Site Assessment

Public Road 584
North of Roblin, Manitoba

Prepared for:

Red River Mutual
245 Centre Street
Altona, MB R0G 0B0

Attn: Jason Lang, CD, HAAG
Claims Specialist

March 19, 2020

Pinchin File: 266647

Issued To:	**Red River Mutual**
Contact:	**Jason Lang, CD, HAAG Claims Specialist**
Issued On:	**March 19, 2020**
Pinchin File:	**266647**
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EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed, Limitation of Liability and Terms of Engagement signed by Jason Lang, CD, HAAG of Red River Mutual (Client) to conduct a Site Assessment at a diesel spill location on Public Road 584 north of Roblin, Manitoba (hereafter referred to as the Site).

It is Pinchin's understanding that the Site Assessment and Soil Sampling Program is required for insurance purposes and prior to completing a Remedial Plan to be submitted to Manitoba Conservation and Climate for approval.

According to the Client, a roll over incident occurred with an agricultural tractor and grain cart on September 17, 2019 on Public Road 584 approximately 25 kilometres north of Roblin, Manitoba. Manitoba Conservation and Climate conducted a site inspection on October 21, 2019 and observed diesel staining on the roadway as well as damage to the side of the hill. Vehicle parts were also observed hanging in the trees. It was also reported that spilled grain impacted with diesel fuel was removed from the Site on October 18, 2019.

The Site Assessment was completed at the Site by Pinchin on December 3, 2019. Due to frozen soil conditions and the inability to access the Site with powered mobile equipment, soil samples could not be collected at the time of the assessment. Olfactory detection of diesel impacted grain was observed during the Site Assessment. Pinchin also collected GPS data points of the Site during the Site Assessment to determine what, if any, remedial activities could be completed during the winter months when ground conditions were frozen.

Pinchin contacted T&C Trenching and Excavation (T&C) of Roblin Manitoba, who was one of the contractors at the Site to assist initial clean up activities, to determine if the Site could be accessed with mobile powered equipment. Based on the conversation with T&C, it was deemed unsafe to access the Site with mobile powered equipment due to the remote location and steep slope to the location of the potential release. Pinchin also contacted Rakowski Cartage and Wrecking Ltd. (Rakowski) about potentially completing the soil sampling program with a long-reach demolition excavator. Rakowski stated that their machines are designed to dig upwards and that completing soil sampling at the Site would not be feasible.

Based on the observations collected during the Site Assessment , it is Pinchin's opinion that the Site should be reassessed once ground conditions have thawed during the spring months. Based on a conversation with T&C, it was deemed it may be possible to winch a mini-excavator or skid steer to the potentially impacted area to complete any remedial efforts when ground conditions have thawed and that snow cover has been melted. Otherwise, it may be required to hand dig any potentially impacted soil at the Site.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.

TABLE OF CONTENTS

APPENDICES

FIGURES

1.0 INTRODUCTION

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed, Limitation of Liability and Terms of Engagement signed by Jason Lang, CD, HAAG of Red River Mutual (Client) to conduct a Site Assessment at a diesel spill location on Public Road 584 north of Roblin, Manitoba (hereafter referred to as the Site). The Site location is shown on Figure 1 and the Site Plan is shown on Figure 2 (all Figures are provided in Appendix I).

The Site is natural treed area adjacent to a provincial adjacent road.

It is Pinchin's understanding that the Site Assessment is required for insurance purposes and prior to completing a Remedial Plan to be submitted to Manitoba Conservation and Climate for approval.

This Site Assessment was completed in general accordance with the Canadian Standards Association document entitled "*Phase II Environmental Site Assessment, CSA S Standard Z769-00 (R2018)*", dated 2000 and reaffirmed in 2018.

1.1 Background

According to the Client, a roll over incident occurred with an agricultural tractor and grain cart on September 17, 2019 on Public Road 584 approximately 25 kilometres north of Roblin, Manitoba. Manitoba Conservation and Climate conducted a site inspection on October 21, 2019 and observed diesel staining on the roadway as well as damage to the side of the hill. Vehicle parts were also observed hanging in the trees. It was also reported that grain impacted with diesel fuel was removed from the Site on October 18, 2019.

1.2 Scope of Work

The scope of work completed by Pinchin, as outlined in the Pinchin proposal entitled "*Proposal for Site Assessment and Soil Sampling Program, Public Road 584, North of Roblin, Manitoba*" submitted to the Client on November 5, 2020, included the following:

- Conduct a Site Assessment of the Site to determine the size of the diesel spill and to determine what equipment would be necessary to conduct any remedial activities;
- Collect near surface soil samples at the Site to assess soil quality, determine the size of the spill area, and to provide information on Site-specific geological characteristics. Each soil sample will be collected at a maximum depth of 0.15 metres below ground surface;

- Field screen soil samples for visual and olfactory evidence of impacts and for the presence of petroleum/volatile organic compound (VOC)-derived vapours using a combustible gas indicator (CGI) calibrated to hexane and a photo-ionization detector (PID) calibrated to isobutylene or equivalent. A combination of visual and olfactory observations and CGI/PID organic vapour readings will be utilized to identify the most apparent “worst-case” soil samples for laboratory analysis;
- Submit up to six most-apparent “worst case” soil samples, based on the field screening methodologies, for laboratory analysis of a combination of petroleum hydrocarbons (PHCs) in the F1 to F4 fraction ranges (F1-F4), benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX), and polycyclic aromatic hydrocarbons (PAHs);
- Submit soil samples to Bureau Veritas Laboratories (BV Labs), a laboratory accredited by the Standards Council of Canada and the Canadian Association for Laboratory Accreditation. The soil samples will be submitted on regular (5 to 7 business day) turnaround time;
- Evaluate the soil analytical results by comparison to the applicable regulatory criteria; and
- Prepare a factual report for the Site documenting the findings of the assessment and recommendations (if any) related to subsurface impacts.

Due to frozen soil conditions, soil samples could not be collected at the Site. Also, due to the snow covered ground conditions, the size and extent of any soil impacts could not be determined.

2.0 RESULTS

2.1 Site Assessment

The Site Assessment was completed at the Site by Pinchin on December 3, 2019. Due to frozen soil conditions and the inability to access the Site with powered mobile equipment, soil samples could not be collected at the time of the assessment. Olfactory detection of diesel impacted grain was observed during the Site Assessment. Pinchin also collected Global Positioning System (GPS) data points of the Site with a Trimble R10 GPS rover unit during the Site Assessment to determine what, if any, remedial activities could be completed during the winter months when ground conditions were frozen.

Based on the survey data obtained by Pinchin during the Site Assessment, the potentially impacted area is approximately 9.0 metres vertically below the elevation of the road and at an approximate horizontal distance of 20.0 metres from the side of the road.

Pinchin contacted T&C Trenching and Excavation (T&C) of Roblin Manitoba, who was one of the contractors at the Site to assist initial clean up activities, to determine the Site could be accessed with mobile powered equipment. Based on the conversation with T&C, it was deemed unsafe to access the Site with mobile powered equipment due to the remote location and steep slope to the location of the potential release.

Pinchin also contacted Rakowski Cartage and Wrecking Ltd. (Rakowski) about potentially completing the soil sampling program with a long-reach demolition excavator. Rakowski reported that their machines are designed to dig upwards and that completing soil sampling at the Site would not be feasible.

The Shell River is located approximately 2 kilometres west of the Site. The topography of the Site and surrounding area were observed to slope towards the west. Groundwater flow at the Site is inferred to be towards the west based on the topography of the Site area and the location of the Shell River.

2.2 Headspace Vapour Concentrations

Vapour concentrations measured in the headspace of four grain samples collected during the Site Assessment ranged from 15 parts per million by volume (ppm_v) to a maximum of 51 ppm_v.

2.3 Field Observations

Strong petroleum hydrocarbon like odours were observed in four grain samples collected during the Site Assessment.

3.0 FINDINGS AND CONCLUSIONS

Based on the observations collected during the Site Assessment, it is Pinchin's opinion that the Site should be reassessed once ground conditions have thawed during the spring months. Based on a conversation with T&C, it was deemed it may be possible to winch a mini-excavator or skid steer to the potentially impacted area to complete any remedial efforts when ground conditions have thawed and that snow cover has been melted. Otherwise, it may be required to hand dig any potentially impacted soil at the Site.

4.0 TERMS AND LIMITATIONS

This Site Assessment was performed for Red River Mutual (Client) in order to investigate potential environmental impacts at Public Road 584, North of Roblin, Manitoba (Site). The term recognized environmental condition means the presence or likely presence of any hazardous substance on a property under conditions that indicate an existing release, past release, or a material threat of a release of a hazardous substance into structures on the property or into the ground, groundwater, or surface water of the property. This Site Assessment does not quantify the extent of the current and/or recognized environmental condition or the cost of any remediation.

Conclusions derived are specific to the immediate area of study and cannot be extrapolated extensively away from sample locations. Samples have been analyzed for a limited number of contaminants that are expected to be present at the Site, and the absence of information relating to a specific contaminant does not indicate that it is not present.

No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions on a property. Performance of this Site Assessment to the standards established by Pinchin is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions on the Site and recognizes reasonable limits on time and cost.

This Site Assessment was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site.

This report was prepared for the exclusive use of the Client, subject to the terms, conditions and limitations contained within the duly authorized proposal for this project. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted.

If additional parties require reliance on this report, written authorization from Pinchin will be required. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed. Furthermore, this report should not be construed as legal advice. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law.

Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

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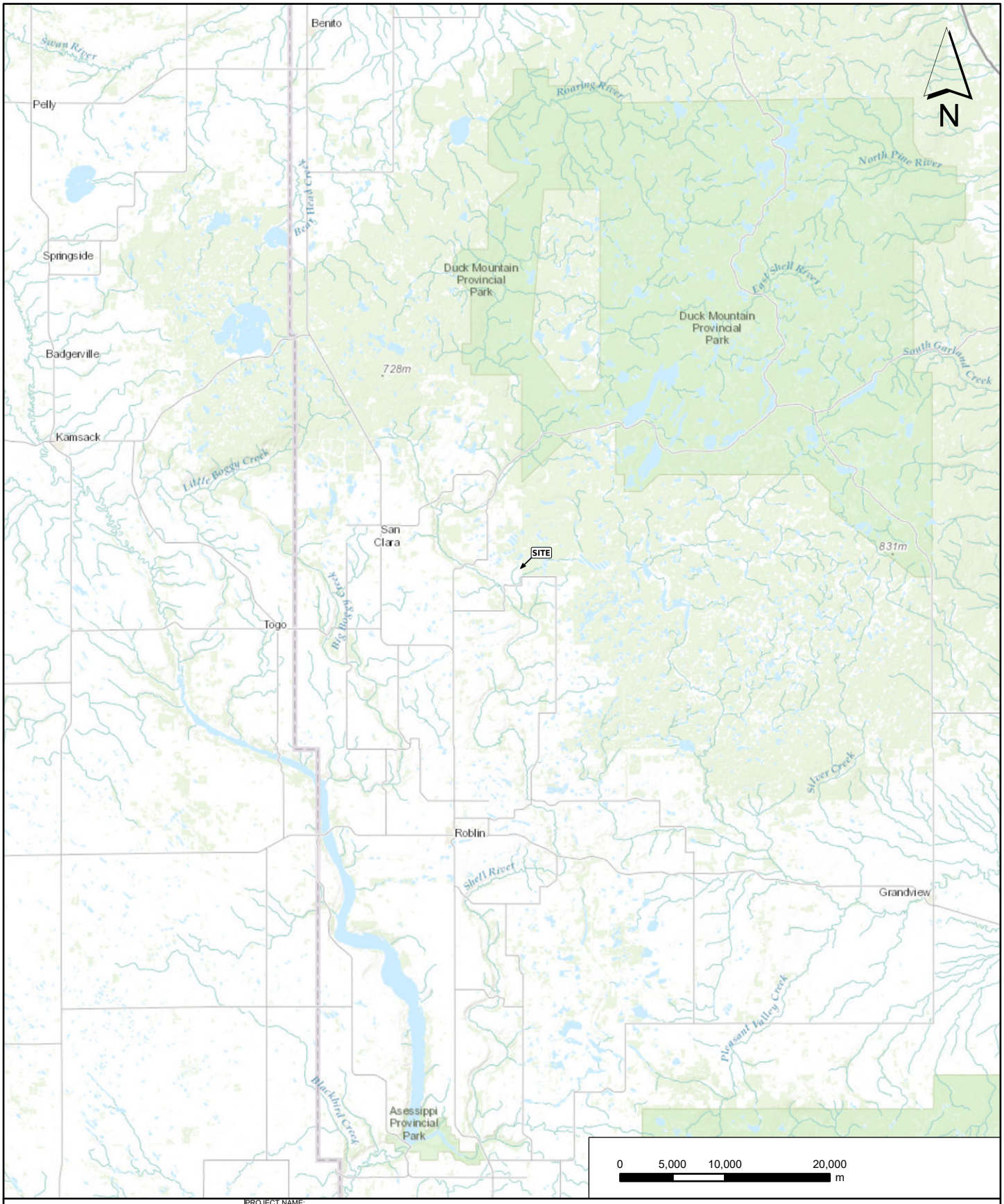
Template: Master Report for Phase II ESA - Stage 2 PSI, EDR, October 29, 2019

APPENDIX I
Figures



PINCHIN

PROJECT NAME:	SITE ASSESSMENT AND SOIL SAMPLING PROGRAM				
CLIENT NAME:	RED RIVER MUTUAL				
PROJECT LOCATION:	PUBLIC ROAD 584, NORTH OF ROBLIN, MANITOBA				
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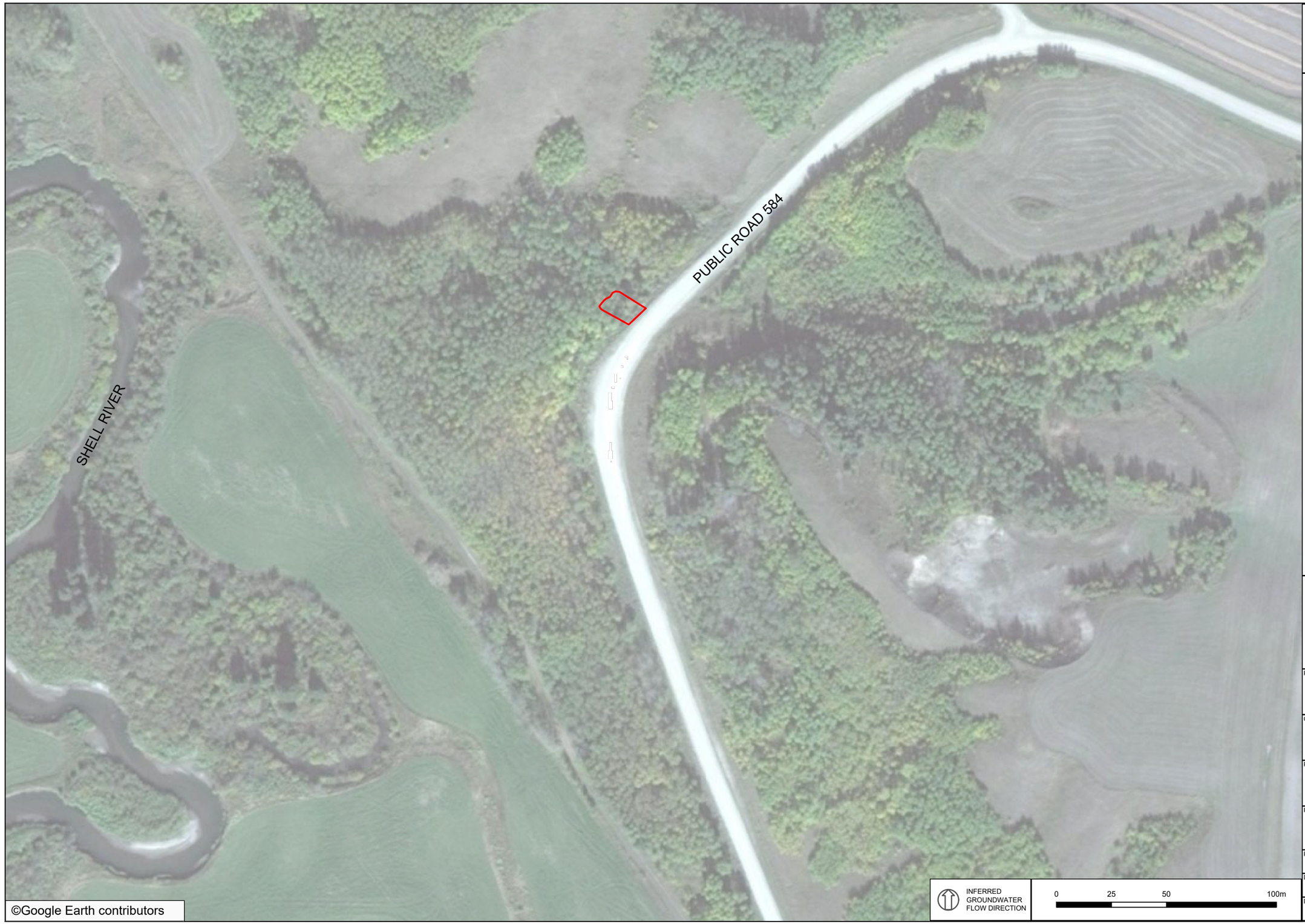
PROJECT NUMBER: 266647	SCALE: 1:800,000	DRAWN BY: KP	REVIEWED BY: GEE	DATE: JANUARY 2020	



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LEGEND

SPILL AREA

LEGEND IS COLOUR DEPENDENT.
NON-COLOUR COPIES MAY ALTER

INFERRED GROUNDWATER FLOW DIRECTION

0 25 50 100m

PINCHIN

PROJECT NAME:
SITE INSPECTION AND SOIL SAMPLING PROGRAM

CLIENT NAME:
RED RIVER MUTUAL

PROJECT LOCATION:
PUBLIC ROAD 584, NORTH OF ROBLIN, MANITOBA

FIGURE NAME:
SITE PLAN

PROJECT NUMBER:	SCALE:
266647	AS SHOWN
DRAWN BY:	REVIEWED BY:
KP	GEE
DATE:	FIGURE NUMBER:
JANUARY 2020	2