in Ontario.
- Review of aspects and impacts for large chemical manufacturing facility.
- Completed ISO 14000 GAP analysis of heat treating facility.
- Development and implementation of an ISO 14000 compliant EMS for electronics manufacturer (Christie Digital).
- Development of ISO 14000 EMS for two glass mat plants and a ceramic materials plant.

Risk Assessment Projects

- Risk Assessment for a former industrial manufacturing facility to facilitate redevelopment for Big Box commercial use.
- Risk Assessment for a former textile facility to facilitate redevelopment for institutional use (University of Waterloo).
- Risk Assessment of residential neighbourhood to evaluate potential exposure to trichloroethylene and degradation compounds from shallow groundwater (United Technologies Corporation).
- Risk Assessment of an industrial facility in Toronto to facilitate management of solvent impacts under the building floor.
- Risk Assessment of a former commercial property with past industrial uses to facilitate development of an institutional facility that includes residential land uses.
- Risk Assessment of a former lakefill and industrial property in downtown Toronto, for reuse as residential/commercial (Context Developments).
- Risk Assessment (ongoing) of a former distillery for development into a University campus (Balsillie School - Waterloo).
- Risk Assessment (ongoing) of a former trucking facility and service station in Kitchener, Ontario.



- Risk Assessment (ongoing) of a former automotive parts manufacturing facility in Waterloo, Ontario.
- Risk Assessment (ongoing) of a commercial shopping mall impacted with hydrocarbons in London, Ontario.
- Risk Assessment (ongoing) of a former paint manufacturing facility in Mississauga, Ontario.

Environmental Site Assessment and Compliance Assessment Experience

- Completed over 500 Phase I Environmental Site Assessments and Phase II Environmental Site Assessments at facilities in Canada, the United States, Mexico, and Europe. Selected experience listed below.
- Environmental Compliance Assessment for Canadian Gypsum Corporation mine site in Hagersville, Ontario.
- Phase I Environmental Site Assessment of a large aggregate extraction and processing firm. The Phase I Environmental Site Assessment included 26 sites located in Ontario and Michigan. Facilities included pits, quarries, aggregate processing operations, and truck servicing shops. Audits were focused on historical practices as well as compliance with current environmental legislation.
- Historic Site Operations Audit of a closed landfill site located in Southern Ontario for Waste Management of Canada Inc.
- Phase I Environmental Site Assessment of two automobile parts manufacturing facilities located in Southern Ontario. Audit focused on compliance with environmental legislation for TRW Canada Limited.
- Multiple Phase I and II Environmental Assessments, and Remedial Activities for an international equipment manufacturer and retailer. Work included Sites in Quebec, Ontario, Manitoba, Saskatchewan and British Columbia for the J.I. Case Company - Racine, Wisconsin.
- Phase I Environmental Site Assessment, and Phase II Work Plan, of a national transportation company. Assessments were completed preparatory to the sale of the business for Kingsway Transport - Federal Industries.
- Phase I Environmental Site Assessment, and Phase II Site Remediation for a former adhesive manufacturing facility in Toronto, Ontario - Nacan Products Limited, Brampton.
- Phase I Environmental Site Assessment, Environmental Compliance Assessment, Phase II Site Investigation, and Phase III Environmental Work Plan for an automobile parts manufacturer in Waterloo, Ontario for General Motors, Detroit, Michigan.
- Phase I Environmental Site Assessment, Phase II Environmental Site Assessment, and implementation of plant closure and cleanup for 185,000-square-foot spark plug manufacturing facility - Champion Spark Plug, Windsor, Ontario.
- Phase I Environmental Site Assessment and Phase II Environmental Site Assessment of former Aluminum Smelting facility and negotiation with MOEE for limited cleanup program and redevelopment of the property - Eli Lilly Canada.
- Phase I Environmental Site Assessment and Phase II Environmental Site Assessment of a 1.5-million-square-foot diesel electric locomotive and light armored vehicle manufacturing facility, London, Ontario - General Motors of Canada Diesel Division.
- Phase I Environmental Site Assessments and Compliance Assessments of approximately 26 funeral homes, cemeteries, and crematories in British Columbia, Alberta, Manitoba, Saskatchewan, Ontario, Quebec, New York, Michigan, and New Jersey - The Loewen Group.
- Project Manager for 22 Phase I and II Environmental Site Assessments of Diversey Inc. facilities in Canada, United States, United Kingdom, Mexico, and the Caribbean - Unilever Canada Inc. Also completed four Environmental Compliance Assessments.
- Phase I Environmental Site Assessments of five metal fabrication facilities in Brooklyn, New York - Masco.
- Phase I and Phase II Environmental Site Assessment of a former automotive parts manufacturing facility prior to purchase, Cambridge, Ontario - Challenger Motor Freight.
- Phase I Environmental Site Assessment and Compliance Assessment of a seafood preparation facility including an evaluation of wastewater treatment requirements and associated costs - Unilever Canada Inc.
- Phase I Environmental Site Assessments and Compliance Assessments of three chemical blending facilities prior to acquisition by Unilever Inc. - Baltimore, Maryland, Omaha Nebraska and Charlotte, North Carolina.
- Phase I and Phase II Environmental Site Assessment of former paint manufacturing facility, retail service station, scrap yard and leather goods manufacturer, Vancouver, British Columbia - The Loewen Group.
- Phase I Environmental Site Assessment of a refrigerated warehouse facility to support the sale of the property, Belleville, Ontario - Coca Cola Foods.
- Phase I Environmental Site Assessment and Compliance Assessment of two tube manufacturing facilities, Sault Ste. Marie and London, Ontario - Arc Tube.



- Phase I Environmental Site Assessment of industrial facility for lease termination, Stoney Creek, Ontario - Westinghouse Canada.
- Numerous Phase I Environmental Site Assessments of trucking facilities - Yellow Freight Systems/Roadway.
- Phase I and Phase II Environmental Site Assessment of drycleaning facilities, Abbotsford and Kelowna, British Columbia, and Barrie, Ontario.
- Phase I Environmental Site Assessment of former railway line, North Bay, Ontario, Owen Sound, Ontario and Sarnia, Ontario.
- Phase I Environmental Site Assessment of forge facility in Ontario - Linamar Corporation.
- Phase I Environmental Site Assessments of numerous rental car facilities in Eastern Canada - Avis Rent A Car System.
- Phase I Environmental Site Assessment of trucking facility in Port Clinton, Ohio - Challenger Motor Freight Inc.
- Phase I Environmental Site Assessment of pigment manufacturing facility in Bromont, Quebec - Dominion Colour Corporation.
- Phase I Environmental Site Assessment of dairy facility in Ontario - Dairyworld Foods.
- Environmental Compliance Assessment of large PVC film manufacturing facility, Cambridge, Ontario - Canadian General Tower.
- Phase I Environmental Site Assessment of pyrotechnics manufacturing facility in Ontario - Miller Thomson.
- Phase I Environmental Site Assessment of several dairy facilities in Ontario and Quebec - Parmalat.
- Phase I Environmental Site Assessment and Compliance Assessment for three lighting fixture manufacturing facilities in New Windsor, New York.
- Phase I and II Environmental Site Assessment of large block of land in downtown Calgary for mix use residential and commercial redevelopment.
- Phase I and II Environmental Site Assessment of paint manufacturing facility in Mississauga, Ontario.
- Phase I and II Environmental Site Assessment of plate glass manufacturing facility in Owen Sound, Ontario.
- Phase II Environmental Site Assessment of former manufacturing facility in Guelph, Ontario.
- Phase I Environmental Site Assessment of rock wool manufacturing facility in Sarnia, Ontario.

Work history

1986 – present	Principal, GHD (formerly Conestoga-Rovers & Associates), Waterloo, ON
	Named to CRA Executive Committee, 2009
	Named CRA Principal, 1999
	Named CRA Associate, 1996

Appendix B

Environmental Databases Search Report



DATABASE REPORT

Project Property: *Highlands Phase I ESA
Bearspaw
Calgary AB*

Project No:

Report Type: *Quote - Custom-Build Your Own Report*

Order No: *20161120004*

Requested by: *GHD Ltd.*

Date Completed: *November 25, 2016*

**Environmental Risk
Information Services**
A division of Glacier Media Inc.
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E: info@erisinfo.com
www.erisinfo.com

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Executive Summary

Property Information:

Project Property: *Highlands Phase I ESA
Bears paw Calgary AB*

Project No:

Order Information:

Order No: *20161120004*
Date Requested: *November 20, 2016*
Requested by: *GHD Ltd.*
Report Type: *Quote - Custom-Build Your Own Report*

Additional Products:

Aerial Photographs *National Collection - Laser*
City Directory Search *Subject Site*
Insurance Products *Fire Insurance Maps/Inspection Reports/Site Specific Plans*
Land Title Search *Historical Title Search*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
AGR	<i>Agriculture and Fisheries - Certificates of Approval</i>	Y	0	0	0
AOGW	<i>Alberta Oil and Gas Wells</i>	Y	0	0	0
AUWR	<i>Automobile Wrecking & Supplies</i>	Y	0	0	0
CAWD	<i>Waste Management Facilities - Certificates of Approval</i>	Y	0	0	0
CFO	<i>Confined Feeding Operations</i>	Y	0	0	0
CHEM	<i>Chemical Processing Operations - Certificates of Approval</i>	Y	0	0	0
CONV	<i>Compliance and Convictions</i>	Y	0	0	0
EAS	<i>Enforcement Action Summary</i>	Y	0	0	0
EEM	<i>Environmental Effects Monitoring</i>	Y	0	0	0
EHS	<i>ERIS Historical Searches</i>	Y	0	0	0
EIIS	<i>Environmental Issues Inventory System</i>	Y	0	0	0
EP TANKS	<i>Alberta Environment & Parks Storage Tanks</i>	Y	0	0	0
ESAR	<i>Environmental Site Assessment Repository</i>	Y	0	0	0
FAC	<i>Facility List</i>	Y	0	0	0
FCON	<i>Federal Convictions</i>	Y	0	0	0
FCS	<i>Contaminated Sites on Federal Land</i>	Y	0	0	0
FIS	<i>Field Inspection Incident Report</i>	Y	0	0	0
FOOD	<i>Food Processing Operations - Certificates of Approval</i>	Y	0	0	0
FST	<i>PTMAA Fuel Storage Tanks</i>	Y	0	0	0
GEN	<i>Waste Generators Summary</i>	Y	0	2	2
GHG	<i>Greenhouse Gas Emissions from Large Facilities</i>	Y	0	0	0
GPP	<i>Gas Processing Plants</i>	Y	0	0	0
HELP	<i>Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database</i>	Y	0	0	0
HORW	<i>Horizontal Wells</i>	Y	0	0	0
IAFT	<i>Indian & Northern Affairs Fuel Tanks</i>	Y	0	0	0
LDS	<i>Identification and Verification of Active and Inactive Land Disposal Sites</i>	Y	0	0	0
LDSI	<i>Land Disposal Sites on Indian Reserves</i>	Y	0	0	0
LUM	<i>Lumber Related Operations - Certificates of Approval</i>	Y	0	0	0
MINE	<i>Canadian Mine Locations</i>	Y	0	0	0
MMB	<i>Metals, Minerals and Building Materials Operations - Certificates of Approval</i>	Y	0	0	0
MNR	<i>Mineral Occurrences</i>	Y	0	0	0
NATE	<i>National Analysis of Trends in Emergencies System (NATES)</i>	Y	0	0	0
NC TANKS	<i>PTMAA Non-Compliant Storage Tanks</i>	Y	0	0	0
NDFT	<i>National Defense & Canadian Forces Fuel Tanks</i>	Y	0	0	0
NDSP	<i>National Defense & Canadian Forces Spills</i>	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBW	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OAM	Operating and Abandoned Mines	Y	0	0	0
OGW	Oil and Gas Wells	Y	0	0	0
ORP	Alberta Orphan Wells	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PCG	Petrochemical, Coal and Gas Operations - Certificates of Approval	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PITS	Conglomerate and Waste Management Facilities	Y	0	0	0
PSP	Alberta Private Sewage Disposal Permits	Y	0	0	0
PTMAA PERMITS	PTMAA Approved (Open) Permits	Y	0	0	0
REC	Hazardous Waste Receivers Summary	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	1	1
SPEC	Special Operation Classifications - Certificates of Approval	Y	0	0	0
WDS	Inventory of Waste Disposal Sites	Y	0	0	0
WSTE	Wastewater Operations	Y	2	0	2
WWIS	Water Well Information System	Y	6	4	10
Total:			8	7	15

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
<u>1</u>	WWIS		AB	-/0.0	0.06	<u>12</u>
<u>2</u>	WWIS		AB	-/0.0	30.63	<u>13</u>
<u>2</u>	WWIS		AB	-/0.0	30.63	<u>17</u>
<u>2</u>	WWIS		AB	-/0.0	30.63	<u>22</u>
<u>3</u>	WWIS		AB	-/0.0	31.25	<u>26</u>
<u>4</u>	WSTE	Municipal District of Rockyview No. 44	Municipal District of Rocky View No. 44 AB	-/0.0	35.77	<u>28</u>
<u>4</u>	WSTE	Municipal District of Rocky View No. 44	Municipal District of Rocky View No. 44 AB	-/0.0	35.77	<u>28</u>
<u>5</u>	WWIS		AB	-/0.0	23.30	<u>28</u>

Executive Summary: Site Report Summary - Surrounding Properties

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev Diff (m)</i>	<i>Page Number</i>
6	GEN	May-Ruben Thermal Solutions Inc.	253147 Bearspaw RD NW Calgary AB T3L 2P5 AB	WNW/62.3	20.02	32
6	GEN	May-Ruben Thermal Solutions Inc.	253147 Bearspaw RD NW Calgary AB T3L 2P5 AB	WNW/62.3	20.02	33
7	SCT	Westfour Oil & Gas Ltd.	83 Blueridge Rise Calgary AB T3L 2N6	SE/90.8	-1.65	33
8	WWIS		AB	SW/218.6	-22.96	33
9	WWIS		AB	W/219.5	3.13	39
9	WWIS		AB	W/219.5	3.13	44
10	WWIS		AB	SSE/220.2	-7.82	48

Executive Summary: Summary By Data Source

GEN - Waste Generators Summary

A search of the GEN database, dated Dec 31, 2015 has found that there are 2 GEN site(s) within approximately 0.25 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
May-Ruben Thermal Solutions Inc.	253147 Bearspaw RD NW Calgary AB T3L 2P5 AB	62.3	<u>6</u>
May-Ruben Thermal Solutions Inc.	253147 Bearspaw RD NW Calgary AB T3L 2P5 AB	62.3	<u>6</u>

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 1 SCT site(s) within approximately 0.25 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Westfour Oil & Gas Ltd.	83 Blueridge Rise Calgary AB T3L 2N6	90.8	<u>7</u>

WSTE - Wastewater Operations

A search of the WSTE database, dated 1993-2012 has found that there are 2 WSTE site(s) within approximately 0.25 kilometers of the project property.

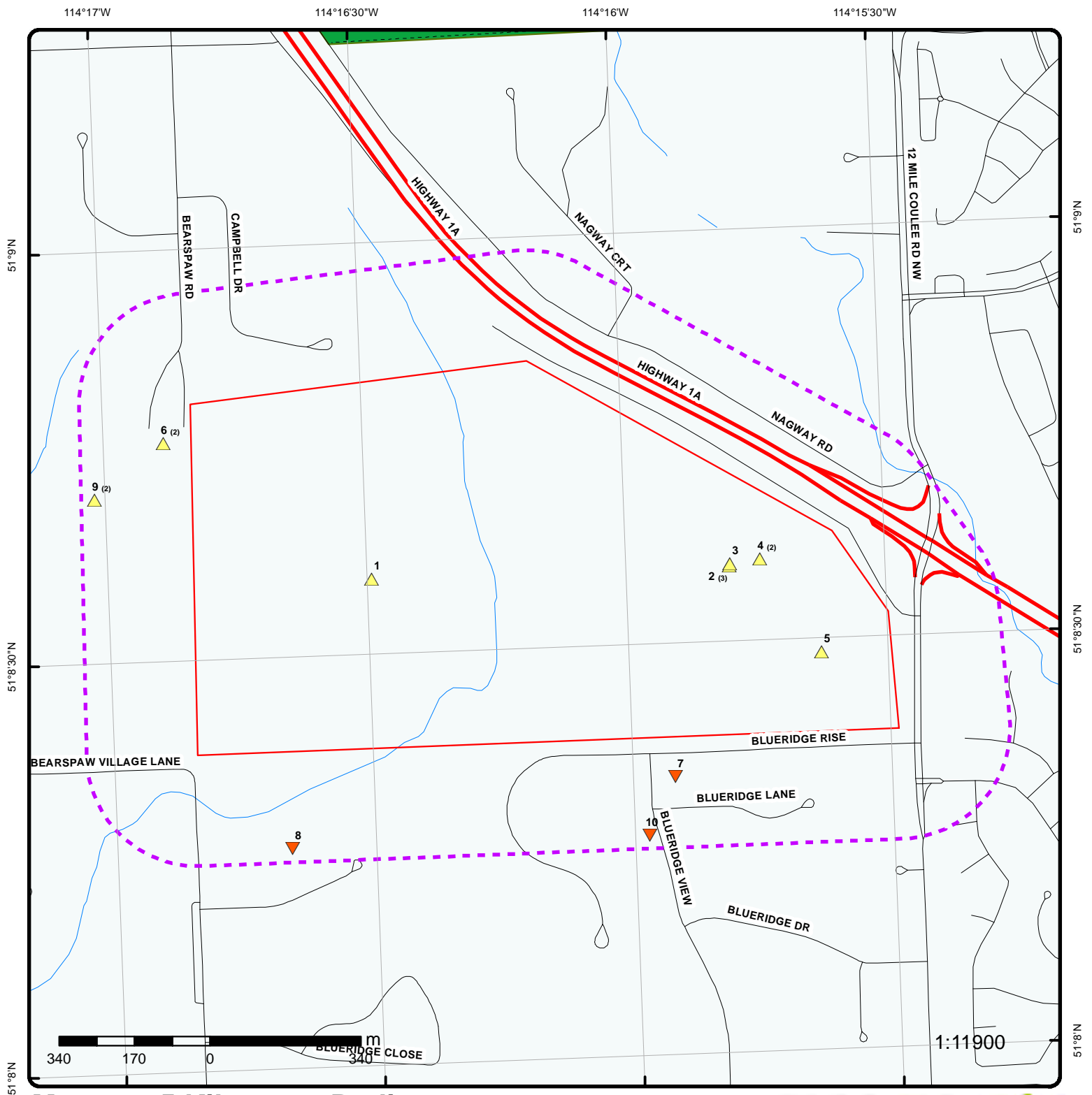
<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Municipal District of Rockyview No. 44	Municipal District of Rocky View No. 44 AB	0.0	<u>4</u>
Municipal District of Rocky View No. 44	Municipal District of Rocky View No. 44 AB	0.0	<u>4</u>

WWIS - Water Well Information System

A search of the WWIS database, dated Aug 31, 2015 has found that there are 10 WWIS site(s) within approximately 0.25 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	AB	0.0	<u>1</u>
	AB	0.0	<u>2</u>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	AB	0.0	<u>2</u>
	AB	0.0	<u>2</u>
	AB	0.0	<u>3</u>
	AB	0.0	<u>5</u>
	AB	218.6	<u>8</u>
	AB	219.5	<u>9</u>
	AB	219.5	<u>9</u>
	AB	220.2	<u>10</u>



Map : 0.25 Kilometer Radius

Address: Bears paw, Calgary, AB

Order No: 20161120004



 Project Property	 Expressway	 Industrial and Resource - Regions	 National Park
 Buffer Outline	 Principal Highway	 Main Line	 Provincial or Territorial Park
▲ Eris Sites with Higher Elevation	 Secondary Highway	 Sidetrack	 Other Park
▲ Eris Sites with Same Elevation	 Major Road	+ Transit Line	 Golf Course or Driving Range
▼ Eris Sites with Lower Elevation	 Local road	 Abandoned Line	 Park or Sports Field
○ Eris Sites with Unknown Elevation	 Trail		 Other Recreation Area
	 Proposed Road		
	 Ferry Route/Ice Road		

114°16'30"W

51°9'N

51°9'N



Aerial

Address: Bearspaw, Calgary, AB

Source: ESRI World Imagery

Order No: 20161120004

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES



© Ecolog ERIS Ltd

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
1	1 of 1	-/0.0	1,203.8	AB	WWIS
Well ID: 363239 DLS Coordinates: SW-19-025-02-5 Elevation (ft): Licence NO: Oil Present: Water Requirem Per Day:					
Elevation Source: Not Obtained Lot: Block: Plan:					
Report Information					
--					
--					
Owner Information					
--					
Well Owner: 10635874 Owner Name: LAMB, BROOKS PO Box: 13 Address: SITE 12 RR4, CALGARY City: Postal Code: T2M 4L4 Province: Country:					
--					
Pump Installed Depth: Pump Type Installed: Pump Model: Pump Horsepower: Well Disinfected: NO Other Log: Diverted Water Source: Diverted Water Amount: Diversion Date/Time: Created By: Submitted By: Approv Holder Sign Date: Additional Comments: Model Output Rating:					
Driller ID: 2533726 User ID: Last Name: DRILLER Middle Initial: NA First Name: UNKNOWN Journeyman Number: 1 --					
Drilling Company ID: 11110 Company Name: UNKNOWN DRILLER Street Address: UNKNOWN City: UNKNOWN Province: AB Country: CA Postal Code: Email: gwinfo@gov.ab.ca Starting Well ID: 1973500 Ending Well ID: 1973599 Last Well ID Used: 1973599					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
--		--			
Date Received:		05-FEB-92			
Drilling Method:		Unknown			
Type Of Work:		Chemistry			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Existing Well ID:					
Well Use:		Domestic			
Other Well Use:					
Total Depth Drilled(ft):		180			
Finished Well Depth(ft):					
Drilling Start Date:					
Drilling End Date:					
Casing Material:					
Casing Od(in):		0			
Casing Thickness(in):		0			
Casing Bottom(ft):		0			
Liner Material:					
Liner OD:		0			
Liner Thickness:		0			
Liner Top:		0			
Liner Bottom:		0			
Perforation By:					
Annular Seal Material:					
Annular Seal From(ft):		0			
Annular Seal To(ft):		0			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:		0			
Pack Units:					
Loc Verification Method:		Not Verified			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:					
Recommended Intake Depth:					
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		180			
--		--			
<u>2</u>	1 of 3	-0.0	1,234.4	AB	WWIS

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Well ID:	402668			Elevation Source:	Not Obtained
DLS Coordinates:	SE-19-025-02-5			Lot:	
Elevation (ft):				Block:	
Licence NO:				Plan:	
Oil Present:					
Water Requirem Per Day:					
--- Details ---					
GIC Well ID:	402668				
Depth:	111				
Colour:					
Description:					
Material:	Clay & Sand				
+					
GIC Well ID:	402668				
Depth:	167				
Colour:	Green				
Description:	Water Bearing				
Material:	Shale				
+					
GIC Well ID:	402668				
Depth:	42				
Colour:					
Description:					
Material:	Till				
+					
GIC Well ID:	402668				
Depth:	90				
Colour:					
Description:	Cemented				
Material:	Gravel				
+					
GIC Well ID:	402668				
Depth:	159				
Colour:	Light Green				
Description:					
Material:	Shale				
+					
GIC Well ID:	402668				
Depth:	114				
Colour:	Gray				
Description:					
Material:	Shale				
+					
GIC Well ID:	402668				
Depth:	175				
Colour:	Gray				
Description:					
Material:	Shale				
Report Information					
--	--				
--	--				
Owner Information					
--	--				
Well Owner:	10687499				
Owner Name:	DYER, NORM				
PO Box:					
Address:					
City:					
Postal Code:					
Province:					
Country:					
--	--				
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elevation (m)</i>	<i>Site</i>	<i>DB</i>
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:					
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			
First Name:		UNKNOWN			
Journeyman Number:		1			
--		--			
Drilling Company ID:		24288			
Company Name:		DoeRING DRILLING LTD.			
Street Address:		BOX 4028			
City:		OLDS			
Province:		AB			
Country:		CA			
Postal Code:		T4H 1P6			
Email:		GWINFO@GOV.AB.CA			
Starting Well ID:		1245000			
Ending Well ID:		1249999			
Last Well ID Used:		1245341			
--		--			
Date Received:		10-JAN-75			
Drilling Method:		Cable Tool			
Type Of Work:		New Well			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Domestic			
Other Well Use:					
Total Depth Drilled(ft):		175			
Finished Well Depth(ft):					
Drilling Start Date:					
Drilling End Date:		26-MAY-67			
Casing Material:		Steel			
Casing Od(in):		5.56			
Casing Thickness(in):		.19			
Casing Bottom(ft):		90			
Liner Material:		Steel			
Liner OD:		4.56			
Liner Thickness:		0			
Liner Top:		0			
Liner Bottom:		175			
Perforation By:					
Annular Seal Material:					
Annular Seal From(ft):		0			
Annular Seal To(ft):		0			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Pack Amount:					
Pack Units:					
Loc Verification Method:		Not Verified			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		0			
Recommended Intake Depth:		0			
--		--			
Perforation Information					
--		--			
From(ft):		18			
To(ft):		175			
Diameter(in):		0			
Interval(in):		0			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		175			
--		--			
Lithologies Information					
--		--			
Depth (ft):		90			
Water Bearing:		NO			
Colour:					
Description:		Cemented			
Material:		Gravel			
--		--			
Depth (ft):		111			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Clay & Sand			
--		--			
Depth (ft):		114			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		167			
Water Bearing:		YES			
Colour:		Green			
Description:		Water Bearing			
Material:		Shale			
--		--			
Depth (ft):		175			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		42			
Water Bearing:		NO			
Colour:					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Description:					
Material:		Till			
--		--			
Depth (ft):		159			
Water Bearing:		NO			
Colour:		Light Green			
Description:					
Material:		Shale			
--		--			
Pump Test					
--		--			
Test Date:		26-MAY-67			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		128			
End Water Level:					
Water Removal Type:		Bailer			
Water Removal Rate:					
Removal Depth From:		0			
Reason for Short Test:					
--		--			

2	2 of 3	-/0.0	1,234.4	AB	WWIS
Well ID:		402685	Elevation Source:		Estimated
DLS Coordinates:		SE-19-025-02-5	Lot:		3
Elevation (ft):		4125	Block:		
Licence NO:			Plan:		
Oil Present:					
Water Requirem Per Day:					
--- Details ---					
GIC Well ID:		402685			
Depth:		257			
Colour:		Blue			
Description:					
Material:		Shale			
+					
GIC Well ID:		402685			
Depth:		263			
Colour:					
Description:		Soft			
Material:		Sandstone			
+					
GIC Well ID:		402685			
Depth:		235			
Colour:					
Description:		Hard			
Material:		Sandstone			
+					
GIC Well ID:		402685			
Depth:		245			
Colour:					
Description:		Soft			
Material:		Sandstone			
+					
GIC Well ID:		402685			
Depth:		220			
Colour:					
Description:					
Material:		Old Well			
+					
GIC Well ID:		402685			
Depth:		268			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Colour:		Blue			
Description:					
Material:		Shale			
+					
GIC Well ID:		402685			
Depth:		254			
Colour:					
Description:		Hard			
Material:		Sandstone			
Chemical Analysis Information					
--		--			
Sample Number:		211			
Sample Date:					
Analysis Date:		21-JAN-76			
Laboratory:		AE			
Water Level:		204			
Aquifer:					
Remarks:					
--		--			
Analysis Items Information					
--		--			
Element Name:		pH			
Element Symbol:		PH			
Decimal Places:		2			
Value:		7.7			
--		--			
Element Name:		Ion Balance			
Element Symbol:		IONBAL			
Decimal Places:		4			
Value:		.81			
--		--			
Element Name:		Sodium			
Element Symbol:		NA			
Decimal Places:		4			
Value:		63			
--		--			
Element Name:		Calcium			
Element Symbol:		CA			
Decimal Places:		4			
Value:		76			
--		--			
Element Name:		Potassium			
Element Symbol:		K			
Decimal Places:		4			
Value:		3.99			
--		--			
Element Name:		Fluoride			
Element Symbol:		F			
Decimal Places:		4			
Value:		.27			
--		--			
Element Name:		Electrical Conductivity			
Element Symbol:		EC			
Decimal Places:		0			
Value:		1000			
--		--			
Element Name:		Nitrite			
Element Symbol:		NO2			
Decimal Places:		4			
Value:		-.1			
--		--			
Element Name:		Hydroxide			
Element Symbol:		OH			
Decimal Places:		4			
Value:		0			
--		--			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elevation (m)</i>	<i>Site</i>	<i>DB</i>
<i>Element Name:</i>		Total Hardness			
<i>Element Symbol:</i>		TH			
<i>Decimal Places:</i>		4			
<i>Value:</i>		381			
--		--			
<i>Element Name:</i>		Total Alkalinity			
<i>Element Symbol:</i>		TA			
<i>Decimal Places:</i>		4			
<i>Value:</i>		433			
--		--			
<i>Element Name:</i>		Total Dissolved Solids			
<i>Element Symbol:</i>		TDS			
<i>Decimal Places:</i>		0			
<i>Value:</i>		651			
--		--			
<i>Element Name:</i>		Nitrate plus Nitrite			
<i>Element Symbol:</i>		NO2_NO3_N			
<i>Decimal Places:</i>		4			
<i>Value:</i>		-.1			
--		--			
<i>Element Name:</i>		Iron			
<i>Element Symbol:</i>		FE			
<i>Decimal Places:</i>		4			
<i>Value:</i>		.6			
--		--			
<i>Element Name:</i>		Bicarbonate			
<i>Element Symbol:</i>		HCO3			
<i>Decimal Places:</i>		4			
<i>Value:</i>		528.05			
--		--			
<i>Element Name:</i>		Total Phosphorus			
<i>Element Symbol:</i>		TP			
<i>Decimal Places:</i>		4			
<i>Value:</i>		0			
--		--			
<i>Element Name:</i>		Magnesium			
<i>Element Symbol:</i>		MG			
<i>Decimal Places:</i>		4			
<i>Value:</i>		47.04			
--		--			
<i>Element Name:</i>		Chloride			
<i>Element Symbol:</i>		CL			
<i>Decimal Places:</i>		4			
<i>Value:</i>		-1			
--		--			
<i>Element Name:</i>		Sulphate			
<i>Element Symbol:</i>		SO4			
<i>Decimal Places:</i>		4			
<i>Value:</i>		200.29			
--		--			
<i>Element Name:</i>		total Kjeldahl nitrogen			
<i>Element Symbol:</i>		TKN			
<i>Decimal Places:</i>		4			
<i>Value:</i>		0			
--		--			
<i>Report Information</i>					
--		--			
--		--			
<i>Owner Information</i>					
--		--			
<i>Well Owner:</i>		10687516			
<i>Owner Name:</i>		EDWARDS, L.			
<i>PO Box:</i>					
<i>Address:</i>		RR4, CALGARY			
<i>City:</i>					
<i>Postal Code:</i>					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Province:					
Country:		--			
--					
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:		DRILLER REPORT FOR OLD WELL NOT HELD AT GIC, DRILLER REPORTS WATER IS MEDIUM HARD, WATER >15 GPM TOTAL AT 220-263'			
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			
First Name:		UNKNOWN			
Journeyman Number:		1			
--		--			
Drilling Company ID:		24464			
Company Name:		NORTHERN WATER SUPPLY CO.			
Street Address:					
City:					
Province:					
Country:					
Postal Code:					
Email:					
Starting Well ID:					
Ending Well ID:					
Last Well ID Used:					
--		--			
Date Received:		17-FEB-76			
Drilling Method:		Cable Tool			
Type Of Work:		Deepened			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Domestic			
Other Well Use:					
Total Depth Drilled(ft):		268			
Finished Well Depth(ft):					
Drilling Start Date:					
Drilling End Date:		09-OCT-75			
Casing Material:		Steel			
Casing Od(in):		5.56			
Casing Thickness(in):		0			
Casing Bottom(ft):		210			
Liner Material:		Steel			
Liner OD:		4.56			
Liner Thickness:		0			
Liner Top:		204			
Liner Bottom:		268			
Perforation By:		Torch			
Annular Seal Material:					
Annular Seal From(ft):		0			
Annular Seal To(ft):		0			
Annular Seal Amount:					
Annular Seal Units:					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:		Not Verified			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		0			
Recommended Intake Depth:		0			
--		--			
Perforation Information					
--		--			
From(ft):		230			
To(ft):		265			
Diameter(in):		0			
Interval(in):		0			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		268			
--		--			
Lithologies Information					
--		--			
Depth (ft):		245			
Water Bearing:		NO			
Colour:					
Description:		Soft			
Material:		Sandstone			
--		--			
Depth (ft):		254			
Water Bearing:		NO			
Colour:					
Description:		Hard			
Material:		Sandstone			
--		--			
Depth (ft):		257			
Water Bearing:		NO			
Colour:		Blue			
Description:					
Material:		Shale			
--		--			
Depth (ft):		268			
Water Bearing:		NO			
Colour:		Blue			
Description:					
Material:		Shale			
--		--			
Depth (ft):		220			
Water Bearing:		NO			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Colour:					
Description:					
Material:		Old Well			
--		--			
Depth (ft):		263			
Water Bearing:		NO			
Colour:					
Description:		Soft			
Material:		Sandstone			
--		--			
Depth (ft):		235			
Water Bearing:		NO			
Colour:					
Description:		Hard			
Material:		Sandstone			
--		--			
Pump Test					
--		--			
Test Date:		09-OCT-75			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		205			
End Water Level:					
Water Removal Type:		Bailer			
Water Removal Rate:					
Removal Depth From:		240			
Reason for Short Test:					
--		--			

2	3 of 3	-/0.0	1,234.4	AB	WWIS
Well ID:	402670			Elevation Source:	Not Obtained
DLS Coordinates:	SE-19-025-02-5			Lot:	
Elevation (ft):				Block:	
Licence NO:				Plan:	
Oil Present:					
Water Requirem Per Day:					
--- Details ---					
GIC Well ID:	402670				
Depth:	45				
Colour:	Yellow				
Description:					
Material:	Clay				
+					
GIC Well ID:	402670				
Depth:	145				
Colour:	Blue				
Description:					
Material:	Shale				
+					
GIC Well ID:	402670				
Depth:	254				
Colour:	Gray				
Description:					
Material:	Shale				
+					
GIC Well ID:	402670				
Depth:	7				
Colour:					
Description:					
Material:	Clay & Gravel				
+					
GIC Well ID:	402670				

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Depth:		88			
Colour:		Gray			
Description:					
Material:		Clay			
+					
GIC Well ID:		402670			
Depth:		130			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		402670			
Depth:		210			
Colour:		Gray			
Description:					
Material:		Sandstone			
+					
GIC Well ID:		402670			
Depth:		154			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		402670			
Depth:		200			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		402670			
Depth:		110			
Colour:		Blue			
Description:					
Material:		Shale			
Report Information					
--		--			
--		--			
Owner Information					
--		--			
Well Owner:		10687501			
Owner Name:		HAWKWOOD, TOM			
PO Box:		8			
Address:		SITE 16 SS1, CALGARY			
City:					
Postal Code:		T2M 4N3			
Province:					
Country:					
--		--			
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:					
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elevation (m)</i>	<i>Site</i>	<i>DB</i>
First Name:		UNKNOWN			
Journeyman Number:		1			
--		--			
Drilling Company ID:		24053			
Company Name:		LOU'S WATER WELL DRILLING			
Street Address:		BOX 1021			
City:		COCHRANE			
Province:		AB			
Country:		CA			
Postal Code:		T4C 1B1			
Email:		gwinfo@gov.ab.ca			
Starting Well ID:		1465000			
Ending Well ID:		1469999			
Last Well ID Used:		1465056			
--		--			
Date Received:		06-OCT-86			
Drilling Method:		Cable Tool			
Type Of Work:		New Well			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Stock			
Other Well Use:					
Total Depth Drilled(ft):		254			
Finished Well Depth(ft):					
Drilling Start Date:		21-AUG-86			
Drilling End Date:		01-SEP-86			
Casing Material:		Steel			
Casing Od(in):		5.56			
Casing Thickness(in):		.19			
Casing Bottom(ft):		89			
Liner Material:		Steel			
Liner OD:		4.5			
Liner Thickness:		0			
Liner Top:		80			
Liner Bottom:		254			
Perforation By:		Torch			
Annular Seal Material:		Driven			
Annular Seal From(ft):		0			
Annular Seal To(ft):		89			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:		Map			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		10			
Recommended Intake Depth:		0			
--		--			
Perforation Information					
--		--			
From(ft):		140			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
To(ft):		151			
Diameter(in):		.03			
Interval(in):		12			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		254			
--		--			
Lithologies Information					
--		--			
Depth (ft):		7			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Clay & Gravel			
--		--			
Depth (ft):		45			
Water Bearing:		NO			
Colour:		Yellow			
Description:					
Material:		Clay			
--		--			
Depth (ft):		110			
Water Bearing:		NO			
Colour:		Blue			
Description:					
Material:		Shale			
--		--			
Depth (ft):		130			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		145			
Water Bearing:		NO			
Colour:		Blue			
Description:					
Material:		Shale			
--		--			
Depth (ft):		200			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		210			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Sandstone			
--		--			
Depth (ft):		254			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Depth (ft):		88			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Clay			
--		--			
Depth (ft):		154			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Pump Test					
--		--			
Test Date:		01-SEP-86			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		200			
End Water Level:		225			
Water Removal Type:		Bailer			
Water Removal Rate:		10			
Removal Depth From:		254			
Reason for Short Test:		--			
--		--			

[3](#)

1 of 1

-/0.0

1,235.0

AB

WWIS

Well ID: 12019242
DLS Coordinates: SE-19-25-2-5
Elevation (ft):
Licence NO:
Oil Present:
Water Requirem Per Day:

Elevation Source: Not Obtained
Lot:
Block:
Plan:

--- Details ---
GIC Well ID: 2096305
Depth: 350
Colour:
Description:
Material: Old Well
Report Information
--
--
Owner Information
--
Well Owner: 12021086
Owner Name: HAWWOOD, THOMAS M.
PO Box:
Address: BOX 8, SITE 16, SS1
City: CALGARY
Postal Code: T2M 4N3
Province: ALBERTA
Country: CANADA
--
Pump Installed Depth:
Pump Type Installed:
Pump Model:
Pump Horsepower:
Well Disinfected: NO
Other Log:
Diverted Water Source:
Diverted Water Amount:
Diversion Date/Time:
Created By:

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
<hr/>					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:				ORIGINAL DRILLERS REPORT NOT IN GIC. THE FOLLOWING INFORMATION WAS TAKEN FROM DROUGHT EMERGENCY GROUNDWATER TESTING PROGRAM APPLICATION RECEIVED ON AUGUST 20, 1985. OWNER REPORTS YIELD OF THREE WELL(S) HAS DECREASED, NOW 0.5 GPM, WAS 2-2.5 GPM WHEN DRILLED, PROBLEM STARTED IN 1980. OWNER ALSO REPORTS THE 3 WELLS VARY IN DEPTH BETWEEN 350 TO 400 FEET AND WERE CONSTRUCTED IN 1946, 1957 & 1960.	
Model Output Rating:					
Driller ID:		11577398			
User ID:					
Last Name:		DRILLER11			
Middle Initial:					
First Name:		UNKNOWN			
Journeyman Number:		11			
--		--			
Drilling Company ID:		11577400			
Company Name:		UNKNOWNDRILLINGCOMP11			
Street Address:		UNKNOWN			
City:					
Province:					
Country:					
Postal Code:					
Email:		gwinfo@gov.ab.ca			
Starting Well ID:		2092500			
Ending Well ID:		2096999			
Last Well ID Used:		2096639			
--		--			
Date Received:		20-AUG-85			
Drilling Method:		Unknown			
Type Of Work:		Well Inventory			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Stock			
Other Well Use:					
Total Depth Drilled(ft):					
Finished Well Depth(ft):		350			
Drilling Start Date:					
Drilling End Date:		20-AUG-60			
Casing Material:					
Casing Od(in):					
Casing Thickness(in):					
Casing Bottom(ft):					
Liner Material:					
Liner OD:					
Liner Thickness:					
Liner Top:					
Liner Bottom:					
Perforation By:					
Annular Seal Material:					
Annular Seal From(ft):					
Annular Seal To(ft):					
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):					
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Distance Casing Ground: Artesian Flow Rate: Saline Water Depth: Gas Depth: Remedial Action: Flow Control Description: Recommended Rate: Recommended Intake Depth: -- Lithologies Information -- Depth (ft): 350 Water Bearing: NO Colour: Description: Material: Old Well --					
4	1 of 2	-/0.0	1,239.5	Municipal District of Rockyview No. 44 Municipal District of Rocky View No. 44 AB	WSTE
Certificate NO: 183596-01-00 Status: Operating Status Date: 4-Oct-02 Effective Date: 13-Oct-05 Expiry Date: Facility Name: Highway 1A to Bearspaw School Wastewater Pipeline Description: Municipal Wastewater System Operator: Municipal District of Rockyview No. 44 Mailing Address: 911 32 AVE NE, Calgary, AB T2E 6X6 Approval Type: Renewal DLS: N & SE 19-25-2-5 Lot: Block: Plan:					
4	2 of 2	-/0.0	1,239.5	Municipal District of Rocky View No. 44 Municipal District of Rocky View No. 44 AB	WSTE
Certificate NO: 183596-00-00 Status: Operating Status Date: 4-Oct-02 Effective Date: 8-Jul-02 Expiry Date: 1-Jul-12 Facility Name: HIGHWAY 1A TO BEARSPAW SCHOOL WASTEWATER PIPELINE Description: Municipal Wastewater System Operator: MUNICIPAL DISTRICT OF ROCKY VIEW NO. 44 Mailing Address: 911 32 AVE NE, Calgary, AB T2E 6X6 Approval Type: Initial DLS: N & SE 19-25-2-5 Lot: Block: Plan:					
5	1 of 1	-/0.0	1,227.1	AB	WWIS
Well ID: 402669 DLS Coordinates: 01-19-025-02-5 Elevation (ft): Licence NO: Oil Present: Water Requirem Per Day: Elevation Source: Not Obtained Lot: Block: 8 Plan:					
--- Details --- GIC Well ID: 402669 Depth: 1 Colour: Description: Material: Topsoil					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
+					
GIC Well ID:		402669			
Depth:		200			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		402669			
Depth:		127			
Colour:					
Description:					
Material:		Till & Rocks			
+					
GIC Well ID:		402669			
Depth:		131			
Colour:					
Description:					
Material:		Gravel			
+					
GIC Well ID:		402669			
Depth:		140			
Colour:		Brown			
Description:					
Material:		Sandstone			
+					
GIC Well ID:		402669			
Depth:		160			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		402669			
Depth:		180			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		402669			
Depth:		136			
Colour:		Brown			
Description:					
Material:		Shale			
+					
GIC Well ID:		402669			
Depth:		190			
Colour:		Gray			
Description:					
Material:		Sandstone			
+					
GIC Well ID:		402669			
Depth:		50			
Colour:		Brown			
Description:		Sandy			
Material:		Clay			
+					
GIC Well ID:		402669			
Depth:		163			
Colour:		Gray			
Description:					
Material:		Sandstone			
Report Information					
--		--			
--		--			
Owner Information					
--		--			
Well Owner:		10687500			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Owner Name:		FRASER, GORDON			
PO Box:					
Address:					
City:					
Postal Code:					
Province:					
Country:					
--		--			
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:		WATER 1 GPM AT 140', 5 GPM AT 160', 13 GPM AT 190'			
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			
First Name:		UNKNOWN			
Journeyman Number:		1			
--		--			
Drilling Company ID:		24119			
Company Name:		DIVERSIFIED DRILLING & EXPLORATION CO.			
Street Address:					
City:					
Province:					
Country:					
Postal Code:					
Email:					
Starting Well ID:					
Ending Well ID:					
Last Well ID Used:					
--		--			
Date Received:		31-AUG-83			
Drilling Method:		Cable Tool			
Type Of Work:		New Well			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Domestic			
Other Well Use:					
Total Depth Drilled(ft):		200			
Finished Well Depth(ft):					
Drilling Start Date:		20-APR-83			
Drilling End Date:		04-MAY-83			
Casing Material:		Steel			
Casing Od(in):		5.56			
Casing Thickness(in):		.24			
Casing Bottom(ft):		132			
Liner Material:		Steel			
Liner OD:		4.56			
Liner Thickness:		.13			
Liner Top:		0			
Liner Bottom:		200			
Perforation By:		Torch			
Annular Seal Material:		Driven			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Annular Seal From(ft):		130			
Annular Seal To(ft):		132			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:		Not Verified			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		0			
Recommended Intake Depth:		0			
--		--			
Perforation Information					
--		--			
From(ft):		140			
To(ft):		195			
Diameter(in):		.16			
Interval(in):		10			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		200			
--		--			
Lithologies Information					
--		--			
Depth (ft):		50			
Water Bearing:		NO			
Colour:		Brown			
Description:		Sandy			
Material:		Clay			
--		--			
Depth (ft):		127			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Till & Rocks			
--		--			
Depth (ft):		131			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Gravel			
--		--			
Depth (ft):		136			
Water Bearing:		NO			
Colour:		Brown			
Description:					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Material:		Shale			
--		--			
Depth (ft):		160			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		163			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Sandstone			
--		--			
Depth (ft):		180			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		190			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Sandstone			
--		--			
Depth (ft):		1			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Topsoil			
--		--			
Depth (ft):		200			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		140			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Sandstone			
--		--			
Pump Test					
--		--			
Test Date:		04-MAY-83			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		130			
End Water Level:		145			
Water Removal Type:		Bailer			
Water Removal Rate:		13			
Removal Depth From:		145			
Reason for Short Test:					
--		--			

6	1 of 2	WNW/62.3	1,223.8	May-Ruben Thermal Solutions Inc. 253147 Bearspaw RD NW Calgary AB T3L 2P5 AB	GEN
Approval No:				DLS:	
Record ID:				Phone:	403-244-0444
Approval Year:	Feb 2015			Contact:	Stan Martin

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
6	2 of 2	WNW/62.3	1,223.8	May-Ruben Thermal Solutions Inc. 253147 Bearspaw RD NW Calgary AB T3L 2P5 AB	GEN
Approval No:				DLS:	
Record ID:				Phone:	403-244-0444
Approval Year:				Jan 2016	Contact: Stan Martin
7	1 of 1	SE/90.8	1,202.1	Westfour Oil & Gas Ltd. 83 Bluebridge Rise Calgary AB T3L 2N6	SCT
Established:					
Plant Size (ft²):					
Employment:					
--- Details ---					
Description:		Conventional Oil and Gas Extraction			
SIC/NAICS Code:		211113			
8	1 of 1	SW/218.6	1,180.8	AB	WWIS
Well ID:		402663	Elevation Source:		Estimated
DLS Coordinates:		13-18-025-02-5	Lot:		
Elevation (ft):		3875	Block:		
Licence NO:		Plan:			
Oil Present:					
Water Requirem Per Day:					
--- Details ---					
GIC Well ID:		402663			
Depth:		221			
Colour:					
Description:					
Material:		Shale			
+					
GIC Well ID:		402663			
Depth:		300			
Colour:					
Description:					
Material:		Shale			
+					
GIC Well ID:		402663			
Depth:		152			
Colour:					
Description:		Shattered			
Material:		Shale			
+					
GIC Well ID:		402663			
Depth:		203			
Colour:					
Description:					
Material:		Shale			
+					
GIC Well ID:		402663			
Depth:		208			
Colour:					
Description:		Water Bearing			
Material:		Sandstone			
+					
GIC Well ID:		402663			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Depth:		140			
Colour:					
Description:					
Material:		Shale			
+					
GIC Well ID:		402663			
Depth:		142			
Colour:					
Description:					
Material:		Sandstone			
+					
GIC Well ID:		402663			
Depth:		198			
Colour:					
Description:		Water Bearing			
Material:		Sandstone			
+					
GIC Well ID:		402663			
Depth:		265			
Colour:					
Description:					
Material:		Shale & Sandstone Ledges			
+					
GIC Well ID:		402663			
Depth:		135			
Colour:					
Description:					
Material:		Old Well			
+					
GIC Well ID:		402663			
Depth:		194			
Colour:					
Description:					
Material:		Shale			
+					
GIC Well ID:		402663			
Depth:		190			
Colour:					
Description:					
Material:		Sandstone			
Chemical Analysis Information					
--		--			
Sample Number:		8605			
Sample Date:		01-AUG-80			
Analysis Date:		09-SEP-80			
Laboratory:		AE			
Water Level:					
Aquifer:					
Remarks:					
--		--			
Analysis Items Information					
--		--			
Element Name:		pH			
Element Symbol:		PH			
Decimal Places:		2			
Value:		8.4			
--		--			
Element Name:		Ion Balance			
Element Symbol:		IONBAL			
Decimal Places:		4			
Value:		.96			
--		--			
Element Name:		Sodium			
Element Symbol:		NA			
Decimal Places:		4			
Value:		80			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elevation (m)</i>	<i>Site</i>	<i>DB</i>
--		--			
<i>Element Name:</i>		Calcium			
<i>Element Symbol:</i>		CA			
<i>Decimal Places:</i>		4			
<i>Value:</i>		28			
--		--			
<i>Element Name:</i>		Potassium			
<i>Element Symbol:</i>		K			
<i>Decimal Places:</i>		4			
<i>Value:</i>		6.34			
--		--			
<i>Element Name:</i>		Fluoride			
<i>Element Symbol:</i>		F			
<i>Decimal Places:</i>		4			
<i>Value:</i>		.08			
--		--			
<i>Element Name:</i>		Electrical Conductivity			
<i>Element Symbol:</i>		EC			
<i>Decimal Places:</i>		0			
<i>Value:</i>		942			
--		--			
<i>Element Name:</i>		Nitrite			
<i>Element Symbol:</i>		NO2			
<i>Decimal Places:</i>		4			
<i>Value:</i>		-.05			
--		--			
<i>Element Name:</i>		Hydroxide			
<i>Element Symbol:</i>		OH			
<i>Decimal Places:</i>		4			
<i>Value:</i>		0			
--		--			
<i>Element Name:</i>		Total Hardness			
<i>Element Symbol:</i>		TH			
<i>Decimal Places:</i>		4			
<i>Value:</i>		332			
--		--			
<i>Element Name:</i>		Carbonate			
<i>Element Symbol:</i>		CO3			
<i>Decimal Places:</i>		4			
<i>Value:</i>		-5			
--		--			
<i>Element Name:</i>		Total Alkalinity			
<i>Element Symbol:</i>		TA			
<i>Decimal Places:</i>		4			
<i>Value:</i>		196			
--		--			
<i>Element Name:</i>		Silica			
<i>Element Symbol:</i>		SiO2			
<i>Decimal Places:</i>		4			
<i>Value:</i>		8.9			
--		--			
<i>Element Name:</i>		Total Dissolved Solids			
<i>Element Symbol:</i>		TDS			
<i>Decimal Places:</i>		0			
<i>Value:</i>		615			
--		--			
<i>Element Name:</i>		Nitrate plus Nitrite			
<i>Element Symbol:</i>		NO2_NO3_N			
<i>Decimal Places:</i>		4			
<i>Value:</i>		-.05			
--		--			
<i>Element Name:</i>		Iron			
<i>Element Symbol:</i>		FE			
<i>Decimal Places:</i>		4			
<i>Value:</i>		.06			
--		--			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elevation (m)</i>	<i>Site</i>	<i>DB</i>
Element Name:		Bicarbonate			
Element Symbol:		HCO3			
Decimal Places:		4			
Value:		233.02			
--		--			
Element Name:		Total Phosphorus			
Element Symbol:		TP			
Decimal Places:		4			
Value:		0			
--		--			
Element Name:		Magnesium			
Element Symbol:		MG			
Decimal Places:		4			
Value:		63.05			
--		--			
Element Name:		Chloride			
Element Symbol:		CL			
Decimal Places:		4			
Value:		2			
--		--			
Element Name:		Sulphate			
Element Symbol:		SO4			
Decimal Places:		4			
Value:		318.47			
--		--			
Element Name:		total Kjeldahl nitrogen			
Element Symbol:		TKN			
Decimal Places:		4			
Value:		0			
--		--			
Report Information		--			
--		--			
--		--			
Owner Information		--			
--		--			
Well Owner:		10687494			
Owner Name:		BLUE RIDGE EST			
PO Box:					
Address:		CALGARY			
City:					
Postal Code:					
Province:					
Country:					
--		--			
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:		ORIGINALLY DRILLED ALSO BY M&M DRILLING 82/01/26, TOP CASING DETAILS NOT REPORTED, ORIGINAL LINER PERFORATED FROM 110-152' WAS REPLACED WITH NEW LINER, ONE CHEMISTRY ON FILE TAKEN AFTER DEEPENING			
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			
First Name:		UNKNOWN			
Journeyman Number:		1			

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elevation (m)</i>	<i>Site</i>	<i>DB</i>
--	--	--	--	--	--
Drilling Company ID:		24227			
Company Name:		M&M DRILLING CO. LTD.			
Street Address:		BOX 1, SITE 22, RR 2			
City:		STRATHMORE			
Province:		AB			
Country:		CA			
Postal Code:		T1P 1K5			
Email:		murraywh@mmdrilling.ca			
Starting Well ID:		1475000			
Ending Well ID:		1479999			
Last Well ID Used:		1476808			
--	--	--	--	--	--
Date Received:		24-SEP-82			
Drilling Method:		Rotary			
Type Of Work:		Deepened			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Domestic			
Other Well Use:					
Total Depth Drilled(ft):		300			
Finished Well Depth(ft):					
Drilling Start Date:		25-JAN-82			
Drilling End Date:		15-SEP-82			
Casing Material:		Unknown			
Casing Od(in):		0			
Casing Thickness(in):		0			
Casing Bottom(ft):		0			
Liner Material:		Steel			
Liner OD:		4.56			
Liner Thickness:		.16			
Liner Top:		70			
Liner Bottom:		300			
Perforation By:		Torch			
Annular Seal Material:		Unknown			
Annular Seal From(ft):		0			
Annular Seal To(ft):		0			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:		Map			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		10			
Recommended Intake Depth:		200			
--	--	--	--	--	--
Perforation Information					
--	--	--	--	--	--
From(ft):		111			
To(ft):		132			
Diameter(in):		0			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Interval(in):		0			
--		--			
From(ft):		280			
To(ft):		300			
Diameter(in):		0			
Interval(in):		0			
--		--			
From(ft):		195			
To(ft):		216			
Diameter(in):		0			
Interval(in):		0			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		300			
--		--			
Lithologies Information					
--		--			
Depth (ft):		140			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Shale			
--		--			
Depth (ft):		142			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Sandstone			
--		--			
Depth (ft):		152			
Water Bearing:		NO			
Colour:					
Description:		Shattered			
Material:		Shale			
--		--			
Depth (ft):		190			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Sandstone			
--		--			
Depth (ft):		194			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Shale			
--		--			
Depth (ft):		198			
Water Bearing:		YES			
Colour:					
Description:		Water Bearing			
Material:		Sandstone			
--		--			
Depth (ft):		203			
Water Bearing:		NO			
Colour:					
Description:					

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Material:		Shale			
--		--			
Depth (ft):		208			
Water Bearing:		YES			
Colour:					
Description:		Water Bearing			
Material:		Sandstone			
--		--			
Depth (ft):		265			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Shale & Sandstone Ledges			
--		--			
Depth (ft):		135			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Old Well			
--		--			
Depth (ft):		300			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Shale			
--		--			
Depth (ft):		221			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Shale			
--		--			
Pump Test					
--		--			
Test Date:		15-SEP-82			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		130			
End Water Level:		170			
Water Removal Type:		Bailer			
Water Removal Rate:		10			
Removal Depth From:		170			
Reason for Short Test:					
--		--			

<u>9</u>	1 of 2	W/219.5	1,206.9	AB	WWIS
Well ID:	389381			Elevation Source:	Estimated
DLS Coordinates:	08-24-025-03-5			Lot:	
Elevation (ft):	3750			Block:	
Licence NO:				Plan:	
Oil Present:					
Water Requirem Per Day:					
--- Details ---					
GIC Well ID:	389381				
Depth:	54				
Colour:	Brown				
Description:					
Material:	Shale				
+					
GIC Well ID:	389381				
Depth:	124				
Colour:	Dark Gray				

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Description:					
Material:		Shale			
+					
GIC Well ID:		389381			
Depth:		182			
Colour:		Brown			
Description:					
Material:		Shale			
+					
GIC Well ID:		389381			
Depth:		2			
Colour:					
Description:					
Material:		Topsoil			
+					
GIC Well ID:		389381			
Depth:		21			
Colour:		Brown			
Description:					
Material:		Clay & Boulders			
+					
GIC Well ID:		389381			
Depth:		153			
Colour:		Brown			
Description:					
Material:		Shale			
+					
GIC Well ID:		389381			
Depth:		220			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		389381			
Depth:		93			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		389381			
Depth:		38			
Colour:		Gray			
Description:					
Material:		Clay & Boulders			
+					
GIC Well ID:		389381			
Depth:		212			
Colour:					
Description:					
Material:		Water Bearing Sandstone			
+					
GIC Well ID:		389381			
Depth:		78			
Colour:		Brown			
Description:					
Material:		Sandstone			
+					
GIC Well ID:		389381			
Depth:		202			
Colour:		Dark Gray			
Description:					
Material:		Shale			
Report Information					
--		--			
--		--			
Owner Information					

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elevation (m)</i>	<i>Site</i>	<i>DB</i>
--		--			
Well Owner:		10661743			
Owner Name:		ALBERTA LIVESTOCK TRANSPORT			
PO Box:					
Address:		RR4, CALGARY			
City:					
Postal Code:					
Province:					
Country:					
--		--			
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:					
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			
First Name:		UNKNOWN			
Journeyman Number:		1			
--		--			
Drilling Company ID:		24084			
Company Name:		INTERPROVINCIAL DRILLING CONTRACTORS			
Street Address:		SUB PO 36			
City:		CALGARY			
Province:		AB			
Country:		CA			
Postal Code:					
Email:		GWINFO@GOV.AB.CA			
Starting Well ID:		1893200			
Ending Well ID:		1893299			
Last Well ID Used:		1893200			
--		--			
Date Received:					
Drilling Method:		Cable Tool			
Type Of Work:		New Well			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Stock			
Other Well Use:					
Total Depth Drilled(ft):		220			
Finished Well Depth(ft):					
Drilling Start Date:					
Drilling End Date:		05-JUN-78			
Casing Material:		Steel			
Casing Od(in):		6.63			
Casing Thickness(in):		.19			
Casing Bottom(ft):		40			
Liner Material:		Steel			
Liner OD:		5			
Liner Thickness:		0			
Liner Top:		0			
Liner Bottom:		220			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Perforation By:		Torch			
Annular Seal Material:		Driven			
Annular Seal From(ft):		0			
Annular Seal To(ft):		40			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:		Not Verified			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		0			
Recommended Intake Depth:		210			
--		--			
Perforation Information					
--		--			
From(ft):		195			
To(ft):		215			
Diameter(in):		.13			
Interval(in):		12			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		220			
--		--			
Lithologies Information					
--		--			
Depth (ft):		2			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Topsoil			
--		--			
Depth (ft):		21			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Clay & Boulders			
--		--			
Depth (ft):		54			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Shale			
--		--			
Depth (ft):		124			
Water Bearing:		NO			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Colour:		Dark Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		153			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Shale			
--		--			
Depth (ft):		182			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Shale			
--		--			
Depth (ft):		202			
Water Bearing:		NO			
Colour:		Dark Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		212			
Water Bearing:		YES			
Colour:					
Description:		Water Bearing			
Material:		Sandstone			
--		--			
Depth (ft):		220			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		38			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Clay & Boulders			
--		--			
Depth (ft):		93			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		78			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Sandstone			
--		--			
Pump Test					
--		--			
Test Date:		05-JUN-78			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		180			
End Water Level:					
Water Removal Type:		Bailer			
Water Removal Rate:		15			
Removal Depth From:		0			
Reason for Short Test:					
--		--			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
9	2 of 2	W/219.5	1,206.9	AB	WWIS
Well ID:		392095	Elevation Source:		Not Obtained
DLS Coordinates:		08-24-025-03-5	Lot:		
Elevation (ft):			Block:		
Licence NO:			Plan:		
Oil Present:					
Water Requirem Per Day:					
--- Details ---					
GIC Well ID:		392095			
Depth:		200			
Colour:		Gray			
Description:		Hard			
Material:		Shale			
+					
GIC Well ID:		392095			
Depth:		91			
Colour:		Brown			
Description:		Water Bearing			
Material:		Sandstone			
+					
GIC Well ID:		392095			
Depth:		156			
Colour:					
Description:		Water Bearing			
Material:		Sandstone			
+					
GIC Well ID:		392095			
Depth:		74			
Colour:		Gray			
Description:					
Material:		Till & Rocks			
+					
GIC Well ID:		392095			
Depth:		100			
Colour:		Gray			
Description:					
Material:		Shale			
+					
GIC Well ID:		392095			
Depth:		116			
Colour:		Gray			
Description:		Hard			
Material:		Shale			
+					
GIC Well ID:		392095			
Depth:		18			
Colour:		Brown			
Description:		Unreadable			
Material:		Till			
+					
GIC Well ID:		392095			
Depth:		84			
Colour:		Brown			
Description:					
Material:		Shale			
+					
GIC Well ID:		392095			
Depth:		2			
Colour:					
Description:					
Material:		Topsoil			
+					
GIC Well ID:		392095			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Depth:		136			
Colour:		Brown			
Description:					
Material:		Shale			
Report Information					
--		--			
--		--			
Owner Information					
--		--			
Well Owner:		10664453			
Owner Name:		ALTA LIVESTOCK TRANSPORT			
PO Box:					
Address:		RR4, CALGARY			
City:					
Postal Code:					
Province:					
Country:					
--		--			
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:		WELL ORIGINALLY 100'. LONGER LINER INSTALLED WHEN WELL WAS DEEPENED.			
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			
First Name:		UNKNOWN			
Journeyman Number:		1			
--		--			
Drilling Company ID:		24084			
Company Name:		INTERPROVINCIAL DRILLING CONTRACTORS			
Street Address:		SUB PO 36			
City:		CALGARY			
Province:		AB			
Country:		CA			
Postal Code:					
Email:		GWINFO@GOV.AB.CA			
Starting Well ID:		1893200			
Ending Well ID:		1893299			
Last Well ID Used:		1893200			
--		--			
Date Received:					
Drilling Method:		Cable Tool			
Type Of Work:		Deepened			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Domestic & Stock			
Other Well Use:					
Total Depth Drilled(ft):		200			
Finished Well Depth(ft):					
Drilling Start Date:		18-JUN-75			
Drilling End Date:		26-MAY-78			
Casing Material:		Steel			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Casing Od(in):		6			
Casing Thickness(in):		.28			
Casing Bottom(ft):		80			
Liner Material:		Steel			
Liner OD:		5			
Liner Thickness:		0			
Liner Top:		0			
Liner Bottom:		200			
Perforation By:		Torch			
Annular Seal Material:		Driven			
Annular Seal From(ft):		0			
Annular Seal To(ft):		80			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:		Not Verified			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		0			
Recommended Intake Depth:		0			
--		--			
Perforation Information					
--		--			
From(ft):		125			
To(ft):		165			
Diameter(in):		0			
Interval(in):		0			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		200			
--		--			
Lithologies Information					
--		--			
Depth (ft):		2			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Topsoil			
--		--			
Depth (ft):		18			
Water Bearing:		NO			
Colour:		Brown			
Description:		Unreadable			
Material:		Till			
--		--			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Depth (ft):		74			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Till & Rocks			
--		--			
Depth (ft):		91			
Water Bearing:		YES			
Colour:		Brown			
Description:		Water Bearing			
Material:		Sandstone			
--		--			
Depth (ft):		100			
Water Bearing:		NO			
Colour:		Gray			
Description:					
Material:		Shale			
--		--			
Depth (ft):		116			
Water Bearing:		NO			
Colour:		Gray			
Description:		Hard			
Material:		Shale			
--		--			
Depth (ft):		136			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Shale			
--		--			
Depth (ft):		200			
Water Bearing:		NO			
Colour:		Gray			
Description:		Hard			
Material:		Shale			
--		--			
Depth (ft):		84			
Water Bearing:		NO			
Colour:		Brown			
Description:					
Material:		Shale			
--		--			
Depth (ft):		156			
Water Bearing:		YES			
Colour:					
Description:		Water Bearing			
Material:		Sandstone			
--		--			
Pump Test					
--		--			
Test Date:		26-MAY-78			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		60			
End Water Level:					
Water Removal Type:		Bailer			
Water Removal Rate:		6			
Removal Depth From:		0			
Reason for Short Test:					
--		--			
Test Date:		18-JUN-75			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		75			
End Water Level:					
Water Removal Type:		Bailer			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Water Removal Rate:		15			
Removal Depth From:		80			
Reason for Short Test:		--			
--		--			

10	1 of 1	SSE/220.2	1,196.0	AB	WWIS
Well ID:	402666			Elevation Source:	Estimated
DLS Coordinates:	15-18-025-02-5			Lot:	
Elevation (ft):	3930			Block:	
Licence NO:				Plan:	
Oil Present:					
Water Requirem Per Day:					
--- Details ---					
GIC Well ID:	402666				
Depth:	28				
Colour:	Yellow				
Description:					
Material:	Clay & Boulders				
+					
GIC Well ID:	402666				
Depth:	78				
Colour:	Blue				
Description:					
Material:	Clay & Boulders				
+					
GIC Well ID:	402666				
Depth:	125				
Colour:	Blue				
Description:					
Material:	Shale				
+					
GIC Well ID:	402666				
Depth:	135				
Colour:	Blue				
Description:					
Material:	Shale				
+					
GIC Well ID:	402666				
Depth:	130				
Colour:	Gray				
Description:	Fractured				
Material:	Sandstone				
+					
GIC Well ID:	402666				
Depth:	1				
Colour:					
Description:					
Material:	Topsoil				
+					
GIC Well ID:	402666				
Depth:	92				
Colour:	Yellow				
Description:					
Material:	Shale				
+					
GIC Well ID:	402666				
Depth:	84				
Colour:	Yellow				
Description:					
Material:	Sandstone				
+					
GIC Well ID:	402666				

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Depth:		110			
Colour:		Yellow			
Description:					
Material:		Sandstone			
Report Information					
--		--			
--		--			
Owner Information					
--		--			
Well Owner:		10687497			
Owner Name:		BLUE MOUNTAIN FARMS LTD			
PO Box:					
Address:		RR4, CALGARY			
City:					
Postal Code:					
Province:					
Country:					
--		--			
Pump Installed Depth:					
Pump Type Installed:					
Pump Model:					
Pump Horsepower:					
Well Disinfected:		NO			
Other Log:					
Diverted Water Source:					
Diverted Water Amount:					
Diversion Date/Time:					
Created By:					
Submitted By:					
Approv Holder Sign Date:					
Additional Comments:		DRILLER REPORTS WATER IS MEDIUM HARD, WATER 25 GPM AT 125-130'			
Model Output Rating:					
Driller ID:		2533726			
User ID:					
Last Name:		DRILLER			
Middle Initial:		NA			
First Name:		UNKNOWN			
Journeyman Number:		1			
--		--			
Drilling Company ID:		24464			
Company Name:		NORTHERN WATER SUPPLY CO.			
Street Address:					
City:					
Province:					
Country:					
Postal Code:					
Email:					
Starting Well ID:					
Ending Well ID:					
Last Well ID Used:					
--		--			
Date Received:		22-MAR-79			
Drilling Method:		Cable Tool			
Type Of Work:		New Well			
Plug Date:					
Plug Material Type:					
Plug Material Amount:					
Plugged Units:					
Exisiting Well ID:					
Well Use:		Domestic			
Other Well Use:					
Total Depth Drilled(ft):		135			
Finished Well Depth(ft):					
Drilling Start Date:					
Drilling End Date:		04-OCT-78			
Casing Material:		Steel			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Casing Od(in):		5.56			
Casing Thickness(in):		.19			
Casing Bottom(ft):		83			
Liner Material:		Steel			
Liner OD:		4.56			
Liner Thickness:		0			
Liner Top:		78			
Liner Bottom:		135			
Perforation By:		Torch			
Annular Seal Material:		Driven			
Annular Seal From(ft):		0			
Annular Seal To(ft):		83			
Annular Seal Amount:					
Annular Seal Units:					
Screen Material:					
Screen Size Od(in):		0			
Screen Attachment:					
Screen Top Fittings:					
Screen Bottom Fittings:					
Pack Type:					
Pack Grain Size:					
Pack Amount:					
Pack Units:					
Loc Verification Method:		Not Verified			
Distance Casing Ground:					
Artesian Flow Rate:					
Saline Water Depth:					
Gas Depth:					
Remedial Action:					
Flow Control Description:					
Recommended Rate:		0			
Recommended Intake Depth:		0			
--		--			
Perforation Information					
--		--			
From(ft):		120			
To(ft):		131			
Diameter(in):		.19			
Interval(in):		10			
--		--			
Geophysical Logs Information					
--		--			
Log Type:		Electric			
--		--			
Log Type:		Gamma			
--		--			
Boreholes Information					
--		--			
Diameter(in):		0			
From(ft):		0			
To(ft):		135			
--		--			
Lithologies Information					
--		--			
Depth (ft):		1			
Water Bearing:		NO			
Colour:					
Description:					
Material:		Topsoil			
--		--			
Depth (ft):		28			
Water Bearing:		NO			
Colour:		Yellow			
Description:					
Material:		Clay & Boulders			
--		--			

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
Depth (ft):		78			
Water Bearing:		NO			
Colour:		Blue			
Description:					
Material:		Clay & Boulders			
--		--			
Depth (ft):		84			
Water Bearing:		NO			
Colour:		Yellow			
Description:					
Material:		Sandstone			
--		--			
Depth (ft):		92			
Water Bearing:		NO			
Colour:		Yellow			
Description:					
Material:		Shale			
--		--			
Depth (ft):		110			
Water Bearing:		NO			
Colour:		Yellow			
Description:					
Material:		Sandstone			
--		--			
Depth (ft):		125			
Water Bearing:		NO			
Colour:		Blue			
Description:					
Material:		Shale			
--		--			
Depth (ft):		135			
Water Bearing:		NO			
Colour:		Blue			
Description:					
Material:		Shale			
--		--			
Depth (ft):		130			
Water Bearing:		NO			
Colour:		Gray			
Description:		Fractured			
Material:		Sandstone			
--		--			
Pump Test					
--		--			
Test Date:		14-OCT-78			
Start Time:		12-JAN-00			
Taken From Top Of Casing:		NO			
Static Water Level(ft):		99			
End Water Level:		112			
Water Removal Type:		Bailer			
Water Removal Rate:		25			
Removal Depth From:		112			
Reason for Short Test:					
--		--			

Unplottable Summary

Total: 3 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
FST	BEARSPAW GAS	HWY 1A WEST	ROCKY VIEW COUNTY (P) AB	
FST	BEARSPAW GAS	HWY 1A WEST	ROCKY VIEW COUNTY (P) AB	
GEN	ENMAX CORP	SOUTHBOUND CROWCHILD TRAIL	CALGARY AB	

Unplottable Report

Site: BEARSPAW GAS
HWY 1A WEST ROCKY VIEW COUNTY (P) AB

Database:
FST

Site NO: 4638
Tank NO:
Date Removed:
Removal Reason:
Located 200m:
Located 500m:
DLS Coord: SW-30- 25- 2-5
Lot: 2
Block:
Plan: 6009GM
Facility 2:
Facility 3:
Facility 4:
Municipality: ROCKY VIEW COUNTY (P)
Spill Containment:

Dt Form Rcvd:
No of Tanks:
Tank Type:
Tank Status:
Date Last Used:
Contents:
Other Contents:
Capacity:
Other Capacity:
UST Secondary:
AST Secondary:
Overfill Prevention:
Facility 1:

Site: BEARSPAW GAS
HWY 1A WEST ROCKY VIEW COUNTY (P) AB

Database:
FST

Site NO: 6354
Tank NO:
Date Removed:
Removal Reason:
Located 200m:
Located 500m:
DLS Coord: SW-30-25-2-5
Lot: 2
Block:
Plan: 6009GM
Facility 2:
Facility 3:
Facility 4:
Municipality: ROCKY VIEW COUNTY (P)
Spill Containment:

Dt Form Rcvd:
No of Tanks:
Tank Type:
Tank Status:
Date Last Used:
Contents:
Other Contents:
Capacity:
Other Capacity:
UST Secondary:
AST Secondary:
Overfill Prevention:
Facility 1:

Site: ENMAX CORP
SOUTHBOUND CROWCHILD TRAIL CALGARY AB

Database:
GEN

Approval No:
Record ID: 485
Approval Year: 2002

DLS:
Phone:
Contact:

--- Details ---

Material Code: 9.10
Material Description: Unclassified Dangerous Substance/Product

Appendix: Database Descriptions

*Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Agriculture and Fisheries - Certificates of Approval:

Provincial [AGR](#)

This database contains approvals for processes pertaining to drying of alfalfa/forage/peat, feedlots, fish farms and feed/seed mills. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Alberta Oil and Gas Wells:

Provincial [AOGW](#)

The Alberta Energy Utilities Board - now the Alberta Energy Regulator (AER) - maintained a database of oil and gas wells drilled in the province of Alberta. The database contains information on well name, licensee name, license number, location, status, total well depth and date of final drilling. Please note that this database will not be updated, information on wells drilled after September 2003 can be found in the Oil and Gas Wells (OGW) database under the 'Private Source Database' section.

Government Publication Date: 1883-Sept 2003*

Automobile Wrecking & Supplies:

Private [AUWR](#)

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: Oct 31, 2015

Waste Management Facilities - Certificates of Approval:

Provincial [CAWD](#)

This database contains approvals for processes pertaining to waste management facilities (hazardous waste manifesting, waste disposal/incineration/open burning/processing/storage/treatment). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2015

Confined Feeding Operations:

Provincial [CFO](#)

In 1991, the Natural Resources Conservation Board (NRCB) was created to review applications for approval of major natural resource development projects in Alberta. In January 2002, the NRCB was given the responsibility to regulate the Confined Feeding Operation industry. The Agricultural Operation Practices Act defines a confined feeding operation to be: "an activity on land that is fenced or enclosed or within buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing, but does not include seasonal feeding and bedding sites." Under the AOPA regulations, all new or expanding confined feeding operations (CFOs) or manure storage facilities are required to make an application for Approval, Registration or Authorization to the NRCB before construction or expansion commences. Geographic coordinates were provided in DLS (Dominion Land Survey) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the Quarter section only.

Government Publication Date: 2002-Jun 2013

Chemical Processing Operations - Certificates of Approval:

Provincial [CHEM](#)

This database contains approvals for processes pertaining to the manufacturing and use of chemical products and pesticides. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Compliance and Convictions:

Provincial [CONV](#)

This database summarizes the penalties and convictions handed down by the Alberta courts. This database identifies companies and/or individuals that have been found guilty of environmental offenses under Alberta's Environmental Protection Legislation. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Unfortunately, from state of the data, the location that the address pertains to cannot be confirmed.

Government Publication Date: 1993-Sep 2015

Enforcement Action Summary:Provincial [EAS](#)

This database maintained by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB) - summarizes high risk enforcement action 1, high risk enforcement action 2 (persistent noncompliance), high risk enforcement action 3 (failure to comply or demonstrated disregard), low risk enforcement action - global REFER and legislative/regulatory enforcement action. Fields will include licensee/company name, non-compliance event, date of enforcement, location, etc.

Government Publication Date: Oct 31, 2016

Environmental Effects Monitoring:Federal [EEM](#)

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches:Private [EHS](#)

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Aug 2016

Environmental Issues Inventory System:Federal [EIIS](#)

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Alberta Environment & Parks Storage Tanks:Provincial [EP TANKS](#)

List of storage tanks under the purview of Alberta Environment and Parks.

Government Publication Date: Jul 31, 2016

Environmental Site Assessment Repository:Provincial [ESAR](#)

Environmental site assessments determine the quality of soil and groundwater of a site, particularly at retail gas stations and other commercial and industrial sites. A site assessment does not necessarily mean a site is, or ever was, contaminated. Alberta's Environmental Site Assessment Repository (ESAR) is an online, searchable database that provides scientific and technical information about assessed and/or reclaimed sites throughout Alberta. Search Alberta's ESAR using meridian, range, township, and section values at <http://www.esar.alberta.ca/esarmain.aspx> to gain access to reclamation certificates and/or associated files (applications, reports).

Government Publication Date: Aug 11, 2016

Facility List:Provincial [FAC](#)

This database contains a complete list of new, active and suspended facilities in Alberta including batteries, gas plants, meter stations, and other facilities. Information provided includes: facility id, facility name, operator name, sub type description, location, facility license no, and operational status; now includes EDCT (Energy Development Category Type) type and description. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

Government Publication Date: Up to Jul 2016

Federal Convictions:Federal [FCON](#)

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land:Federal [FCS](#)

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: June 2000-Oct 2015

Field Inspection Incident Report:Provincial **FIS**

Received from the Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) and EUB (Energy Utilities Board) - this database, which used to be called EISL (Environmental Information System Listing), contains reported environmental incidents beginning in 1975. Descriptions include noise infractions, air quality emissions, oil spills and failures for pipelines, wells, plants, and batteries. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1975-Sep 2016**Food Processing Operations - Certificates of Approval:**Provincial **FOOD**

This database contains approvals for processes pertaining to the manufacturing of food products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012**PTMAA Fuel Storage Tanks:**Provincial **FST**

Information in this database was collected according to Alberta Regulation AR 291/95 Storage Tank System Management and to AR 52/98 Fire Code which was formerly The Alberta Fire Code Regulation, 1992 (AR 204/92). This information was received from the Petroleum Tank Management Association of Alberta (PTMAA) which has regulated Storage Tanks since 1994.

Government Publication Date: 1985-Sep 2016**Waste Generators Summary:**Provincial **GEN**

Under Alberta's Waste Control Regulation, Alta. Reg. 192/96, a generator is a person who consigns hazardous waste for storage, transport, treatment or disposal. As of 2007, Alberta Environment no longer provides detailed information on each waste generator, such as approval number, class, and class description.

Government Publication Date: Dec 31, 2015**Greenhouse Gas Emissions from Large Facilities:**Federal **GHG**

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO₂ eq).

Government Publication Date: 2013 - Dec 2014**Gas Processing Plants:**Provincial **GPP**

The Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) - has an inventory of all Gas Processing Plants in Alberta, with information such as location, names of plant, facility type, operator name, facility license, design capacities, etc.

Government Publication Date: Oct 31, 2016**Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database:**Provincial **HELP**

The H.E.L.P. Data Tracking and Management Control System was created to provide tracking and management capabilities of industrial landfills in Alberta for the Department of Environment. Detailed information including company name, location, type of landfill, priority, score, status, use and much more is included in this database.

Government Publication Date: June 1988***Horizontal Wells:**Provincial **HORW**

Defined as drilling directionally at a wellbore inclination angle exceeding 85 degrees, horizontal drilling can help increase resource recovery while minimizing surface impact. Recent improvements in the technology have made it possible to combine horizontal drilling with hydraulic fracturing to help coax oil and natural gas out of tight rock. Today, more than half of western Canada's wells are being drilled horizontally. Data includes: well locations (LE,LS,SE,TWP,RG,M,E), licence numbers, well names, Business Associate (BA) codes, licensee abbreviations, spud dates, final drilling dates, total depth, true vertical depth, and last updated dates. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

Government Publication Date: Up to Oct 2015**Indian & Northern Affairs Fuel Tanks:**Federal **IAFT**

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Identification and Verification of Active and Inactive Land Disposal Sites:

Provincial

LDS

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. A point scoring system was used to classify the sites into potential priority 1, priority 2 or priority 3 groups on the basis of the type of waste received at the sites and the site environment. Sites that, according to available information, may pose a hazard to public health and safety or the environment are classified as potential priority 1 sites.

Government Publication Date: Oct 1982***Land Disposal Sites on Indian Reserves:**

Provincial

LDSI

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. This database specifically identifies land disposal sites on Indian Reserves. Information on each site is limited to: location, band, size and general comments.

Government Publication Date: Oct 1982***Lumber Related Operations - Certificates of Approval:**

Provincial

LUM

This database contains approvals for processes pertaining to the manufacturing of wood products, pulp and paper including the associated water treatment processes. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012**Canadian Mine Locations:**

Private

MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009***Metals, Minerals and Building Materials Operations - Certificates of Approval:**

Provincial

MMB

This database contains approvals for processes pertaining to the manufacturing of building materials, metals, and mineral products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012**Mineral Occurrences:**

Provincial

MNR

The AMDO (Alberta Mineral Deposits and Occurrences) application was created by the Minerals and Coal Geoscience Section of the Alberta Geological Survey as a database for mineral deposits in Alberta in the early 1990s. This is a one time inventory and will not be updated.

Government Publication Date: 1993-2003***National Analysis of Trends in Emergencies System (NATES):**

Federal

NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994***PTMAA Non-Compliant Storage Tanks:**

Provincial

NC TANKS

The Alberta Fire Code requires that storage tanks be registered. Tanks may not be registered because they do not meet minimum equipment standards or the owners have not made the annual registration application or paid the necessary registration fees. Some tank owners have installed tanks without a permit. This source contains information on facilities which have tanks that have ceased to be registered or have never been registered. It is maintained and updated by the Petroleum Tank Management Association of Alberta (PTMAA).

Government Publication Date: Sep 31, 2016**National Defense & Canadian Forces Fuel Tanks:**

Federal

NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills:

Federal

NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites:

Federal

NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Wells:

Federal

NEBW

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES):

Federal

NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets 'or Trends' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory:

Federal

NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory:

Federal

NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: Dec 31, 2014

Operating and Abandoned Mines:

Provincial

OAM

This data is based on the 2001 edition (revised in 2003), published by the Alberta Energy and Utilities Board (EUB) now the Alberta Energy Regulator (AER). It was a one time inventory of Operating and Abandoned Coal Mines in Alberta. In 1905, Alberta began to catalogue coal mines by assigning a unique number to each operation. This database will provide information on location, mine #, mine name, mine company, life span, amount of coal produced, depth, thickness and other important information concerning the mine.

Government Publication Date: 2001, 2003*

Oil and Gas Wells:

Private

OGW

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Jun 2016

Alberta Orphan Wells:

Provincial

ORP

Orphan wells are wells that have not been properly abandoned and whose operators are defunct or insolvent. In Alberta, orphan wells fall under the responsibility of the Orphan Well Association, which works under the the delegated authority of the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB). The data includes Location, Well ID, License Name and License Number.

Government Publication Date: Sep 30, 2016

Canadian Pulp and Paper:

Private

PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009

Parks Canada Fuel Storage Tanks:

Federal

PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Petrochemical, Coal and Gas Operations - Certificates of Approval:

Provincial

PCG

This database contains approvals for processes pertaining to petroleum, coal, and oil and gas processing. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Pesticide Register:

Provincial

PES

This is a list of all Registered Pesticide Vendors in Alberta (retail and wholesale). The pesticide vendor list is comprised of vendors who have both audited AWSA pesticide storage facilities as part of their operation, and those vendors that do not have an audited AWSA pesticide storage facilities. Non-audited retail and wholesale vendors may be selling products that are not covered by the AWSA program, or may be utilizing external AWSA pesticide warehouses. Registration numbers and expiry dates are identified for each operation. If a registration number is not present, the operation's vendor registration is in the process of renewal.

Government Publication Date: 1998-Aug 2015

Conglomerate and Waste Management Facilities:

Provincial

PITS

This database contains approvals for processes pertaining to the use of gravel pits, sand pits, and clay pits. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Alberta Private Sewage Disposal Permits:

Provincial

PSP

These permits are private sewage disposal permits that have been issued to owners and contractors. They would include various types of installations including holding tanks, septic tanks, packaged treatment plants, sand filters, fields, mounds, lagoons and open discharges. In 2003 Alberta Municipal Affairs started collecting information and issuing permits using an electronic permitting system. These records include all private sewage disposal permits within the jurisdiction of Alberta Municipal Affairs.

Government Publication Date: 2003-2013

PTMAA Approved (Open) Permits:

Provincial

PTMAA PERMITS

The Petroleum Tank Management Association of Alberta maintains a list of open permits it has issued within its jurisdiction. Prior to installing, removing, or altering tanks, storage tanks owners must receive approval in the form of a permit from the Authority Having Jurisdiction (in this case, PTMAA).

Government Publication Date: Apr 30, 2016

Hazardous Waste Receivers Summary:

Provincial

REC

A waste receiving location is any site or facility to which waste is transferred through a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents receivers of regulated wastes under Alberta's Waste Control Regulation, Alta. Reg. 192/96. As of 2007, Alberta Environment no longer provides detailed information on each waste receiver, such as approval number, class, and class description.

Government Publication Date: Dec 31, 2015

Retail Fuel Storage Tanks:

Private

RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: Oct 31, 2015

Scott's Manufacturing Directory:

Private

SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Special Operation Classifications - Certificates of Approval:

Provincial

[SPEC](#)

This database contains approvals for processes pertaining to classifications listed as special operations (i.e. locations owned/operated by municipalities, operations that involve the presence of pesticides). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012**Inventory of Waste Disposal Sites:**

Private

[WDS](#)

This one time inventory is a compilation of information collected from each region and pertains to active, regulated waste disposal sites within the province of Alberta. In the past, waste disposal sites were registered with both regional and health offices. That process was dissolved and regional landfills were developed. There is no central source of this information. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1998***Wastewater Operations:**

Provincial

[WSTE](#)

This database contains approvals for processes pertaining to wastewater treatment systems. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012**Water Well Information System:**

Provincial

[WWIS](#)

This database was collected from the Groundwater Information Center of the Natural Resource Service and contains over 387,000 records. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: Aug 31, 2015

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Appendix C

Property Title Search Documents



LAND TITLE CERTIFICATE

S

LINC SHORT LEGAL
0021 202 320 5;2;25;19;SW

TITLE NUMBER
141 053 800

LEGAL DESCRIPTION
MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 121 165 482

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

141 053 800 03/03/2014 TRANSFER OF LAND SEE INSTRUMENT

OWNERS

1797669 ALBERTA LTD.
OF 18 11410 27 ST SE
CALGARY
ALBERTA T2Z 3R6

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

121 165 483 03/07/2012 CAVEAT
RE : VENDOR'S LIEN
CAVEATOR - KATHLEEN HAWKWOOD
CAVEATOR - GLENDA JOHANSEN
BOTH OF:
300, 2912 MEMORIAL DRIVE SE
CALGARY
ALBERTA T2A6R1

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

141 053 800

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

AGENT - STANLEY A CHURCH

(DATA UPDATED BY: TRANSFER OF CAVEAT
131170141)

141 053 802 03/03/2014 CAVEAT

RE : PURCHASERS INTEREST

CAVEATOR - ROYOP DEVELOPMENT CORPORATION.

ATTENTION: PRESIDENT

200, 1060-7 ST SW

CALGARY

ALBERTA T2R0C4

AGENT - RICHARD B MASK

141 053 803 03/03/2014 CAVEAT

RE : PURCHASERS INTEREST

CAVEATOR - MAXIMA DEVELOPMENTS INC.

2500, 10303 JASPER AVE

EDMONTON

ALBERTA T5J3N6

CAVEATOR - HIGHFIELD INVESTMENT GROUP INC.

18 11410 27 ST SE

CALGARY

ALBERTA T2Z3R6

AGENT - RONALD A SOROKIN

(DATA UPDATED BY: CHANGE OF NAME 151055283)

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 08:59 A.M.

ORDER NUMBER: 31873973

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION, APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON MARCH 03,2014

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 320 5;2;25;19;SW 121 165 482

LEGAL DESCRIPTION
MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 051 113 525

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

121 165 482 03/07/2012 TRANSFER OF LAND SEE INSTRUMENT

OWNERS

MAXIMA DEVELOPMENTS INC.
OF 420, 1925 - 18 AVENUE NE
CALGARY
ALBERTA T2E 7T8
AS TO AN UNDIVIDED 33.33% INTEREST

HIGHFIELD STOCK FARM INC.
OF 209, 10836- 24 ST SE
CALGARY
ALBERTA T2Z 4C9
AS TO AN UNDIVIDED 26.67% INTEREST

1684676 ALBERTA LTD.
OF 2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P 2W1
AS TO AN UNDIVIDED 16.67% INTEREST

1684697 ALBERTA LTD.
OF 2100, 700 - 2 STREET SW

CALGARY
ALBERTA T2P 2W1
AS TO AN UNDIVIDED 13.33% INTEREST

CLT CONTRACTING LTD.
OF 1802 - 20 STREET
DIDSBURY
ALBERTA T0M 0W0
AS TO AN UNDIVIDED 10.00% INTEREST

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
121 165 483	03/07/2012	CAVEAT RE : VENDOR'S LIEN CAVEATOR - KATHLEEN HAWKWOOD CAVEATOR - GLENDA JOHANSEN BOTH OF: 300, 2912 MEMORIAL DRIVE SE CALGARY ALBERTA T2A6R1 AGENT - STANLEY A CHURCH (DATA UPDATED BY: TRANSFER OF CAVEAT 131170141)
131 170 141	17/07/2013	TRANSFER OF CAVEAT 121165483 TRANSFeree - KATHLEEN HAWKWOOD TRANSFeree - GLENDA JOHANSEN BOTH OF: 300, 2912 MEMORIAL DRIVE SE CALGARY ALBERTA T2A6R1 AGENT - STANLEY A CHURCH
141 053 799	03/03/2014	CAVEAT RE : VENDOR'S LIEN CAVEATOR - MAXIMA DEVELOPMENTS INC. CAVEATOR - HIGHFIELD STOCK FARM INC. CAVEATOR - 1684676 ALBERTA LTD. CAVEATOR - 1684697 ALBERTA LTD. CAVEATOR - TRICO DEVELOPMENTS (1990) LTD. ALL OF : 2500, 10303 JASPER AVE EDMONTON ALBERTA T5J3N6 AGENT - RONALD A SOROKIN
141 053 800	03/03/2014	TRANSFER OF LAND OWNERS - 1797669 ALBERTA LTD.

(CONTINUED)

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
--------	--------------	-------------

	18 11410 27 ST SE	
	CALGARY	
	ALBERTA T2Z3R6	
	NEW TITLE ISSUED	

TOTAL INSTRUMENTS: 004

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 08:59 A.M.

ORDER NUMBER: 31873973

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON JULY 03,2012

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 320 5;2;25;19;SW 051 113 525

LEGAL DESCRIPTION
MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 051 113 524

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

051 113 525 06/04/2005 TRANSFER OF LAND SEE INSTRUMENT

OWNERS

GERTRUDE MARIE HAWKWOOD
OF 25055 TOWNSHIP ROAD 253A
CALGARY
ALBERTA T3L 2P8
AS TO AN UNDIVIDED 1/3 INTEREST

KATHLEEN HAWKWOOD
OF 23-28 AVENUE SW
CALGARY
ALBERTA T2S 2X9
AS TO AN UNDIVIDED 1/3 INTEREST

GLENDA JOHANSEN
OF RR 1
STRATHMORE
ALBERTA T1P 1J6
AS TO AN UNDIVIDED 1/3 INTEREST

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

051 113 525

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

071 387 957 02/08/2007 CAVEAT
RE : PURCHASERS INTEREST
CAVEATOR - 1330825 ALBERTA LTD.
CAVEATOR - LARRY W LEFAIVRE
BOTH OF:
ATTN: JEFFREY H SELBY
3400, 150-6 AVE SW
CALGARY
ALBERTA T2P3Y7
AGENT - JEFFREY H SELBY

071 519 294 20/10/2007 DISCHARGE OF CAVEAT 071387957

121 165 482 03/07/2012 TRANSFER OF LAND
OWNERS - MAXIMA DEVELOPMENTS INC.
420, 1925 - 18 AVENUE NE
CALGARY
ALBERTA T2E7T8
AS TO 33.33%
OWNERS - HIGHFIELD STOCK FARM INC.
209, 10836- 24 ST SE
CALGARY
ALBERTA T2Z4C9
AS TO 26.67%
OWNERS - 1684676 ALBERTA LTD.
2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P2W1
AS TO 16.67%
OWNERS - 1684697 ALBERTA LTD.
2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P2W1
AS TO 13.33%
OWNERS - CLT CONTRACTING LTD.
1802 - 20 STREET
DIDSBURY
ALBERTA T0M0W0
AS TO 10.00%
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 003

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 08:59 A.M.

ORDER NUMBER: 31873973

CUSTOMER FILE NUMBER:



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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 06,2005

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 320 5;2;25;19;SW 051 113 524

LEGAL DESCRIPTION
MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 921 072 370

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

051 113 524 06/04/2005 AFFIDAVIT OF
 SURVIVING JOINT
 TENANT

OWNERS

GERTRUDE MARIE HAWKWOOD
OF BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

051 113 525 06/04/2005 TRANSFER OF LAND
 OWNERS - GERTRUDE MARIE HAWKWOOD
 25055 TOWNSHIP ROAD 253A
 CALGARY
 ALBERTA T3L2P8
 AS TO 1/3
 OWNERS - KATHLEEN HAWKWOOD
 (CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

051 113 524

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

23-28 AVENUE SW
CALGARY
ALBERTA T2S2X9
AS TO 1/3
OWNERS - GLENDA JOHANSEN
RR 1
STRATHMORE
ALBERTA T1P1J6
AS TO 1/3
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 08:59 A.M.

ORDER NUMBER: 31873973

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 06,2005

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 320 5;2;25;19;SW 921 072 370

LEGAL DESCRIPTION
MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 881 140 088

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

921 072 370 31/03/1992 TRANSFER OF LAND \$300,000 SEE INSTRUMENT

OWNERS

THOMAS MASON HAWKWOOD

AND
GERTRUDE MARIE HAWKWOOD
BOTH OF:
BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA
AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

921 072 372 31/03/1992 REQUEST FOR RELEASE OF D.C.T.
DCT ISSUED
SURRENDERED BY 051113524

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

921 072 370

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

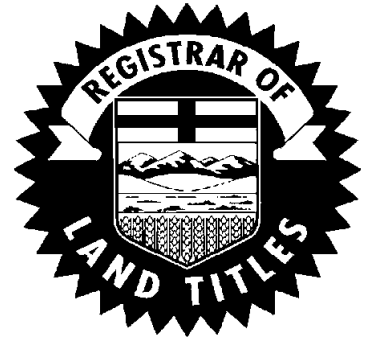
051 113 524 06/04/2005 AFFIDAVIT OF SURVIVING JOINT TENANT
NEW TITLE ISSUED
AFFECTED PARTY: THOMAS MASON HAWKWOOD

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 08:59 A.M.

ORDER NUMBER: 31873973

CUSTOMER FILE NUMBER:



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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON MARCH 31,1992

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 320 5;2;25;19;SW 881 140 088

LEGAL DESCRIPTION
MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
881 140 088	11/08/1988				SEPARATION

OWNERS

THOMAS MASON HAWKWOOD (FARMER)
OF BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA T2M 4N3

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	NUMBER	DATE (D/M/Y)	PARTICULARS
881 140 089	11/08/1988		REQUEST FOR RELEASE OF D.C.T. DCT ISSUED SURRENDERED BY 921072370
921 072 370	31/03/1992		TRANSFER OF LAND OWNERS - THOMAS MASON HAWKWOOD OWNERS - GERTRUDE MARIE HAWKWOOD BOTH OF: BOX 8, SITE 16, S.S. 1 CALGARY

(CONTINUED)

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
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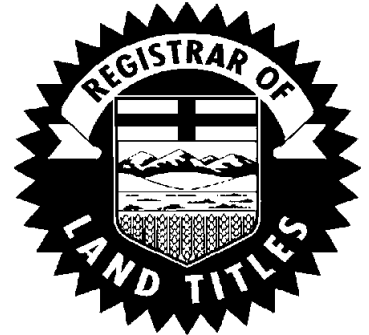
ALBERTA
AS JOINT TENANTS
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 08:59 A.M.

ORDER NUMBER: 31873973

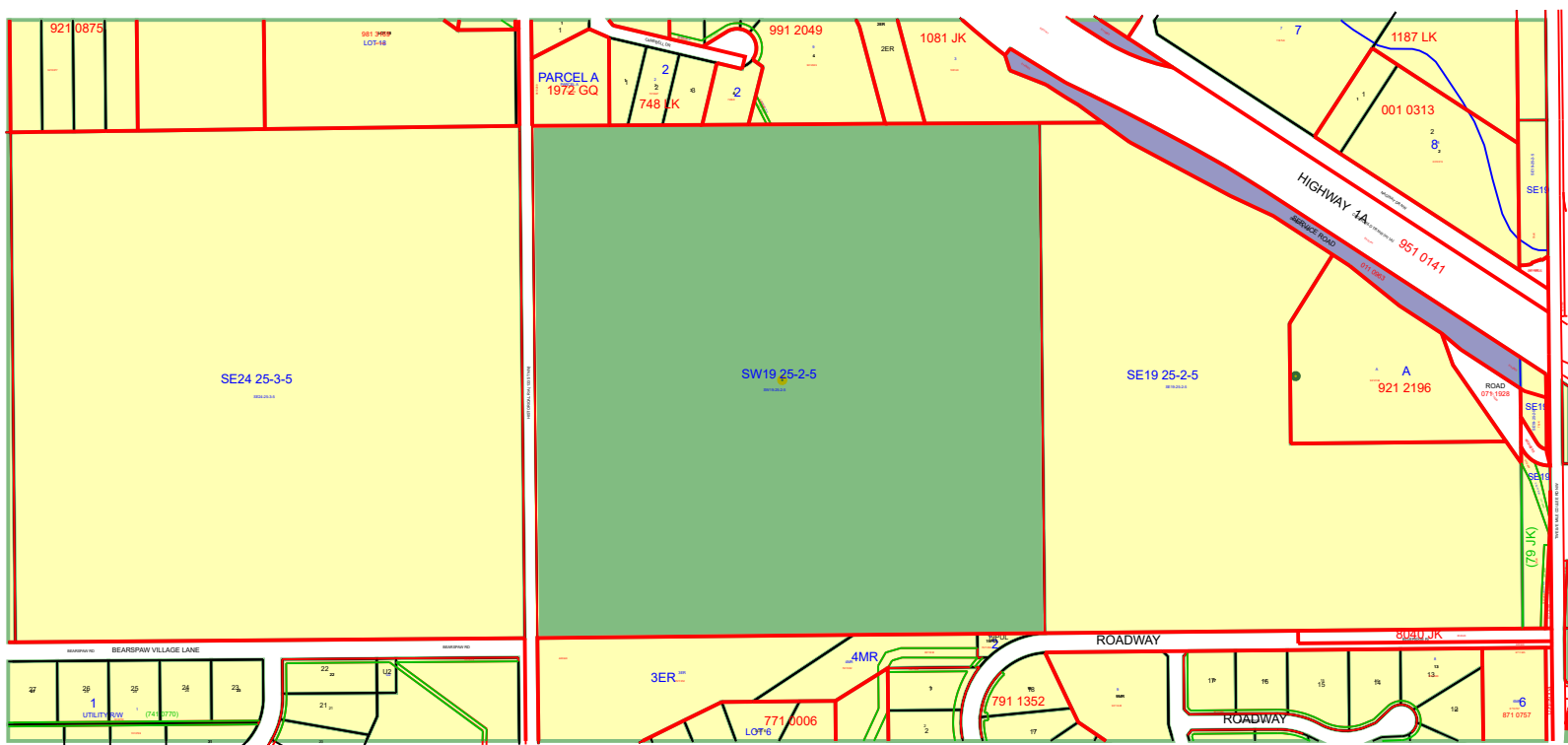
CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).





LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0032 355 845 5;2;25;19;SE 141 053 800 +1

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
THAT PORTION OF THE SOUTHEAST QUARTER
WHICH LIES SOUTH AND WEST OF ROAD PLAN 9510141
AND WEST OF TRANSMISSION LINE RIGHT OF WAY ON PLAN 79JK
CONTAINING 47.6 HECTARES 117.56 ACRES MORE OR LESS
EXCEPTING THEREOUT:

A) THAT PORTION OF BLOCK A ON PLAN 9212196
WHICH LIES SOUTH OF ROAD PLAN 9510141
CONTAINING 7.237 HECTARES (17.88 ACRES) MORE OR LESS
B) PLAN NUMBER HECTARES (ACRES) MORE OR LESS
ROAD 0711928 0.040 0.099

EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 121 165 482 +1

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

141 053 800 03/03/2014 TRANSFER OF LAND SEE INSTRUMENT

OWNERS

1797669 ALBERTA LTD.
OF 18 11410 27 ST SE
CALGARY
ALBERTA T2Z 3R6

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

141 053 800 +1

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

121 165 483 03/07/2012 CAVEAT
 RE : VENDOR'S LIEN
 CAVEATOR - KATHLEEN HAWKWOOD
 CAVEATOR - GLENDA JOHANSEN
 BOTH OF:
 300, 2912 MEMORIAL DRIVE SE
 CALGARY
 ALBERTA T2A6R1
 AGENT - STANLEY A CHURCH
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 131170141)

141 053 802 03/03/2014 CAVEAT
 RE : PURCHASERS INTEREST
 CAVEATOR - ROYOP DEVELOPMENT CORPORATION.
 ATTENTION: PRESIDENT
 200, 1060-7 ST SW
 CALGARY
 ALBERTA T2R0C4
 AGENT - RICHARD B MASK

141 053 803 03/03/2014 CAVEAT
 RE : PURCHASERS INTEREST
 CAVEATOR - MAXIMA DEVELOPMENTS INC.
 2500, 10303 JASPER AVE
 EDMONTON
 ALBERTA T5J3N6
 CAVEATOR - HIGHFIELD INVESTMENT GROUP INC.
 18 11410 27 ST SE
 CALGARY
 ALBERTA T2Z3R6
 AGENT - RONALD A SOROKIN
 (DATA UPDATED BY: CHANGE OF NAME 151055283)

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
 ACCURATE REPRODUCTION OF THE CERTIFICATE OF
 TITLE REPRESENTED HEREIN THIS 25 DAY OF
 NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON MARCH 03,2014

S
LINC SHORT LEGAL TITLE NUMBER
0032 355 845 5;2;25;19;SE 121 165 482 +1

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
THAT PORTION OF THE SOUTHEAST QUARTER
WHICH LIES SOUTH AND WEST OF ROAD PLAN 9510141
AND WEST OF TRANSMISSION LINE RIGHT OF WAY ON PLAN 79JK
CONTAINING 47.6 HECTARES 117.56 ACRES MORE OR LESS
EXCEPTING THEREOUT:

A) THAT PORTION OF BLOCK A ON PLAN 9212196
WHICH LIES SOUTH OF ROAD PLAN 9510141
CONTAINING 7.237 HECTARES (17.88 ACRES) MORE OR LESS
B) PLAN NUMBER HECTARES (ACRES) MORE OR LESS
ROAD 0711928 0.040 0.099

EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 071 182 147 +1

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

121 165 482 03/07/2012 TRANSFER OF LAND SEE INSTRUMENT

OWNERS

MAXIMA DEVELOPMENTS INC.
OF 420, 1925 - 18 AVENUE NE
CALGARY
ALBERTA T2E 7T8
AS TO AN UNDIVIDED 33.33% INTEREST

HIGHFIELD STOCK FARM INC.
OF 209, 10836- 24 ST SE
CALGARY
ALBERTA T2Z 4C9
AS TO AN UNDIVIDED 26.67% INTEREST

1684676 ALBERTA LTD.
OF 2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P 2W1
AS TO AN UNDIVIDED 16.67% INTEREST

1684697 ALBERTA LTD.
OF 2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P 2W1
AS TO AN UNDIVIDED 13.33% INTEREST

CLT CONTRACTING LTD.
OF 1802 - 20 STREET
DIDSBURY
ALBERTA T0M 0W0
AS TO AN UNDIVIDED 10.00% INTEREST

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
121 165 483	03/07/2012	CAVEAT RE : VENDOR'S LIEN CAVEATOR - KATHLEEN HAWKWOOD CAVEATOR - GLENDA JOHANSEN BOTH OF: 300, 2912 MEMORIAL DRIVE SE CALGARY ALBERTA T2A6R1 AGENT - STANLEY A CHURCH (DATA UPDATED BY: TRANSFER OF CAVEAT 131170141)
131 042 170	19/02/2013	DISCHARGE OF CAVEAT 5382LB.
131 170 141	17/07/2013	TRANSFER OF CAVEAT 121165483 TRANSFeree - KATHLEEN HAWKWOOD TRANSFeree - GLENDA JOHANSEN BOTH OF: 300, 2912 MEMORIAL DRIVE SE CALGARY ALBERTA T2A6R1 AGENT - STANLEY A CHURCH

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

121 165 482 +1

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

141 053 799 03/03/2014 CAVEAT
RE : VENDOR'S LIEN
CAVEATOR - MAXIMA DEVELOPMENTS INC.
CAVEATOR - HIGHFIELD STOCK FARM INC.
CAVEATOR - 1684676 ALBERTA LTD.
CAVEATOR - 1684697 ALBERTA LTD.
CAVEATOR - TRICO DEVELOPMENTS (1990) LTD.
ALL OF :
2500, 10303 JASPER AVE
EDMONTON
ALBERTA T5J3N6
AGENT - RONALD A SOROKIN

141 053 800 03/03/2014 TRANSFER OF LAND
OWNERS - 1797669 ALBERTA LTD.
18 11410 27 ST SE
CALGARY
ALBERTA T2Z3R6
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 006

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON JULY 03,2012

S		
LINC	SHORT LEGAL	TITLE NUMBER
0032 355 845	5;2;25;19;SE	071 182 147 +1

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
THAT PORTION OF THE SOUTHEAST QUARTER
WHICH LIES SOUTH AND WEST OF ROAD PLAN 9510141
AND WEST OF TRANSMISSION LINE RIGHT OF WAY ON PLAN 79JK
CONTAINING 47.6 HECTARES 117.56 ACRES MORE OR LESS
EXCEPTING THEREOUT:

A) THAT PORTION OF BLOCK A ON PLAN 9212196
WHICH LIES SOUTH OF ROAD PLAN 9510141
CONTAINING 7.237 HECTARES (17.88 ACRES) MORE OR LESS

B) PLAN	NUMBER	HECTARES	(ACRES)	MORE OR LESS
ROAD	0711928	0.040	0.099	

EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 051 113 525 +1

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION

071 182 147 17/04/2007 ROAD PLAN

OWNERS

GERTRUDE MARIE HAWKWOOD
OF 25055 TOWNSHIP ROAD 253A
CALGARY
ALBERTA T3L 2P8
AS TO AN UNDIVIDED 1/3 INTEREST

KATHLEEN HAWKWOOD
OF #205, 449 20 AVE NE
CALGARY
ALBERTA T2E 1R3
AS TO AN UNDIVIDED 1/3 INTEREST

(CONTINUED)

GLENDA JOHANSEN
OF RR 1
STRATHMORE
ALBERTA T1P 1J6
AS TO AN UNDIVIDED 1/3 INTEREST
(DATA UPDATED BY: CHANGE OF ADDRESS 071212323)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
071 212 323	02/05/2007	CHANGE OF ADDRESS FOR SERVICE RE: KATHLEEN HAWKWOOD #205, 449 20 AVE NE CALGARY ALBERTA T2E1R3 AFFECTS INSTRUMENT: 071182147 +1
071 387 957	02/08/2007	CAVEAT RE : PURCHASERS INTEREST CAVEATOR - 1330825 ALBERTA LTD. CAVEATOR - LARRY W LEFAIVRE BOTH OF: ATTN: JEFFREY H SELBY 3400, 150-6 AVE SW CALGARY ALBERTA T2P3Y7 AGENT - JEFFREY H SELBY
071 519 294	20/10/2007	DISCHARGE OF CAVEAT 071387957
121 165 482	03/07/2012	TRANSFER OF LAND OWNERS - MAXIMA DEVELOPMENTS INC. 420, 1925 - 18 AVENUE NE CALGARY ALBERTA T2E7T8 AS TO 33.33% OWNERS - HIGHFIELD STOCK FARM INC. 209, 10836- 24 ST SE CALGARY ALBERTA T2Z4C9 AS TO 26.67% OWNERS - 1684676 ALBERTA LTD. 2100, 700 - 2 STREET SW CALGARY ALBERTA T2P2W1

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

071 182 147 +1

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

AS TO 16.67%
OWNERS - 1684697 ALBERTA LTD.
2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P2W1
AS TO 13.33%
OWNERS - CLT CONTRACTING LTD.
1802 - 20 STREET
DIDSBURY
ALBERTA T0M0W0
AS TO 10.00%
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 17,2007

S
LINC SHORT LEGAL TITLE NUMBER
0026 299 883 5;2;25;19;SE 051 113 525 +1

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
THAT PORTION OF THE SOUTHEAST QUARTER
WHICH LIES SOUTH AND WEST OF ROAD PLAN 9510141
AND WEST OF TRANSMISSION LINE RIGHT OF WAY ON PLAN 79JK
CONTAINING 47.6 HECTARES 117.56 ACRES MORE OR LESS
EXCEPTING THEREOUT:
THAT PORTION OF BLOCK A ON PLAN 9212196
WHICH LIES SOUTH OF ROAD PLAN 9510141
CONTAINING 7.237 HECTARES 17.88 ACRES MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 051 113 524 +2

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
051 113 525	06/04/2005	TRANSFER OF LAND		SEE INSTRUMENT

OWNERS

GERTRUDE MARIE HAWKWOOD
OF 25055 TOWNSHIP ROAD 253A
CALGARY
ALBERTA T3L 2P8
AS TO AN UNDIVIDED 1/3 INTEREST

KATHLEEN HAWKWOOD
OF 23-28 AVENUE SW
CALGARY
ALBERTA T2S 2X9
AS TO AN UNDIVIDED 1/3 INTEREST

GLENDA JOHANSEN

OF RR 1
STRATHMORE
ALBERTA T1P 1J6
AS TO AN UNDIVIDED 1/3 INTEREST

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
071 182 147	17/04/2007	ROAD PLAN 0711928 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 06,2005

S
LINC SHORT LEGAL TITLE NUMBER
0026 299 883 5;2;25;19;SE 051 113 524 +2

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
THAT PORTION OF THE SOUTHEAST QUARTER
WHICH LIES SOUTH AND WEST OF ROAD PLAN 9510141
AND WEST OF TRANSMISSION LINE RIGHT OF WAY ON PLAN 79JK
CONTAINING 47.6 HECTARES 117.56 ACRES MORE OR LESS
EXCEPTING THEREOUT:
THAT PORTION OF BLOCK A ON PLAN 9212196
WHICH LIES SOUTH OF ROAD PLAN 9510141
CONTAINING 7.237 HECTARES 17.88 ACRES MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 951 011 532 +3

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
051 113 524	06/04/2005	AFFIDAVIT OF SURVIVING JOINT TENANT		

OWNERS

GERTRUDE MARIE HAWKWOOD
OF BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

051 113 524 +2

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

5382LB . 22/10/1971 CAVEAT
CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY
LIMITED.

051 113 525 06/04/2005 TRANSFER OF LAND
OWNERS - GERTRUDE MARIE HAWKWOOD
25055 TOWNSHIP ROAD 253A
CALGARY
ALBERTA T3L2P8
AS TO 1/3
OWNERS - KATHLEEN HAWKWOOD
23-28 AVENUE SW
CALGARY
ALBERTA T2S2X9
AS TO 1/3
OWNERS - GLENDA JOHANSEN
RR 1
STRATHMORE
ALBERTA T1P1J6
AS TO 1/3
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 06,2005

S
LINC SHORT LEGAL TITLE NUMBER
0026 299 883 5;2;25;19;SE 951 011 532 +3

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
THAT PORTION OF THE SOUTHEAST QUARTER
WHICH LIES SOUTH AND WEST OF ROAD PLAN 9510141
AND WEST OF TRANSMISSION LINE RIGHT OF WAY ON PLAN 79JK
CONTAINING 47.6 HECTARES 117.56 ACRES MORE OR LESS
EXCEPTING THEREOUT:
THAT PORTION OF BLOCK A ON PLAN 9212196
WHICH LIES SOUTH OF ROAD PLAN 9510141
CONTAINING 7.237 HECTARES 17.88 ACRES MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 921 276 552 +1

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

951 011 532 13/01/1995 ROAD PLAN

OWNERS

THOMAS MASON HAWKWOOD

AND
GERTRUDE MARIE HAWKWOOD
BOTH OF:
BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA
AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

951 011 532 +3

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

5382LB . 22/10/1971 CAVEAT
CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY
LIMITED.

921 282 085 09/11/1992 REQUEST FOR RELEASE OF D.C.T.
DCT ISSUED
SURRENDERED BY 051113524

051 113 524 06/04/2005 AFFIDAVIT OF SURVIVING JOINT TENANT
NEW TITLE ISSUED
AFFECTED PARTY: THOMAS MASON HAWKWOOD

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JANUARY 13,1995

S
LINC SHORT LEGAL TITLE NUMBER
0023 928 773 5;2;25;19;SE 921 276 552 +1

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
SOUTH EAST QUARTER
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

(A)	PLAN	NUMBER	HECTARES	ACRES
	ROAD	2265AZ	1.38	3.40
	ROAD	4576BM	0.121	0.30
	CUT-OFF	4576BM	0.012	0.03

(B) THAT PORTION OF SAID QUARTER SECTION WHICH LIES NORTH
AND EAST OF ROAD PLAN 2265AZ
CONTAINING 10.2 HECTARES (25.2 ACRES) MORE OR LESS

(C) THAT PORTION OF THE EAST 150 FEET IN PERPENDICULAR
WIDTH THROUGHOUT OF THE SAID QUARTER SECTION WHICH
LIES SOUTH OF ROAD PLAN 4576BM
CONTAINING 2.03 HECTARES (5.02 ACRES) MORE OR LESS

(D)	PLAN	NUMBER	HECTARES	ACRES
	SUBDIVISION	9212196	8.974	22.17

EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 921 072 371

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

921 276 552 03/11/1992 SUBDIVISION PLAN

OWNERS

THOMAS MASON HAWKWOOD

AND

GERTRUDE MARIE HAWKWOOD

BOTH OF:

(CONTINUED)

BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA
AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
921 087 714	21/04/1992	CAVEAT RE : ROADWAY CAVEATOR - HER MAJESTY THE QUEEN IN RIGHT OF ALBERTA AS REPRESENTED BY MINISTER OF TRANSPORTATION AND UTILITIES DIRECTOR, PROPERTY SERVICES ALBERTA TRANSPORTATION AND UTILITIES TWIN ATRIA BUILDING, MAIN FLOOR 4999-98 AVE EDMONTON ALBERTA T6B2X3 AGENT - PETER J W ROCHE
921 282 085	09/11/1992	REQUEST FOR RELEASE OF D.C.T.
951 011 531	13/01/1995	DISCHARGE OF CAVEAT 921087714
951 011 532	13/01/1995	ROAD PLAN 9510141 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 03,1992

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 346 5;2;25;19;SE 921 072 371

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
SOUTH EAST QUARTER
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

(A)	PLAN	NUMBER	HECTARES	ACRES
	ROAD	2265AZ	1.38	3.40
	ROAD	4576BM	0.121	0.30
	CUT-OFF	4576BM	0.012	0.03

(B) THAT PORTION OF SAID QUARTER SECTION WHICH LIES NORTH
AND EAST OF ROAD PLAN 2265AZ
CONTAINING 10.2 HECTARES (25.2 ACRES) MORE OR LESS
(C) THAT PORTION OF THE EAST 150 FEET IN PERPENDICULAR
WIDTH THROUGHOUT OF THE SAID QUARTER SECTION WHICH
LIES SOUTH OF ROAD PLAN 4576BM
CONTAINING 2.03 HECTARES (5.02 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 881 140 088 A .

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
921 072 371	31/03/1992	TRANSFER OF LAND	\$300,000	SEE INSTRUMENT

OWNERS

THOMAS MASON HAWKWOOD

AND

GERTRUDE MARIE HAWKWOOD

BOTH OF:

BOX 8, SITE 16, S.S. 1

CALGARY

(CONTINUED)

ALBERTA
AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
921 072 372	31/03/1992	REQUEST FOR RELEASE OF D.C.T. DCT ISSUED SURRENDERED BY 921276552
921 087 714	21/04/1992	CAVEAT RE : ROADWAY CAVEATOR - HER MAJESTY THE QUEEN IN RIGHT OF ALBERTA AS REPRESENTED BY MINISTER OF TRANSPORTATION AND UTILITIES DIRECTOR, PROPERTY SERVICES ALBERTA TRANSPORTATION AND UTILITIES TWIN ATRIA BUILDING, MAIN FLOOR 4999-98 AVE EDMONTON ALBERTA T6B2X3 AGENT - PETER J W ROCHE
921 276 552	03/11/1992	SUBDIVISION PLAN 9212196 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 004

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON MARCH 31, 1992

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 346 5;2;25;19;SE 881 140 088 A .

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
SOUTH EAST QUARTER
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

(A)	PLAN	NUMBER	HECTARES	ACRES
	ROAD	2265AZ	1.38	3.40
	ROAD	4576BM	0.121	0.30
	CUT-OFF	4576BM	0.012	0.03

(B) THAT PORTION OF SAID QUARTER SECTION WHICH LIES NORTH
AND EAST OF ROAD PLAN 2265AZ
CONTAINING 10.2 HECTARES (25.2 ACRES) MORE OR LESS
(C) THAT PORTION OF THE EAST 150 FEET IN PERPENDICULAR
WIDTH THROUGHOUT OF THE SAID QUARTER SECTION WHICH
LIES SOUTH OF ROAD PLAN 4576BM
CONTAINING 2.03 HECTARES (5.02 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
881 140 088	11/08/1988				SEPARATION

OWNERS

THOMAS MASON HAWKWOOD (FARMER)
OF BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA T2M 4N3

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

881 140 088 A .

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
881 140 089	11/08/1988	REQUEST FOR RELEASE OF D.C.T. DCT ISSUED SURRENDERED BY 921072371
921 072 371	31/03/1992	TRANSFER OF LAND OWNERS - THOMAS MASON HAWKWOOD OWNERS - GERTRUDE MARIE HAWKWOOD BOTH OF: BOX 8, SITE 16, S.S. 1 CALGARY ALBERTA AS JOINT TENANTS NEW TITLE ISSUED

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:07 A.M.

ORDER NUMBER: 31874058

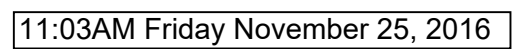
CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .





LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0032 355 837 9212196;A 131 164 502

LEGAL DESCRIPTION

PLAN 9212196
BLOCK A
CONTAINING 8.974 HECTARES (22.18 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES	(ACRES)	MORE OR LESS
ROAD	9510141	1.737	4.29	
ROAD	0711928	0.794	1.962	

EXCEPTING THEREOUT ALL MINES AND MINERALS

ATS REFERENCE: 5;2;25;19;SE

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 121 191 562

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
131 164 502	11/07/2013	TRANSFER OF LAND	\$2,000,000	\$2,000,000

OWNERS

MAXIMA DEVELOPMENTS INC.
OF 120 COUNTRY HILLS LANDING NW, SUITE 101
CALGARY
ALBERTA T3K 5P3

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
121 165 483	03/07/2012	CAVEAT RE : VENDOR'S LIEN CAVEATOR - KATHLEEN HAWKWOOD CAVEATOR - GLENDA JOHANSEN

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

131 164 502

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

BOTH OF:

300, 2912 MEMORIAL DRIVE SE

CALGARY

ALBERTA T2A6R1

AGENT - STANLEY A CHURCH

(DATA UPDATED BY: TRANSFER OF CAVEAT
131170141)

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:13 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JULY 11, 2013

S
LINC SHORT LEGAL TITLE NUMBER
0032 355 837 9212196;A 121 191 562

LEGAL DESCRIPTION

PLAN 9212196
BLOCK A
CONTAINING 8.974 HECTARES (22.18 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES	(ACRES)	MORE OR LESS
ROAD	9510141	1.737	4.29	
ROAD	0711928	0.794	1.962	

EXCEPTING THEREOUT ALL MINES AND MINERALS

ATS REFERENCE: 5;2;25;19;SE

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 121 165 481

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
121 191 562	27/07/2012	TRANSFER OF LAND	\$867,195	NOMINAL

OWNERS

WAYNE POFFENROTH
OF BOX 2158
DIDSBURY
ALBERTA T0M 0W0

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
121 165 483	03/07/2012	CAVEAT RE : VENDOR'S LIEN CAVEATOR - GERTRUDE MARIE HAWKWOOD CAVEATOR - KATHLEEN HAWKWOOD

(CONTINUED)

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
--------	--------------	-------------

CAVEATOR - GLENDA JOHANSEN
ALL OF :
C/O BEAUMONT CHURCH LLP
300, 2912 MEMORIAL DRIVE SE
CALGARY
ALBERTA T2A6R1
AGENT - STANLEY A CHURCH

131 164 502 11/07/2013 TRANSFER OF LAND
OWNERS - MAXIMA DEVELOPMENTS INC.
120 COUNTRY HILLS LANDING NW, SUITE 101
CALGARY
ALBERTA T3K5P3
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:14 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JULY 27,2012

S
LINC SHORT LEGAL TITLE NUMBER
0032 355 837 9212196;A 121 165 481

LEGAL DESCRIPTION

PLAN 9212196
BLOCK A
CONTAINING 8.974 HECTARES (22.18 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES	(ACRES)	MORE OR LESS
ROAD	9510141	1.737	4.29	
ROAD	0711928	0.794	1.962	

EXCEPTING THEREOUT ALL MINES AND MINERALS

ATS REFERENCE: 5;2;25;19;SE
ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 071 182 147

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
121 165 481	03/07/2012	TRANSFER OF LAND	\$867,195	\$867,195

OWNERS

MAXIMA DEVELOPMENTS INC.
OF 420, 1925 - 18 AVENUE NE
CALGARY
ALBERTA T2E 7T8
AS TO AN UNDIVIDED 33.33% INTEREST

HIGHFIELD STOCK FARM INC.
OF 209, 10836- 24 ST SE
CALGARY
ALBERTA T2Z 4C9
AS TO AN UNDIVIDED 26.67% INTEREST

1684676 ALBERTA LTD.
OF 2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P 2W1

AS TO AN UNDIVIDED 16.67% INTEREST

1684697 ALBERTA LTD.
OF 2100, 700 - 2 STREET SW
CALGARY
ALBERTA T2P 2W1

AS TO AN UNDIVIDED 13.33% INTEREST

CLT CONTRACTING LTD.
OF 1802 - 20 STREET
DIDSBURY
ALBERTA T0M 0W0

AS TO AN UNDIVIDED 10.00% INTEREST

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
121 165 483	03/07/2012	CAVEAT RE : VENDOR'S LIEN CAVEATOR - GERTRUDE MARIE HAWKWOOD CAVEATOR - KATHLEEN HAWKWOOD CAVEATOR - GLENDA JOHANSEN ALL OF : C/O BEAUMONT CHURCH LLP 300, 2912 MEMORIAL DRIVE SE CALGARY ALBERTA T2A6R1 AGENT - STANLEY A CHURCH
121 191 562	27/07/2012	TRANSFER OF LAND OWNERS - WAYNE POFFENROTH BOX 2158 DIDSBURY ALBERTA T0M0W0 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:13 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JULY 03,2012

S
LINC SHORT LEGAL TITLE NUMBER
0032 355 837 9212196;A 071 182 147

LEGAL DESCRIPTION

PLAN 9212196
BLOCK A
CONTAINING 8.974 HECTARES (22.18 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES	(ACRES)	MORE OR LESS
ROAD	9510141	1.737	4.29	
ROAD	0711928	0.794	1.962	

EXCEPTING THEREOUT ALL MINES AND MINERALS

ATS REFERENCE: 5;2;25;19;SE
ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 051 113 524 +1

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

071 182 147 17/04/2007 ROAD PLAN

OWNERS

GERTRUDE MARIE HAWKWOOD
OF 25055 TOWNSHIP ROAD 253A
CALGARY
ALBERTA T3L 2P8

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

5382LB . 22/10/1971 CAVEAT
CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY
LIMITED.

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

071 182 147

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
071 407 615	15/08/2007	CAVEAT RE : RIGHT OF FIRST REFUSAL CAVEATOR - DAVID CHALACK 26 TUSSELWOOD DR NW CALGARY ALBERTA T3L2M6 AGENT - STANLEY A CHURCH
081 138 117	15/04/2008	DISCHARGE OF CAVEAT 5382LB.
101 254 839	26/08/2010	DISCHARGE OF CAVEAT 071407615
121 165 481	03/07/2012	TRANSFER OF LAND OWNERS - MAXIMA DEVELOPMENTS INC. 420, 1925 - 18 AVENUE NE CALGARY ALBERTA T2E7T8 AS TO 33.33% OWNERS - HIGHFIELD STOCK FARM INC. 209, 10836- 24 ST SE CALGARY ALBERTA T2Z4C9 AS TO 26.67% OWNERS - 1684676 ALBERTA LTD. 2100, 700 - 2 STREET SW CALGARY ALBERTA T2P2W1 AS TO 16.67% OWNERS - 1684697 ALBERTA LTD. 2100, 700 - 2 STREET SW CALGARY ALBERTA T2P2W1 AS TO 13.33% OWNERS - CLT CONTRACTING LTD. 1802 - 20 STREET DIDSBURY ALBERTA TOM0W0 AS TO 10.00% NEW TITLE ISSUED

TOTAL INSTRUMENTS: 005

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:13 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 17, 2007

S
LINC SHORT LEGAL TITLE NUMBER
0026 299 875 9212196;A 051 113 524 +1

LEGAL DESCRIPTION

PLAN 9212196
BLOCK A
CONTAINING 8.9740 HECTARES (22.18 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

	HECTARES	(ACRES)	MORE OR LESS
A) PLAN 9510141 ROAD	1.737	4.29	
EXCEPTING THEREOUT ALL MINES AND MINERALS			

ATS REFERENCE: 5;2;25;19;SE
ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 951 011 532 +2

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
051 113 524	06/04/2005	AFFIDAVIT OF SURVIVING JOINT TENANT		

OWNERS

GERTRUDE MARIE HAWKWOOD
OF 25055 TOWNSHIP ROAD 253A
CALGARY
ALBERTA T3L 2P8

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

051 113 524 +1

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

071 182 147 17/04/2007 ROAD PLAN 0711928
TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED
FOR THE REMAINDER

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:13 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 06,2005

S
LINC SHORT LEGAL TITLE NUMBER
0026 299 875 9212196;A 951 011 532 +2

LEGAL DESCRIPTION

PLAN 9212196
BLOCK A
CONTAINING 8.9740 HECTARES (22.18 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

	HECTARES	(ACRES)	MORE OR LESS
A) PLAN 9510141 ROAD	1.737	4.29	
EXCEPTING THEREOUT ALL MINES AND MINERALS			

ATS REFERENCE: 5;2;25;19;SE
ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 921 276 552

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

951 011 532 13/01/1995 ROAD PLAN

OWNERS

THOMAS MASON HAWKWOOD

AND

GERTRUDE MARIE HAWKWOOD

BOTH OF:

25055 TOWNSHIP ROAD 253A

CALGARY

ALBERTA T3L 2P8

AS JOINT TENANTS

(DATA UPDATED BY: CHANGE OF ADDRESS 051113523)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

951 011 532 +2

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

5382LB . 22/10/1971 CAVEAT
CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY
LIMITED.

921 282 085 09/11/1992 REQUEST FOR RELEASE OF D.C.T.
DCT ISSUED
SURRENDERED BY 051113524

051 113 523 06/04/2005 CHANGE OF ADDRESS FOR SERVICE
RE: THOMAS MASON HAWKWOOD
RE: GERTRUDE MARIE HAWKWOOD
BOTH OF:
25055 TOWNSHIP ROAD 253A
CALGARY
ALBERTA T3L2P8
AFFECTS INSTRUMENT: 951011532 +2

051 113 524 06/04/2005 AFFIDAVIT OF SURVIVING JOINT TENANT
NEW TITLE ISSUED
AFFECTED PARTY: THOMAS MASON HAWKWOOD

TOTAL INSTRUMENTS: 004

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:14 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JANUARY 13,1995

S
LINC SHORT LEGAL TITLE NUMBER
0023 928 781 9212196;A 921 276 552

LEGAL DESCRIPTION
PLAN 9212196
BLOCK A
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 8.974 HECTARES (22.18 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE
ATS REFERENCE: 5;2;25;19;SE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 921 072 371

REGISTERED OWNER(S)
REGISTRATION DATE(DMY) DOCUMENT TYPE VALUE CONSIDERATION

921 276 552 03/11/1992 SUBDIVISION PLAN

OWNERS

THOMAS MASON HAWKWOOD

AND

GERTRUDE MARIE HAWKWOOD

BOTH OF:

BOX 8, SITE 16, S.S. 1

CALGARY

ALBERTA

AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

5382LB . 22/10/1971 CAVEAT
CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY
LIMITED.

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

921 276 552

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

921 087 714 21/04/1992 CAVEAT
RE : ROADWAY
CAVEATOR - HER MAJESTY THE QUEEN IN RIGHT OF
ALBERTA
AS REPRESENTED BY MINISTER OF TRANSPORTATION AND
UTILITIES
DIRECTOR, PROPERTY SERVICES
ALBERTA TRANSPORTATION AND UTILITIES
TWIN ATRIA BUILDING, MAIN FLOOR
4999-98 AVE
EDMONTON
ALBERTA T6B2X3
AGENT - PETER J W ROCHE

921 282 085 09/11/1992 REQUEST FOR RELEASE OF D.C.T.

951 011 531 13/01/1995 DISCHARGE OF CAVEAT 921087714

951 011 532 13/01/1995 ROAD PLAN 9510141
TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED
FOR THE REMAINDER

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:13 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 03,1992

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 346 5;2;25;19;SE 921 072 371

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
SOUTH EAST QUARTER
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

(A)	PLAN	NUMBER	HECTARES	ACRES
	ROAD	2265AZ	1.38	3.40
	ROAD	4576BM	0.121	0.30
	CUT-OFF	4576BM	0.012	0.03

(B) THAT PORTION OF SAID QUARTER SECTION WHICH LIES NORTH
AND EAST OF ROAD PLAN 2265AZ
CONTAINING 10.2 HECTARES (25.2 ACRES) MORE OR LESS
(C) THAT PORTION OF THE EAST 150 FEET IN PERPENDICULAR
WIDTH THROUGHOUT OF THE SAID QUARTER SECTION WHICH
LIES SOUTH OF ROAD PLAN 4576BM
CONTAINING 2.03 HECTARES (5.02 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REFERENCE NUMBER: 881 140 088 A .

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
921 072 371	31/03/1992	TRANSFER OF LAND	\$300,000	SEE INSTRUMENT

OWNERS

THOMAS MASON HAWKWOOD

AND

GERTRUDE MARIE HAWKWOOD

BOTH OF:

BOX 8, SITE 16, S.S. 1

CALGARY

(CONTINUED)

ALBERTA
AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

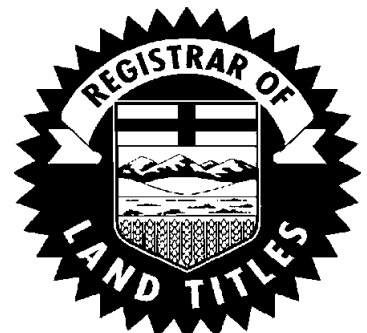
NUMBER	DATE (D/M/Y)	PARTICULARS
5382LB .	22/10/1971	CAVEAT CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
921 072 372	31/03/1992	REQUEST FOR RELEASE OF D.C.T. DCT ISSUED SURRENDERED BY 921276552
921 087 714	21/04/1992	CAVEAT RE : ROADWAY CAVEATOR - HER MAJESTY THE QUEEN IN RIGHT OF ALBERTA AS REPRESENTED BY MINISTER OF TRANSPORTATION AND UTILITIES DIRECTOR, PROPERTY SERVICES ALBERTA TRANSPORTATION AND UTILITIES TWIN ATRIA BUILDING, MAIN FLOOR 4999-98 AVE EDMONTON ALBERTA T6B2X3 AGENT - PETER J W ROCHE
921 276 552	03/11/1992	SUBDIVISION PLAN 9212196 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 004

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:14 A.M.

ORDER NUMBER: 31874179

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

(CONTINUED)

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON MARCH 31, 1992

S
LINC SHORT LEGAL TITLE NUMBER
0021 202 346 5;2;25;19;SE 881 140 088 A .

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 2 TOWNSHIP 25
SECTION 19
SOUTH EAST QUARTER
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

(A)	PLAN	NUMBER	HECTARES	ACRES
	ROAD	2265AZ	1.38	3.40
	ROAD	4576BM	0.121	0.30
	CUT-OFF	4576BM	0.012	0.03

(B) THAT PORTION OF SAID QUARTER SECTION WHICH LIES NORTH
AND EAST OF ROAD PLAN 2265AZ
CONTAINING 10.2 HECTARES (25.2 ACRES) MORE OR LESS
(C) THAT PORTION OF THE EAST 150 FEET IN PERPENDICULAR
WIDTH THROUGHOUT OF THE SAID QUARTER SECTION WHICH
LIES SOUTH OF ROAD PLAN 4576BM
CONTAINING 2.03 HECTARES (5.02 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: ROCKY VIEW COUNTY

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
881 140 088	11/08/1988				SEPARATION

OWNERS

THOMAS MASON HAWKWOOD (FARMER)
OF BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA T2M 4N3

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

881 140 088 A .

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

5382LB . 22/10/1971 CAVEAT
CAVEATOR - CANADIAN WESTERN NATURAL GAS COMPANY
LIMITED.

881 140 089 11/08/1988 REQUEST FOR RELEASE OF D.C.T.
DCT ISSUED
SURRENDERED BY 921072371

921 072 371 31/03/1992 TRANSFER OF LAND
OWNERS - THOMAS MASON HAWKWOOD
OWNERS - GERTRUDE MARIE HAWKWOOD
BOTH OF:
BOX 8, SITE 16, S.S. 1
CALGARY
ALBERTA
AS JOINT TENANTS
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 25 DAY OF
NOVEMBER, 2016 AT 09:14 A.M.

ORDER NUMBER: 31874179

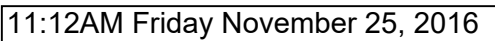
CUSTOMER FILE NUMBER:



END OF CERTIFICATE

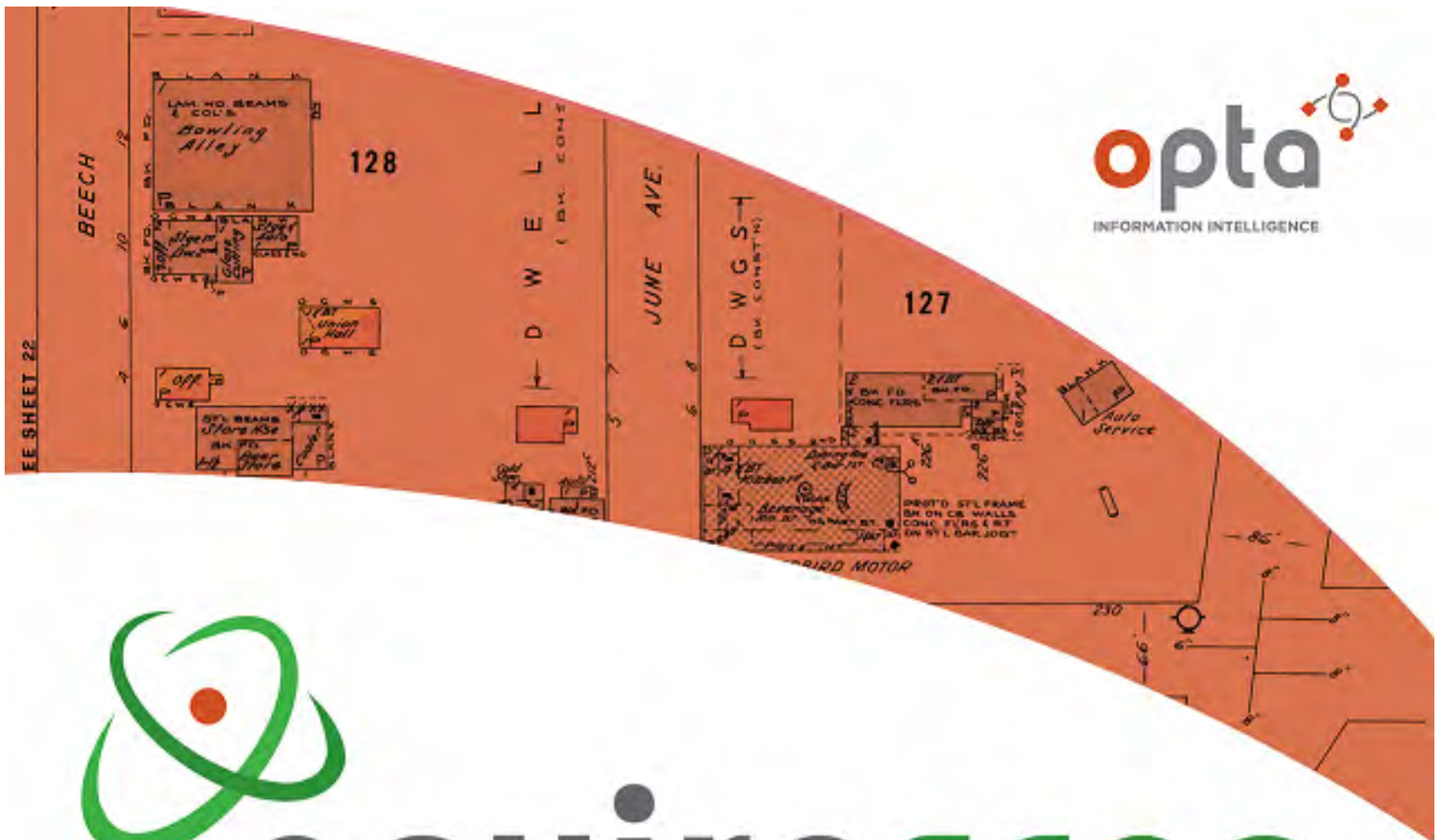
THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .



Appendix D

Correspondence from ERIS



enviroscan



An SCM Company

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:
Catherine

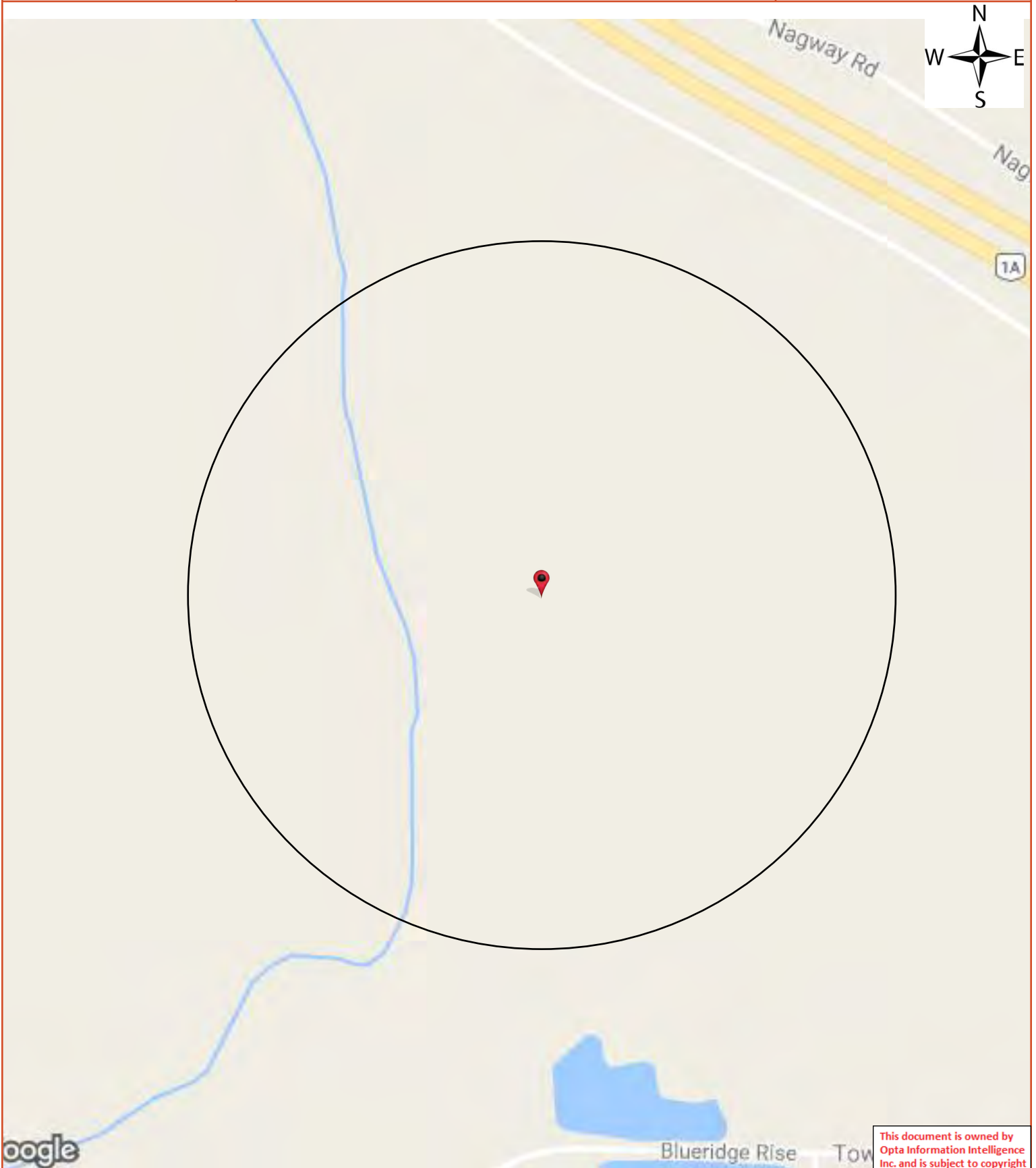
Site Address:
Bearspaw Calgary AB

Project No:
20161120004

Opta Order ID:
31194

Requested by:
**Eleanor Goolab
eris**

Date Completed:
11/25/2016 2:30:45 PM



Opta Historical Environmental Services EnviroscanTM Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

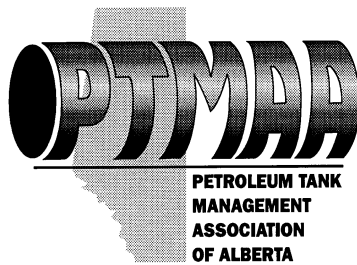
In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

Appendix E

Correspondence from PTMAA



Petroleum Tank Management Association of Alberta

Suite 980, 10303 Jasper Avenue
Edmonton, Alberta T5J 3N6
PH: (780)425-8265 or 1-866-222-8265
FAX: (780)425-4722

November 21, 2016

Cearra Stott
GHD Limited
205, 3445 114 Avenue SE
Calgary, AB
T2Z 0K6

Dear Cearra Stott:

As per your request, the PTMAA has checked the registration of active tank sites and inventory of abandoned tank sites and there are no records for the property with the legal land description:

Plan 9212196, Lot A, Calgary
SE & SW 19-25-2-W5

Please note that both databases are not complete. The main limitation of these databases is that they only include information reported through registration or a survey of abandoned sites completed in 1992 and should not be considered as a comprehensive inventory of all past or present storage tank sites. The PTMAA cannot guarantee that tanks do not or have not existed at this location. Information in the databases is based on information supplied by the owner and the PTMAA cannot guarantee its accuracy. Information on storage tanks or on past or present contaminant investigations may be filed with the local Fire Department or Alberta Environment.

Yours truly,

Tennie Jacobsen
PTMAA

Appendix F

Photographs of the Site



Photo 1 – View along the northeastern Property boundary, facing southeast.



Photo 2 – View along the northern Property boundary, facing east.



Site Photographic Log



Photo 3 – View along the western Property boundary, facing south.



Photo 4 – View along the southern Property boundary, facing east.



Site Photographic Log



Photo 5 – View of the eastern Property boundary, facing east.



Photo 6 – View of the location of the former barn down the hill from the farmyard, in the eastern portion of the Site.



Site Photographic Log

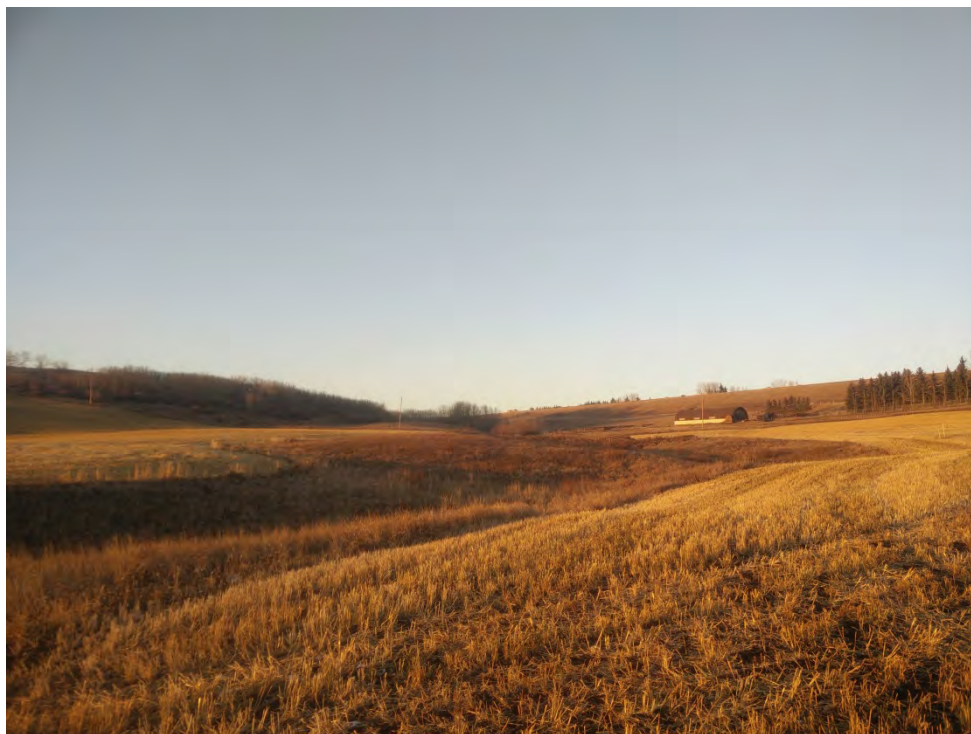


Photo 7 – View of the low lying area in the northern portion of the Site, facing north.



Photo 8 – View of the low lying vegetated area in the southern portion of the Site, facing west.



Site Photographic Log



Photo 9 – View across the location of the former barns/sheds in the farmyard, facing northwest.



Photo 10 – View across the farmyard of the scrap concrete and rock stockpile, facing east.



Site Photographic Log



Photo 11 – View of scrap material storage areas, located adjacent to the garage.



Photo 12 – View of chemical storage, located adjacent to the garage.



Photo 13 – View of general storage in the garage.



Photo 14 – View of general chemical storage in the shed.



Photo 15 – View of the farm residence, facing north.



Photo 16 – View of the buried septic tank, located adjacent to the farm residence.



Site Photographic Log

Appendix G

ACM Survey Report



June 5, 2015

966BB-15-001

Maxima Developments
120 Country Hills Landing NW
Calgary, AB T3K 5P3
Tel: 587.227.4951
Email: jstepper@me.com

SENT VIA E-MAIL

Attention: Mr. Jeremy Stepper

**RE: PRE-DEMOLITION ASBESTOS-CONTAINING MATERIAL SURVEY AT
25055 - TOWNSHIP ROAD 253A, CALGARY, ALBERTA**

Dear Mr. Stepper,

EHS Partnerships Ltd. (EHS^P) conducted a pre-demolition asbestos-containing materials (ACM) survey of the residence located at 25055 – Township Road 253A, located in Calgary, Alberta. The survey was conducted to determine the presence of ACM.

The survey was conducted on May 28, 2015, by Justin Cybulsky and Brandon Leong, Project Technicians under the direction of Brad Burwash, Division Manager for EHS^P.

REGULATIONS AND GUIDELINES

The regulations, codes and guidelines relevant to the removal of asbestos-containing building materials include the Alberta Occupational Health and Safety (OH&S) Act, Regulations, and Code, Alberta Environmental Protection and Enhancement Act and Waste Control Regulation, and the Alberta OH&S Asbestos Abatement Manual.

Part 4, and Schedule 1, Table 2 of the OH&S Code, 2009, defines occupational exposure limits (OEL) for a variety of airborne contaminants. The OEL for a particular contaminant represents conditions to which it is believed that nearly all workers may be exposed, day after day, without suffering from adverse health effects. Due to individual susceptibility, a small percentage of workers may experience discomfort at concentrations below the applicable OEL. An 8-hour OEL refers to the average concentration of a substance over an 8-hour period.

The Environmental Protection and Enhancement Act is law which was passed to protect and enhance the environment. As such, the Act and the regulations under the Act are enforceable by law. The Act places the onus on the owner, employer and employee to ensure no adverse effects are experienced in the environment.

The transportation of hazardous waste is governed under the Transportation of Dangerous Goods Act and Regulations which outline the requirements for storage, handling, and transportation of such waste.

Though asbestos is not considered hazardous waste, Alberta Environmental Protection has published guidelines for the disposal of asbestos waste. Within the guidelines, criteria have been established for the handling, transportation and disposal requirements of asbestos waste. Also within the guidelines, the types of landfills that can accept asbestos waste are outlined.

Asbestos-Containing Materials

The Alberta Asbestos Abatement Manual is a guide published by Alberta OH&S that is used for determining compliance with the Occupational Health and Safety Act in the Province of Alberta. It covers basic information on asbestos, health hazards, and requirements for worker protection, safe work practices, and the basic principles to follow for the safe abatement of ACM.

Sections 31 through 38 in Part 4 of the Alberta OH&S Code, October 2009, outline the requirements related to asbestos in buildings. Sections 31 to 33 specifically outline the limitations on the use of asbestos in buildings. Sections 34 to 38 outline requirements pertaining to asbestos in buildings to be demolished, buildings to be renovated or altered, project notifications, worker training, and containment and labeling of asbestos. The requirements of sections 34 through 38 are summarized below:

- buildings to be demolished are to have all materials with the potential of releasing asbestos fibres removed;
- ensure that if a building is to be renovated, materials in the area of the renovation that could release asbestos fibres are encapsulated, enclosed or removed;
- if asbestos-containing materials remain in place, a management plan is needed;
- a Notification of Project must be submitted at least 72 hours prior to beginning activities that may release asbestos fibres;
- asbestos abatement must be completed by worker trained to perform the work safely, workers who enter a work area where it is anticipated that fibre levels will exceed the OEL (Restricted Work Area), are certified, and workers possess the original valid certificate of completion of the course; and
- asbestos waste is to be stored, transported and disposed of in sealed containers that are clearly labeled to identify the contents and that the contents should not be inhaled.

METHODOLOGY

The residence was inspected on a room-by-room basis in order to identify the locations of potential ACM. Representative samples of materials suspected of containing asbestos were sampled and submitted to EMSL Canada for analysis to determine asbestos type and percentage content using Polarized Light Microscopy and dispersion staining techniques in accordance with the United States Environmental Protection Agency (USEPA) methodologies.

Table 3, Section 5.6.4 of the Alberta Asbestos Abatement Manual provides a guideline for sampling of homogenous materials. Sampling guidelines are listed below in Table 1: Homogenous Materials Survey Guideline. For homogenous materials, the minimum number of bulk samples collected should be completed as noted in the Alberta Asbestos Abatement Manual. If analysis establishes that a bulk material sample does contain asbestos then the entire area of homogeneous material from which the bulk material sample was taken is considered to be an asbestos-containing material.

Table 1: Homogenous Materials Survey Guideline

Type of Material	Size of Area of Homogenous Material	Minimum Number of Samples Collected
Any homogenous material, including but not limited to fireproofing, drywall joint compound, ceiling tile stucco, acoustical and stipple finishes and visually similar floor tiles.	Less than 90 m ² (<1000 ft ²)	3
	90 m ² or more but less than 450 m ² (1000-5000 ft ²)	5
	450 m ² or more (>5000 ft ²)	7

All work was conducted in accordance with standards outlined by Alberta OH&S and the National Institute for Occupational Safety and Health (NIOSH).

RESULTS

Thirteen (13) samples of building materials suspected to contain asbestos were collected from the residence and submitted with a chain of custody for analysis. Table 2: Results of Asbestos Analysis, details the results of the survey. The laboratory report is attached in Appendix I.

Table 2: Results of Asbestos Analysis

Reference Number	Sample Description / Location	Asbestos Type and Percent
1	Duct Paper / HVAC Duct Boots	Chrysotile, 60%
2	Sheet Flooring (Green) / Kitchen	None Detected
3	Sheet Flooring (Brown & Red) / NE Bedroom and Hallway	None Detected
4	Sheet Flooring (Brown & White) / Bathroom	Chrysotile, 25%
5	Sheet Flooring (Green & Red) / NW Bedroom Closet	None Detected
6	Plaster / Perimeter Walls	None Detected
7	Plaster / Demising Walls	None Detected
8	Plaster / Ceiling	None Detected
9	Texture Coat / Living Room Ceiling	None Detected
10	Drywall Joint Compound / Basement	Chrysotile, 2%

Continued, Table 2: Results of Asbestos Analysis

11	Vermiculite / Attic Space	<1% Tremolite
12	Vermiculite / Attic Space	<1% Tremolite
13	Vermiculite / Attic Space	<1% Actinolite

DISCUSSION

Six (6) of the thirteen (13) samples that were collected were found to contain asbestos. The following ACM was identified during the survey:

Drywall Joint Compound

One (1) sample of drywall joint compound was collected during the survey, and was found to contain asbestos. Section 5.6.4.1 of the Alberta Asbestos Abatement Manual states that if a bulk sample of homogeneous material is asbestos-containing, the bulk material in the entire area is considered asbestos-containing. The drywall joint compound in the basement should be treated as asbestos-containing.

Sheet Flooring

One (1) of the four (4) samples of sheet flooring collected during the survey was found to contain asbestos. All brown and white sheet flooring found in the bathroom should be treated as asbestos containing.

Duct Paper

One (1) sample of duct paper was collected during the survey, and was found to contain asbestos. All duct paper found in the residence should be treated as asbestos containing.

Vermiculite

Three (3) samples of vermiculite, taken from the ceiling space of the residence, and were found to contain asbestos. Section 5.5.10.1 of the Alberta Asbestos Abatement Manual sets the guidelines for sampling vermiculite insulation. The objective is to determine if the product is asbestos contaminated rather than determine how much asbestos is present. Vermiculite used in attics as insulating material is generally loose and exposed creating a high risk of fibre release if the material is disturbed.

In addition to the samples identified in Table 2, other materials not suspected to contain asbestos include:

- carpet, and wood flooring throughout the residence; and
- wood, concrete and metal building materials located through the residence.

CONCLUSIONS AND RECOMMENDATIONS

1. Prior to any demolition work, ACM must be removed using the following procedure:

- Low-Risk procedures must be followed to remove the asbestos-containing duct paper as per the Alberta Asbestos Abatement Manual, dated October 2012.
- Moderate-risk procedures must be followed to remove the asbestos-containing drywall joint compound and sheet flooring as per the Alberta Asbestos Abatement Manual, dated October 2012.
- High-Risk procedures must be followed to remove the asbestos-containing vermiculite as per the Alberta Asbestos Abatement Manual, dated October 2012.

Notification must be given to Alberta OH&S 72 hours prior to beginning the activities that may release asbestos fibres. Asbestos abatement must be completed by workers certified from Alberta OH&S. Throughout the abatement activities, appropriate air monitoring and inspections should be conducted by qualified personnel to demonstrate that work procedures are effective, asbestos is contained, and the waste is handled appropriately. It is recommended that a proper scope of work be developed that details the proper removal of identified ACM.

STATEMENT OF LIMITATIONS

This report is for the exclusive use of Maxima Development, and their authorized agents. Third party use of this report, or any reliance or decisions made on the information herein, is at the sole risk of the third party. EHS^P has no obligation, contractual or otherwise, to any third persons using or relying upon this report for any reason and therefore accepts no responsibility for damage suffered by any third party as a result of actions taken or decisions made on the basis of information or conclusions of this report.

CLOSURE

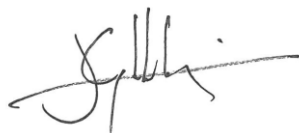
Thank you for the opportunity to be of service. If you have any questions or concerns, please do not hesitate to contact the undersigned at 403-243-0700.

Sincerely,

EHS PARTNERSHIPS LTD.

per

Report prepared by:



Justin Cybulsky
Project Technician

Report reviewed by:



Brad Burwash, B.A.Sc., CRSP
Division Manager

APPENDIX I
LABORATORY REPORT

**EMSL Canada Inc.**

413 Forge Road, SE, Calgary, AB T2H 0S9

Phone/Fax: 403-879-1149 / (403) 879-1152

<http://www.EMSL.com>CalgaryLab@EMSL.com

EMSL Canada Or 651501606

CustomerID: 55EHSP25

CustomerPO:

ProjectID:

Attn: **Justin Cybulsky**
EHS Partnerships
4303 11th Street SE
Calgary, AB T2G 4X1

Phone: (403) 243-0700
Fax:
Received: 06/02/15 9:00 AM
Analysis Date: 6/2/2015
Collected: 5/29/2015

Project: 25055 TWP 253A / 966BB - 15 - 001

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos	
			% Fibrous	% Non-Fibrous	% Type	
1 651501606-0001	DUCT BOOT - DUCT PAPER	Gray/Beige Fibrous Homogeneous		40% Non-fibrous (other)	60% Chrysotile	
2 651501606-0002	KITCHEN - SHEET FLOORING GREEN	Various/Black/Green Fibrous Homogeneous	40% Cellulose 5% Synthetic	55% Non-fibrous (other)	None Detected	
3 651501606-0003	NORTH EAST BEDROOM/ HALLWAY - SHEET FLOORING BROWN & RED	Brown/Red/Black Fibrous Homogeneous	30% Cellulose 5% Synthetic	65% Non-fibrous (other)	None Detected	
4 651501606-0004	BATHROOM - SHEET FLOORING BROWN & WHITE	Brown/White Fibrous Homogeneous	5% Cellulose	70% Non-fibrous (other)	25% Chrysotile	
5 651501606-0005	NORTH WEST CLOSET - SHEET FLOORING GREEN & RED	Red/Black/Green Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (other)	None Detected	
6-Skim Coat 651501606-0006	PERIMETER WALLS - PLASTER	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected	
6-Base Coat 651501606-0006A	PERIMETER WALLS - PLASTER	Gray/Various Non-Fibrous Homogeneous		10% Quartz 85% Non-fibrous (other) 5% Vermiculite	None Detected	

Analyst(s)

Brett Olsen (16)

Jefferson Salvador, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Canada Inc. Calgary, AB

Initial report from 06/03/2015 08:31:33

**EMSL Canada Inc.**

413 Forge Road, SE, Calgary, AB T2H 0S9

Phone/Fax: 403-879-1149 / (403) 879-1152

<http://www.EMSL.com>CalgaryLab@EMSL.com

EMSL Canada Or 651501606

CustomerID: 55EHSP25

CustomerPO:

ProjectID:

Attn: **Justin Cybulsky**
EHS Partnerships
4303 11th Street SE
Calgary, AB T2G 4X1

Phone: (403) 243-0700
 Fax:
 Received: 06/02/15 9:00 AM
 Analysis Date: 6/2/2015
 Collected: 5/29/2015

Project: 25055 TWP 253A / 966BB - 15 - 001

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
7-Skim Coat 651501606-0007	DEMISING WALLS - PLASTER	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
7-Base Coat 651501606-0007A	DEMISING WALLS - PLASTER	Gray/Various Fibrous Homogeneous	2% Hair	10% Quartz 78% Non-fibrous (other) 10% Vermiculite	None Detected
8-Skim Coat 651501606-0008	CEILING - PLASTER	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
8-Base Coat 651501606-0008A	CEILING - PLASTER	Gray/Various Fibrous Homogeneous	2% Hair	10% Quartz 78% Non-fibrous (other) 10% Vermiculite	None Detected
9 651501606-0009	LIVING ROOM - TEXTURE COAT	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
10 651501606-0010	BASEMENT WALLS - DRYWALL JOINT COMPOUND	Beige Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
11 651501606-0011	ATTIC SPACE - VERMICULITE	Brown/Gray/Gold Fibrous Homogeneous		0% Non-fibrous (other) 100% Vermiculite	<1% Tremolite
12 651501606-0012	ATTIC SPACE - VERMICULITE	Brown/Gray/Gold Fibrous Homogeneous		0% Non-fibrous (other) 100% Vermiculite	<1% Tremolite

Analyst(s)

Brett Olsen (16)

Jefferson Salvador, Laboratory Manager
 or other approved signatory

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Phone: (403) 243-0700
Fax:
Received: 06/02/15 9:00 AM
Analysis Date: 6/2/2015
Collected: 5/29/2015

Project: 25055 TWP 253A / 966BB - 15 - 001

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
13	ATTIC SPACE -	Brown/Gray/Gold		0% Non-fibrous (other)	<1% Actinolite
651501606-0013	VERMICULITE	Fibrous		100% Vermiculite	
		Homogeneous			

Analyst(s)

Brett Olsen (16)

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or other approved signatory

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Samples analyzed by EMSL Canada Inc. Calgary, AB

Initial report from 06/03/2015 08:31:33



ASBESTOS ANALYSIS REPORT

Client: Jeremy Stepper (Maxima Developments)	Date: September 4, 2015 Date Submitted: September 2, 2015
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Project Name: 25055 – Township Road 253A, Project Number: 966BB-15-001

ANALYSIS RESULTS

Reference Number	Sample Description / Location	Asbestos Type and Percent
1	Duct Paper / Inside Duct Boot	Chrysotile 60%

Comments:

Sample collection & identification provided by EHS Partnerships Ltd.

ANALYTICAL PARAMETERS:

Method Used: Polarized light microscopy using dispersion staining (EPA/600/R-93/116).

Analysis performed by: EMSL Canada Lab.

Appendix H

Regulatory Agency Correspondence

ENVIRONMENTAL LAW CENTRE

#410, 10115 - 100A Street, Edmonton, AB T5J 2W2

Phone: (780) 424-5099 Fax: (780) 424-5133

Internet: www.elc.ab.ca E-Mail: elc@elc.ab.ca

February 8, 2017

Our File: 111770

Ms. Cearra Stott
GHD Limited
3445, 114th Avenue SE Suite 205
Calgary, AB T2Z 0K6

Dear Ms. Stott:

RE: Search Requested - Highfield Land Management

In response to your request of February 8, 2017, we have searched the Environmental Enforcement Historical Search Service database for an exact match with respect to the above request, and can advise that as of today's date, there have been NO enforcement actions issued by Alberta Environment and Parks (AEP) pursuant to the Alberta "Environmental Protection and Enhancement Act" ("EPEA") and its predecessor legislation, the "Hazardous Chemicals Act", "Agricultural Chemicals Act", "Clean Water Act" and "Clean Air Act" to 1971, and/or pursuant to the "Water Act" from 1999 onwards.

This search is limited to the following enforcement actions under EPEA and its predecessor legislation: Tickets, Prosecutions, Administrative Penalties, Warnings, Enforcement Orders, Enforcement Orders Concerning Waste, Environmental Protection Orders, Emergency Environmental Protection Orders, Emission Control Orders, Chemical Control Orders, Water Quality Control Orders and Stop Orders. This search is limited to the following enforcement actions under the Water Act: Prosecutions, Administrative Penalties, Water Management Orders, Warnings and Enforcement Orders. It does not include Clean Up Orders issued under the Litter Act or Environmental Protection Orders respecting unsightly property issued under EPEA; this information may be available from the local municipality.

Enforcement actions are entered in the database following: (1) the decision date, for prosecutions; (2) the date an administrative penalty was paid or due (30 days after issuance), whichever is sooner; and (3) the date the document was issued for all other enforcement actions.

These search results are based on information provided by AEP. AEP advises that they try to provide the best information possible. However, AEP advises that it cannot guarantee that the information provided is complete or accurate and that any person relying on these search results does so at their own risk. More information may be gained by referring to original enforcement documents. Alberta Energy Regulator (AER) enforcement actions are not included (see the AER Public Compliance dashboard database).

Copies of orders are available from the Environmental Law Centre. Any other enforcement information may be available directly from Alberta Environment.

Yours sincerely,



Cindy Dewing
Enforcement Search Service
Encl.