GroundTruth Exploration

2019

Assessment Report:

UAV Aerial Photogrammetry Survey

Ophir Creek
One Mile Placer Lease

Placer Lease: ID01664
Tenure Holder: H. Michael Heisey 100%

Dawson Mining District

NTS: 115O/14
Latitude: **63° 50.80' N** Longitude: **-139° 17.89' W**

All Work Performed On: April 9, 2019
Date of Report: April 15, 2019
AUTHOR OF REPORT: Isaac Fage

Table of Contents

1 Introduction

GroundTruth Exploration Inc. conducted an aerial drone survey on the One-Mile Ophir Creek placer lease held by H. Michael Heisey, ID01664. The full extent of the lease was imaged with high resolution imagery and topography to establish exploration targets and plan a follow up program.

All work was undertaken by GroundTruth Exploration Inc.

Photo of Ophir lease looking upstream to the North west, April 9/19.

2 Location and Access

Placer lease ID01664 consists of the one-mile lease at the top of Ophir Creek, with the rest of the creek already converted to claims. The lease area can be accessed by seasonal trail from Grand Forks. The UAV survey conducted in this report accessed the lease by helicopter.

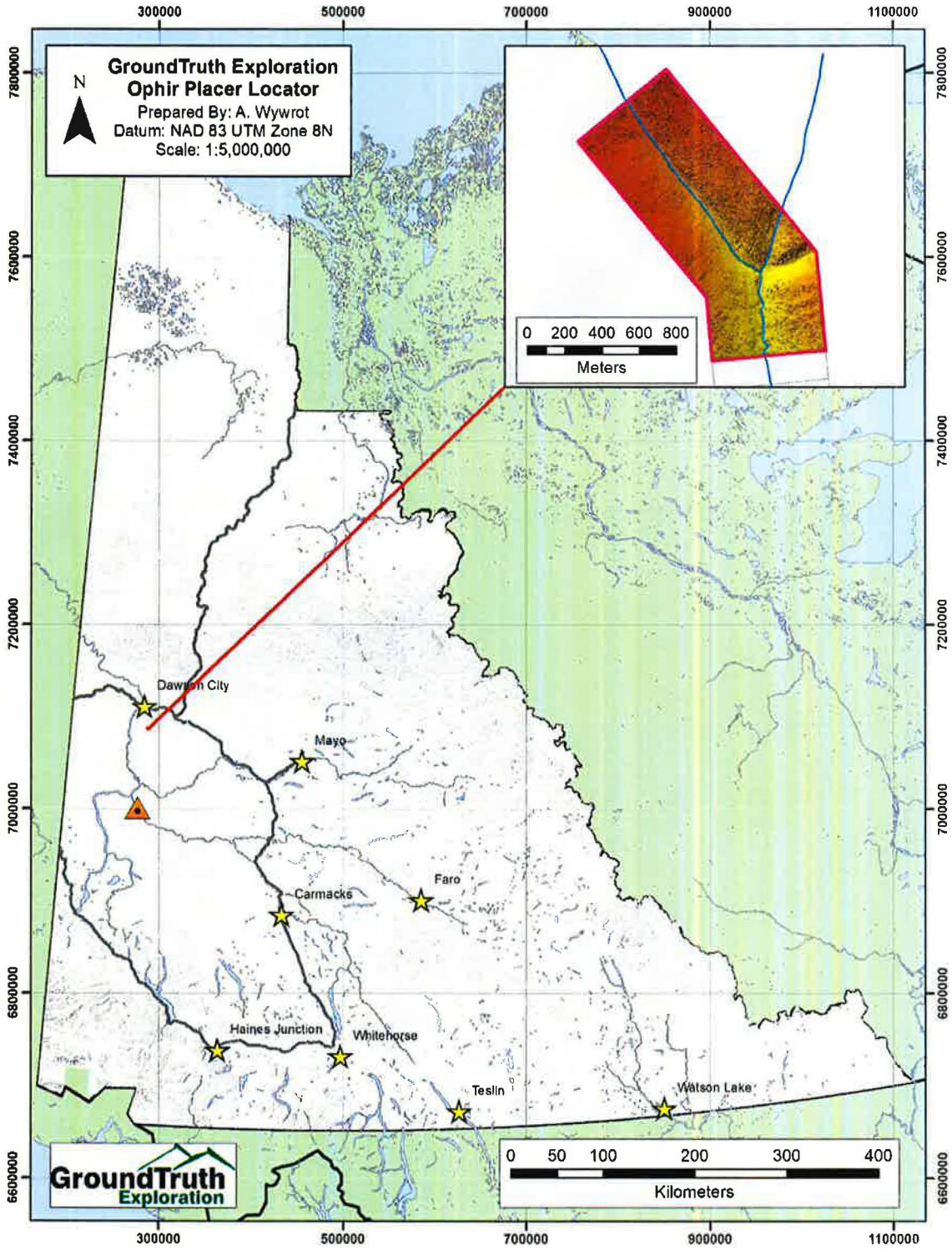
3 Physiography

The lease is located in an unglaciated zone in the Klondike Plateau region of Canada's Boreal Cordillera ecozone. Due to its location in Canada's discontinuous permafrost zone, permafrost is distributed unevenly throughout the property. The valley bottoms and northern slopes have thick moss mats, black spruce, and paper birch over ice rich permafrost, while southern slopes are generally more sparsely vegetated with ground leaf cover and white spruce, aspen and lodgepole pine forests.

4 Climate

The interior intermontane plateau receives about 400 mm of annual precipitation. Snowfall accounts for 35 to 60% of all precipitation. Winters are long and cold, with January mean temperatures between -15°C and -27°C. Summers are warm but short, with July mean temperatures between 12°C and 15°C.

(http://www.emr.gov.yk.ca/oilandgas/pdf/bmp_boreal_cordillera_ecozone.pdf)


GroundTruth Exploration
Ophir Placer Locator
Prepared By: A. Wywrot
Datum: NAD 83 UTM Zone 8N
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N
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Meters
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6600000
Dawson City
Mayo
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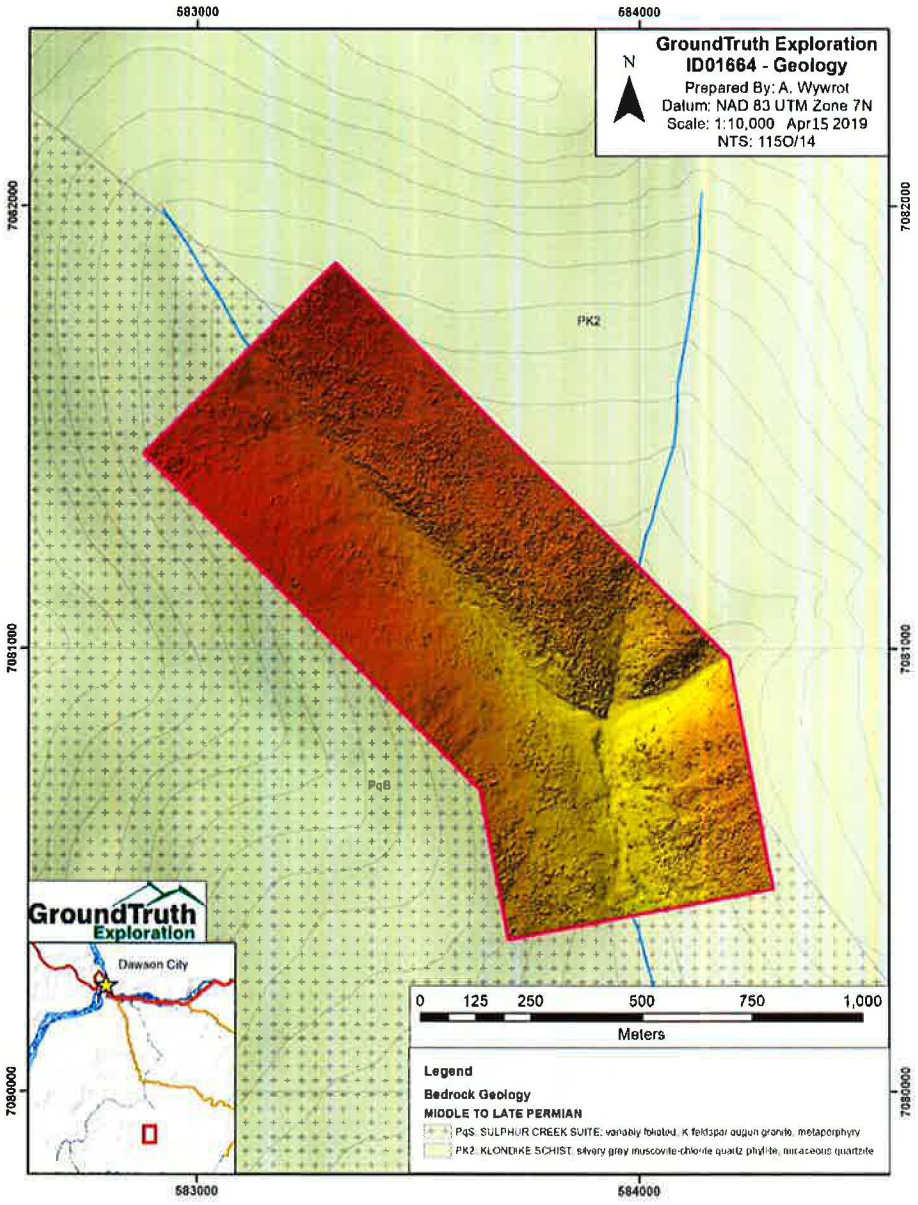
GroundTruth Exploration

5 GEOLOGICAL SETTING



5.1 Geological Description

The Lease is underlain by Permian metamorphic rocks of the Klondike Schist and Sulphur Creek suite. Regionally, they are coded as PK2 and PqS, and are mostly composed of quartz phyllite/schist, and metamorphosed granite and metaporphyry respectively.

6 Work Performed

The 2019 UAV survey consisted of a 1 day survey staffed with a lead UAV operator and assistant UAV operator (spotter). A total of 2 flights were run to cover the lease area.

Photogrammetry: UAV High Resolution Imagery/Elevation Survey

The Drone survey lines and spatial resolution are approved by client prior to survey in accordance with regulations. Typical flight time is approximately 35 minutes per flight and the operator plans accordingly with available time on ground to determine the number of flights possible per day.

6.1.1 Personnel and Equipment

The Drone survey is typically conducted by one trained operator and one spotter. The lead operator is responsible for coordinating efficient operation of survey and ensuring optimal data quality, the spotter is responsible for maintaining visual contact with the drone, monitoring the radio, and looking for flight path conflicts.

The following equipment is used for the completion of the survey:

UAV Drone:	Ebee UAV 'Drone' with internal GPS and radio link
Camera:	Cannon 16 megapixel camera
Base Station:	Panasonic Toughbook laptop with radio link
Power Generation:	1000watt Honda generator (for battery charging)
GPS units:	2x Promark3 GPS receivers (if GCPs are collected)
Radios:	VHF radio with aircraft frequencies
Processing:	Laptop computer with adequate RAM
Software:	EMotion software for flight planning/monitoring
	Postflight Pix4D for image orthorectification

6.1.2 Operating Procedure

The survey is completed in the field according to the following procedure:

- Survey is planned using EMotion software prior to departing for field.
- Spatial resolution, footprint, number of planned flights and launch location is determined.
- Operator arrives onsite and sets up base station, UAV unit and ensures adequate launch and landing path is available.
- Prior to launch, operator calls out on Aircraft frequencies to notify Drone survey in progress. Through duration of survey, operator calls out every 5 minutes to notify aircraft of survey in progress.
- Operator Hand launches aircraft and flies survey as planned with number of required flights and maintains visual contact with the UAV
- Data is downloaded from drone after each flight and inspected for quality.

- After survey, all imagery and drone data files are Orthorectified using Postflight Pix4D software package.

6.1.3 Data Processing

The collected data is downloaded in the field after every flight and checked for integrity. This allows any low quality imagery to be identified and resurveyed while onsite. The drone imagery data is processed every evening by the lead operator in the field using Postflight Pix4D software. The initial orthorectified image product is generated by an automated process. This image is then cleaned up manually within the Postflight software by visually checking for low quality portions of the image and selecting another overlapping image for that location. The final cleaned image and DEM product is the result of this manual QC process. The final Image and DEM are georeferenced to NAD83 UTM projection. A final QC report is generated automatically with the final cleaned product.

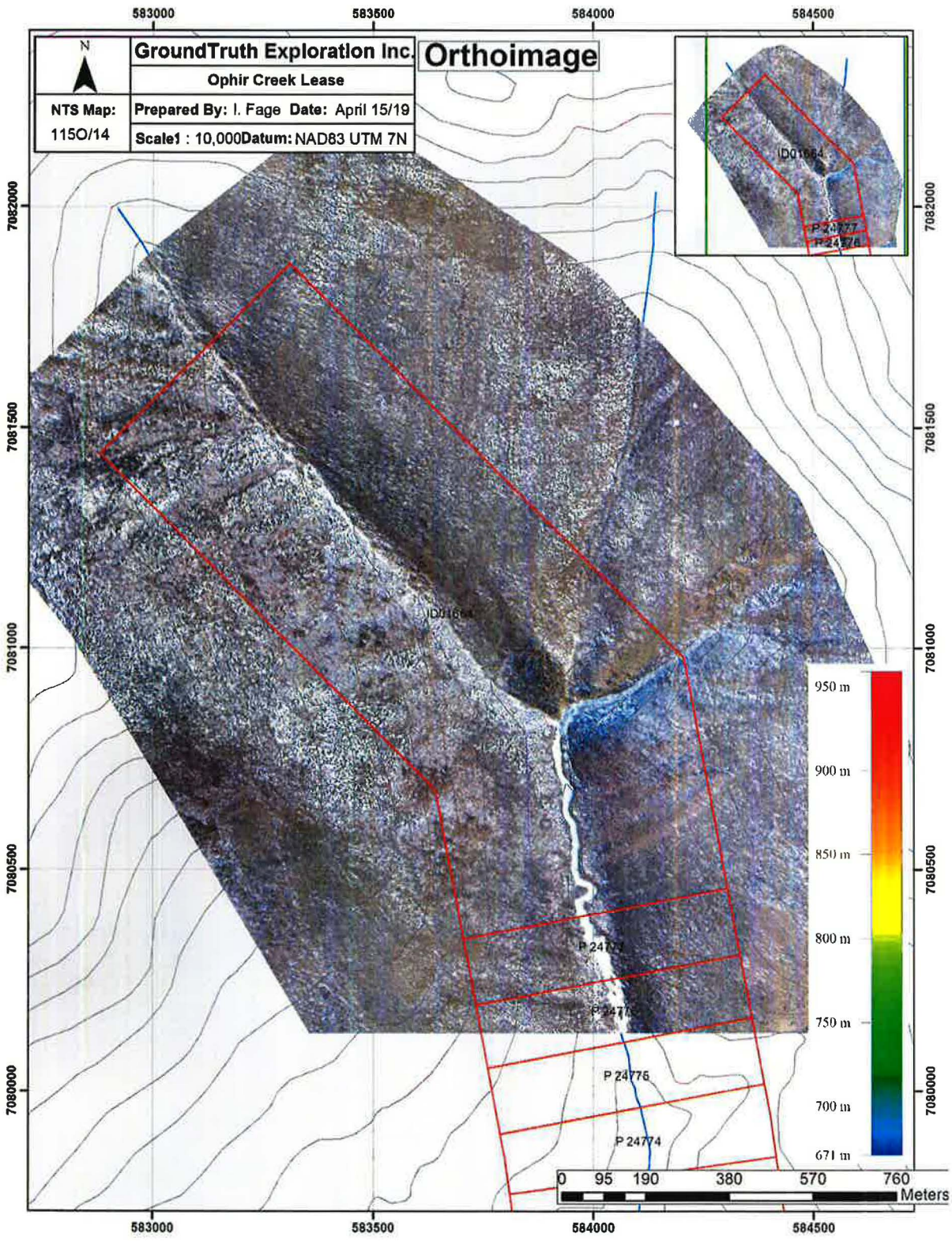
Standard data output:

Imagery:	Georeferenced Orthoimage (geotiff format)
Digital Elevation Model:	Gridded Elevation model (geotiff format)
Automated Quality Report:	Report with survey statistics (.pdf format)

Discussion:

The UAV survey produced high resolution imagery/topography which allows precicse measurements of true valley floor width and margins from creek drainage. Future access and planning of exploration work locations will be planned from this dataset.

On the lease, the valley below creek junctions is significantly wider and flattens out in slope. It is interpreted that this zone is more prospective for volume of pay gravels. Above the junction, the creek becomes deeply incised and steeper slope. Topographically on the margins, no significant placer benches are interpreted to be present.


GroundTruth Exploration Inc.
Orthoimage
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583000
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584500
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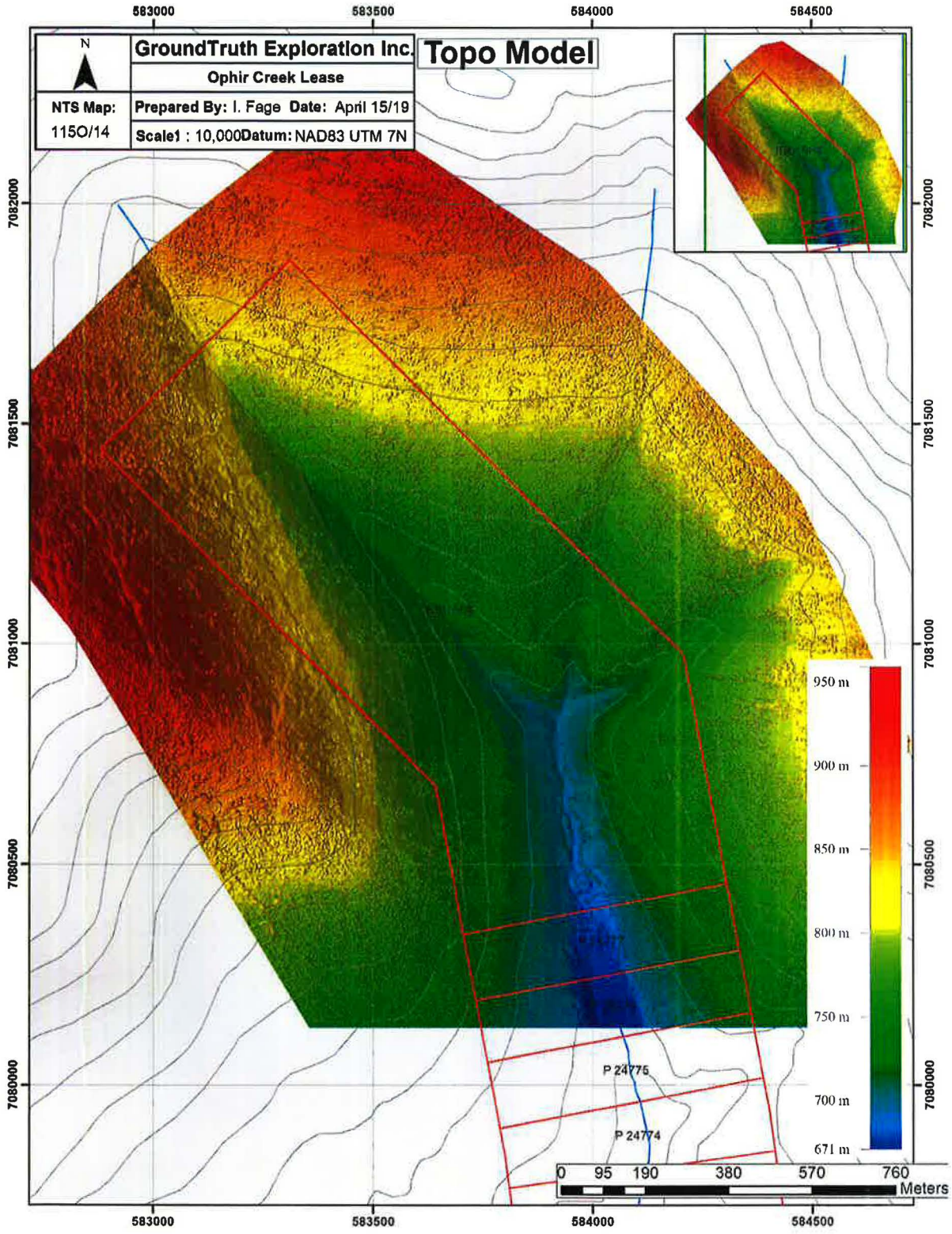
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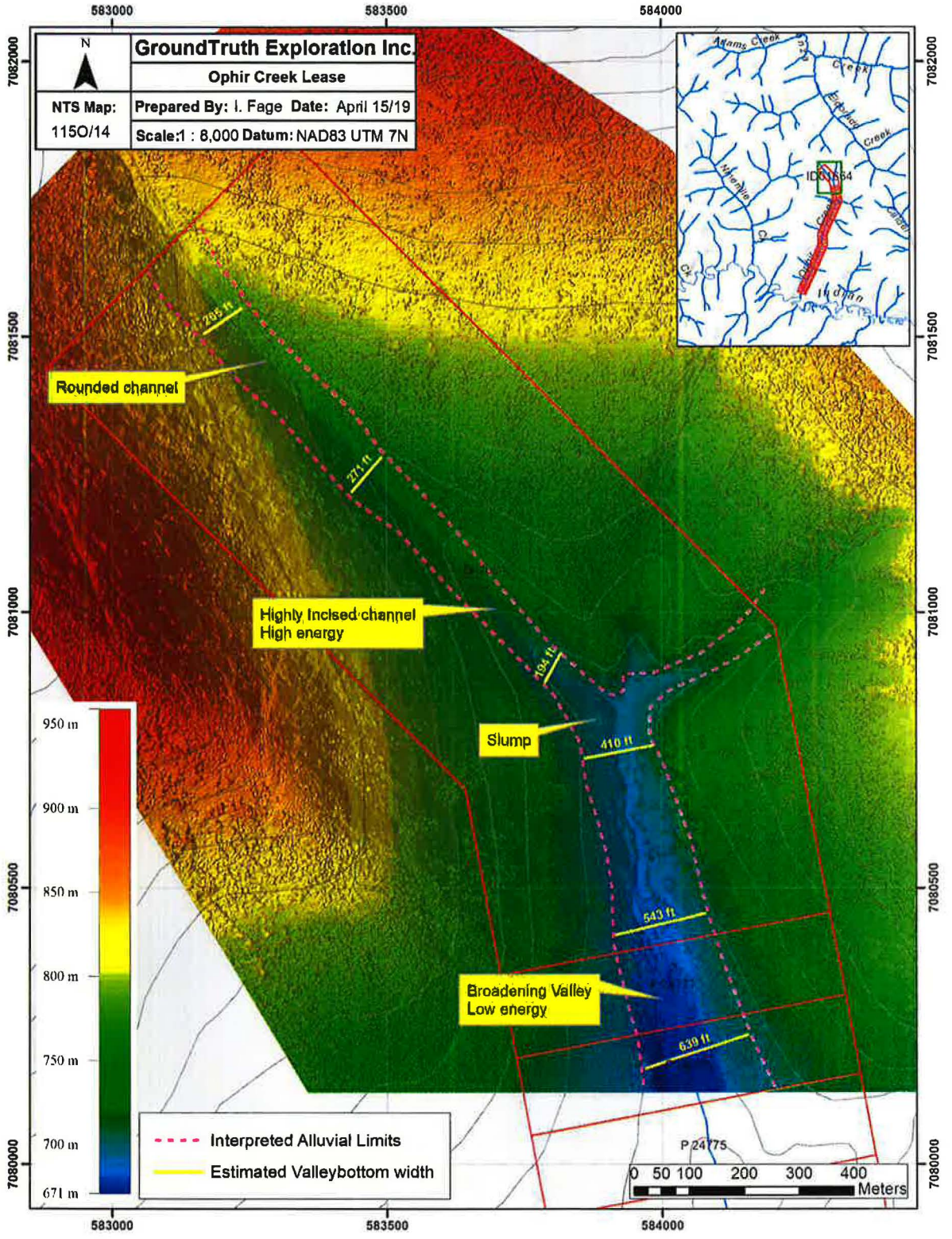
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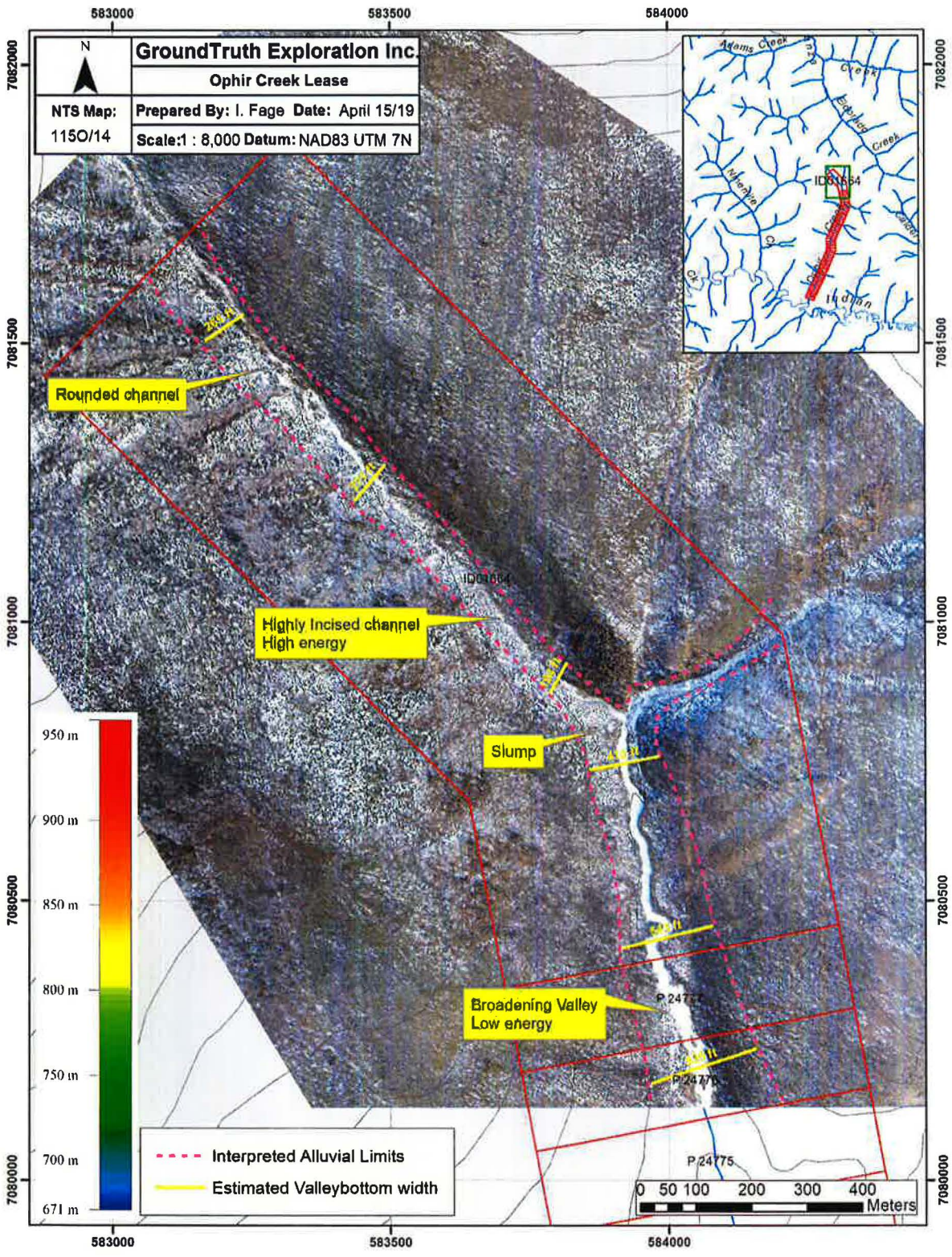
GroundTruth Exploration Inc.
Ophir Creek Lease
NTS Map: 115O/14
Prepared By: I. Fage Date: April 15/19
Scale:1 : 8,000 Datum: NAD83 UTM 7N
Adams Creek
Creek
Creek
Creek
Ophir
Indian
Rounded channel
285 ft
271 ft
Highly Incised channel
High energy
394 ft
Slump
410 ft
543 ft
Broadening Valley
Low energy
639 ft
950 m
900 m
850 m
800 m
750 m
700 m
671 m
Interpreted Alluvial Limits
Estimated Valleybottom width
P 24775
0 50 100 200 300 400
Meters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Rounded channel
Highly Incised channel
High energy
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ID041654
P.24775
950 m
900 m
850 m
800 m
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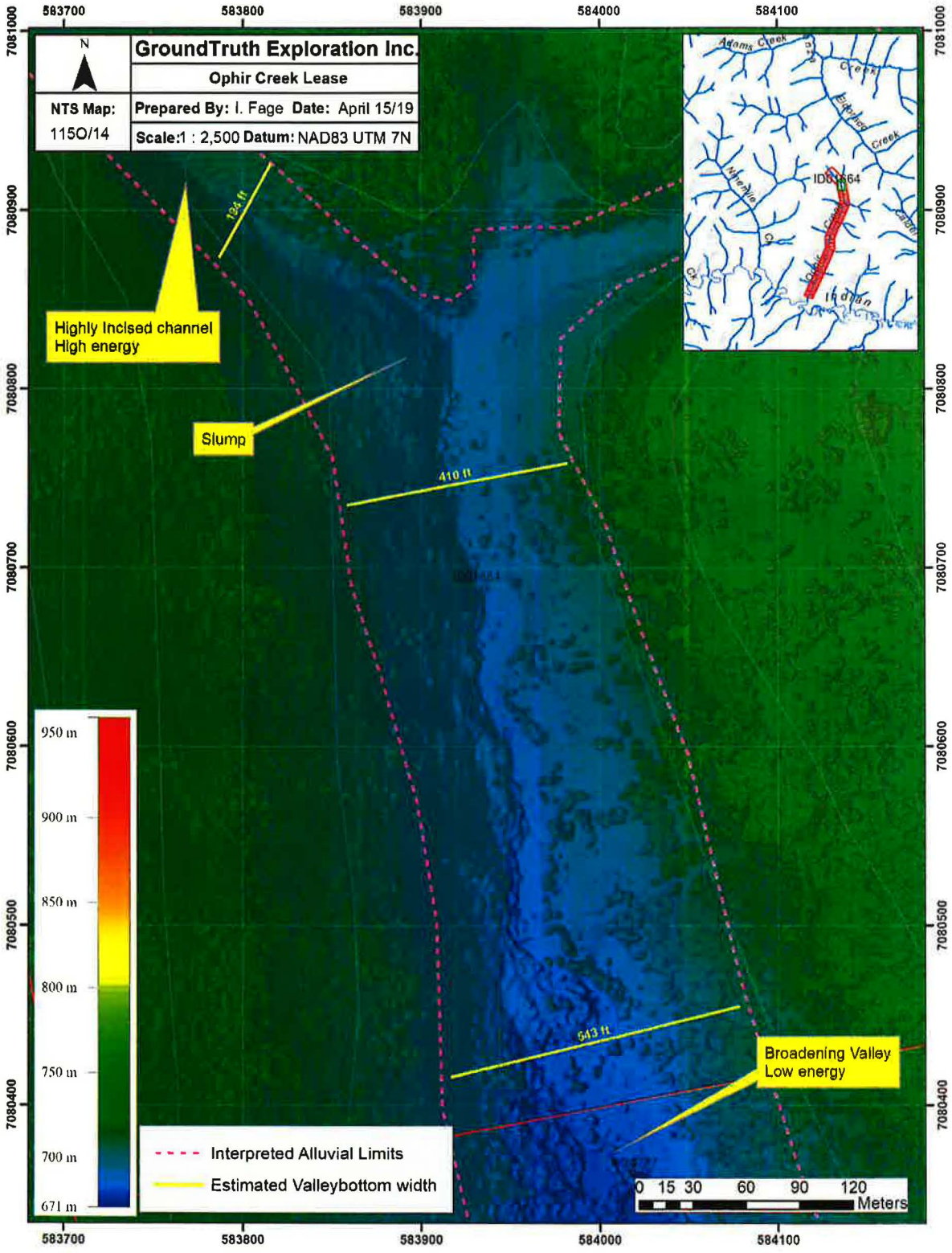
Meters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GroundTruth Exploration Inc.
Ophir Creek Lease
NTS Map: 115O/14
Prepared By: I. Fage Date: April 15/19
Scale:1 : 2,500 Datum: NAD83 UTM 7N
Highly Incised channel
High energy
Slump
410 ft
543 ft
Broadening Valley
Low energy
950 m
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850 m
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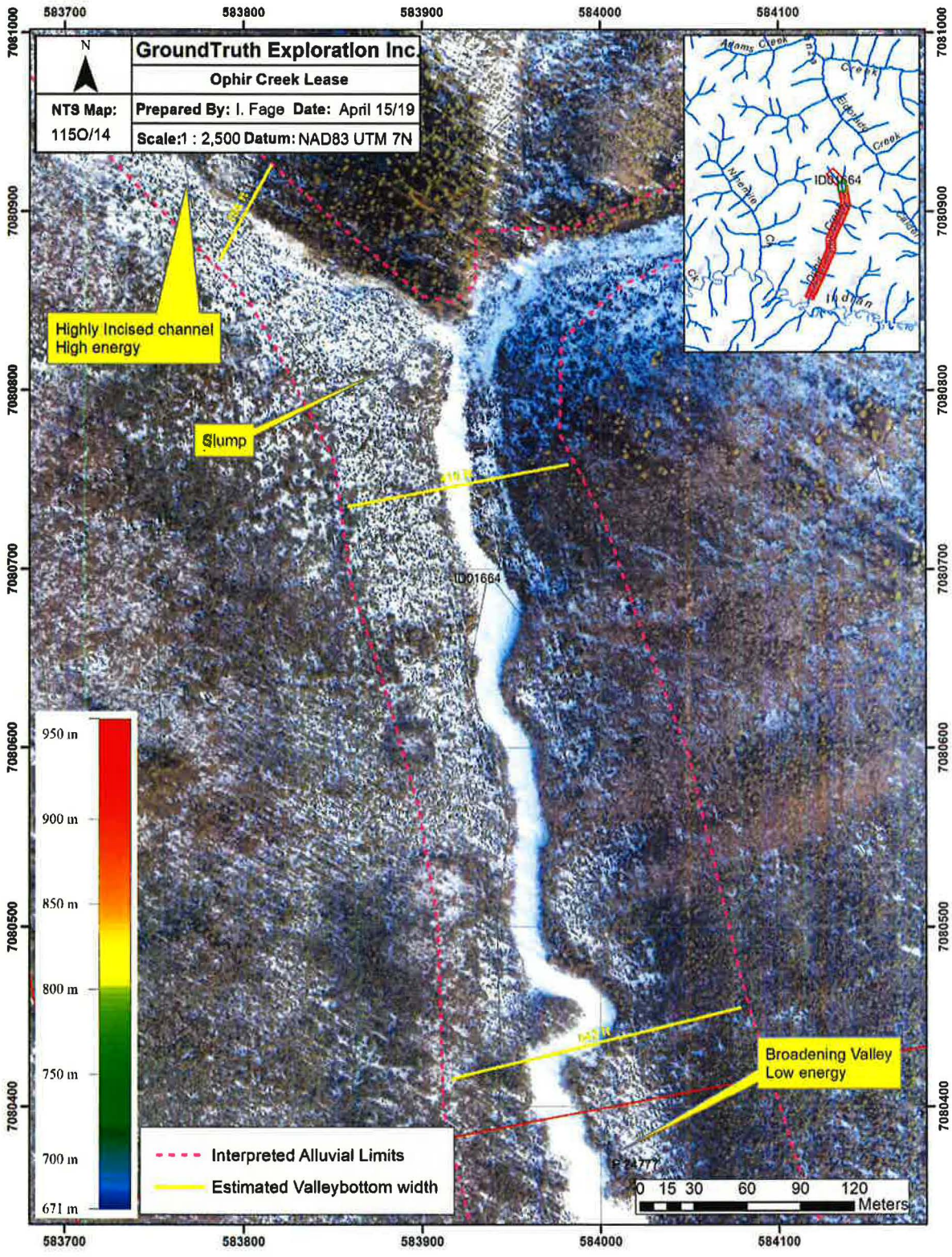
750 m
700 m
671 m
Interpreted Alluvial Limits
Estimated Valleybottom width
0 15 30 60 90 120
Meters
Adams Creek
Eureka Creek
Hilarita Creek
Indian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Interpreted Alluvial Limits
Estimated Valleybottom width
0 15 30 60 90 120
Meters
Adams Creek
Eureka Creek
Nugget Creek
Ophir Creek
Indian

6.1.4 Conclusion and Recommendations

Further exploration work is required to evaluate the prospectivity of the lease on Ophir Placer lease ID01664. It is recommended that a light geophysical survey such as DC Resistivity be conducted to evaluate potential depth and volumes of pay gravels in the wider areas of the creek's valley. The knuckle at the southern end of the creek and the broader section noted to the northeast both represent areas that show major changes to water flow within the creek and could have impact on the emplacement of economic placer gravels. Geophysical surveys should be followed up by means of drilling or test pits. Additional work is at the discretion of the property owner.

7 Statement of Costs

UAV Survey conducted on: April 9th, 2019

Report Written on: April 15, 2019

UAV Drone Survey Invoice: Ophir Creek Lease ID01664

Overview:		
A UAV Survey consisting of 2 flights x 30 minutes on Upper Ophir Creek Lease ID01664 was conducted on April 9, 2019		
	Invoice#:	
	GT-OPH2019-01	
Deliverables: 1 .Orthorectified Image (.geotiff, .ecw), 2. Digital Elevation Model (.geotiff, .grd) 3. Tiled Imagery for Google Earth™ (.kml) 4. Assessment Report (.pdf)		
Drone Acquisition/Report Cost Breakdown:		
Wages:		
1 UAV Drone Operator * $550/day + 1 Assistant $400 (1/2 Day)	$	450.00
Survey Equipment:		
UAV Drone with Base Station * $600 (1/2 Day)	$	300.00
Data Management and Processing Services		
Imagery Processing and Final Report - $250	$	*250.00*
	Total Invoice:	***$ 1,000.00***

I. Fage, April 15/19

8 References

Regional Geology: Gordey, S.P. and Makepeace, A.J. (comp.) 1999: Yukon bedrock geology in Yukon digital geology, S.P. Gordey and A.J. Makepeace (comp.); Geological Survey of Canada Open File D3826 and Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-1(D)

Mineral Titles: Yukon Mining Recorder, Mining Claims Database – www.yukonminingrecorder.ca

Topographic data: NR Canada, CanVec Topographic Database- www.geogratis.ca

Additional review of various published scientific and reporting papers on the geology and mineral deposits of the region for indirect reference.

9 Qualification

I, Isaac Fage have been president of GroundTruth Exploration in Dawson City since May 2010. I have worked continuously in Mineral Exploration since 2004. I hold an advanced diploma in Remote Sensing from the Centre of Geographic Sciences in Lawrencetown, Nova Scotia.

I have overseen the survey work described in this report on Placer Leases ID01664 at Ophir placer.

Dated this 15th day of April, 2019, in Dawson City, YT.

Respectfully submitted,

Isaac Fage