

TUYA ENERGY INC.

ASSESSMENT REPORT
TUYA RIVER COAL PROJECT
2012-2013 EXPLORATION PROGRAM
(for the period January 2012 to January 2015)

British Columbia
Coal Licenses:

390659, 390660, 390661, 416816, and 416817

Owner and Operator: Tuya Energy Inc.

Author: John H. Perry, P.Geo.

January, 2015

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COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: **Assessment Report – Tuya River Coal Project – 2012-2013 Exploration Program (for the period January 2012 to January 2015)**

TOTAL COST: \$ 320,600

AUTHOR(S): **John H. Perry, P.Geol.**

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): **CX-1-002 / March 31, 2017**

YEAR OF WORK: **2012 and 2013**

PROPERTY NAME: **Tuya River Coal Project**

COAL LICENSE(S) AND/OR LEASES ON WHICH PHYSICAL WORK WAS DONE:
390659, 390660, 390661, 416816, 416817

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: **Unknown**

MINING DIVISION: **Liard**

NTS / BCGS: **104J-07B, 104J-07C, 104J-02J, 104J-02K**

LATITUDE: **58° 16' 27.49"**

LONGITUDE: **130° 48' 55.32" (at centre of work)**

UTM Zone: **9** EASTING: **393,524.93** NORTHING: **6,460,684.86**

OWNER(S): **Tuya Energy Inc.**

MAILING ADDRESS: **200-595 Howe St., Vancouver, BC, V6C 2T5**

OPERATOR(S) [who paid for the work]: **Tuya Energy Inc.**

MAILING ADDRESS: **200-595 Howe St., Vancouver, BC, V6C 2T5**

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. Do not use abbreviations or codes): **TR Target Area, Thundercloud Deposit, Stikine Plateau, Intermontane Belt, Cordillera, Omineca Crystalline Complex, Coast Crystalline Complex, Sustut Group, Tango Creek Formation, Brothers Peak Formation, Coal, Claystone, Siltstone, Sandstone, Conglomerate, Lignite, Tuffs, Chert, Basalt, Lower Member, Middle Member, Upper Member, Coal Zone 1, Coal Zone 2, Coal Zone 3**

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:
Assessment Report Numbers: 242, 243, 244, 245, 246

| SUMMARY OF TYPES OF WORK IN THIS REPORT | | EXTENT OF WORK (in metric units) | ON WHICH TENURES |
|--|---|-------------------------------------|--|
| GEOLOGICAL (scale area) | | | |
| | Ground, Mapping | | |
| | Photo Interpretation | | |
| GEOLOGICAL (line-kilometres) | | | |
| | Ground (Specify types) | | |
| | Airborne HELITEM Electromagnetic and Magnetic Geophysical Survey | 489.4 km | <u>Coal Licenses:</u> 390659, 390660, 390661, 416816, 416817 <u>Coal License Applications:</u> 417624, 417696, 417825 to 417828, 417830 to 417835, 417837, 417846 to 417856, 417858 to 417860, 418227 |
| | Borehole | | |
| | Gamma, Resistivity | | |
| | Resistivity | | |
| | Caliper | | |
| | Deviation | | |
| | Dip | | |
| | Others (specify) | | |
| | Core | | |
| | Non-Core | | |
| SAMPLING AND ANALYSES | | | |
| Total # of Samples | | | |
| | Proximate | | |
| | Ultimate | | |
| | Petrographic | | |
| | Vitrinite reflectance | | |
| | Coking | | |
| | Wash tests | | |
| PROSPECTING (scale/area) | | | |
| PREPARATORY/PHYSICAL | | | |
| | Line/grid (km) | | |
| | Trench (number, metres) | | |
| | Bulk sample(s) | | |

SECTION 1 INTRODUCTION AND PROPERTY DESCRIPTION

1.1 INTRODUCTION

The Tuya River Coal Project is located in northwestern British Columbia and is situated to cover the northwestern portions of a Tertiary coal basin. The property consists of five coal licenses which cover 2,361 ha and thirty coal license applications covering 9,300 ha, for a total of 11,661 ha.

This report documents coal exploration activities carried out by Tuya Energy Inc. (TEI) on the property between January 16th, 2012 and January 12th 2015. Field activities consisted of HELITEM (electromagnetic and magnetic) airborne geophysical surveys which commenced on December 17th, 2012 and were completed by January 7th 2013. A short helicopter reconnaissance over the property was also carried out on September 30th 2013 by an independent geological consultant, in advance of the preparation of a Technical Report, in accordance with certain requirements associated with NI 43-101, Form 43-101F1; this report is in preparation. During the reporting period no prospecting, drilling, downhole geophysical logging or sample analysis was conducted.

1.2 PROPERTY DESCRIPTION

1.2.1 **Location**

The Tuya River Coal Project is located approximately 1,130 km north-northwest of Vancouver (Figure 1-1). It falls within the Kitimat-Stikine Regional District, and is within the traditional territory of the Tahltan First Nation. The property is situated between the communities of Dease Lake and Telegraph Creek, which are located approximately 50 km to the northeast and approximately 45 km to the southwest, respectively (Figure 1-2). The community of Iskut lies approximately 70 km to the southeast, while the towns of Watson Lake and Stewart are located 230 km to the north-northeast and 265 km south, respectively. The coal licenses and coal license applications are approximately centred on UTM (NAD 83/Zone 9) coordinates 397,650 East and 6,458,400 North. They lie within the Liard Mining District and are located on Coal Titles Reference maps 104J-07B, 104J-07C, 104J-02J, and 104J-02K.

1.2.2 **Physiography**

The property lies within the Northern Plateau Physiographic region which is also referred to as the Stikine Plateau (Church and Rydera, 2006). The Stikine Plateau is an area of subdued topography which rises to the northeast into the Cassiar Mountains and to the southwest into the Coast Mountains. It is divided into a number of sub-plateaus and the property occupies a low area between two of these; namely, the Tanzilla Plateau to the east and Nahlin Plateau to the west (Holland 1976). Drainage on the plateaus is very poor and swampy areas are interspersed with forested areas. However, where significant drainages are present, they are often steeply incised. Elevations range from lows of 500 metres (a.s.l.) in the river gorges to 850 metres (a.s.l.) on the plateau surface. Within the property, the main drainage is the southerly-flowing Tuya River which is fed from the west by Little Tuya River and Mansfield Creek. These three drainages, and especially the lower reaches of Little Tuya River, are marked by incised canyons up to 150 metres in depth. The canyon walls often exhibit significant slumping of poorly consolidated Tertiary sediments. The Tuya River acts as the divide between the Tanzilla and Nahlin Plateaus.

From the property, the Tuya River continues to flow in a southerly direction for 20 km before joining the Stikine River. At the mouth of the Tuya River, the Stikine River flows rapidly through the steep

gorge known as the Grand Canyon of the Stikine. From there the river flows approximately 250 km towards the south-southwest before emptying into the Pacific Ocean.

There is no agriculture of any sort within the property. Wildlife in the area includes grizzly bear, black bear, moose, elk, caribou and deer. There are no salmon in the Tuya River due to a salmon passage barrier at the confluence of the Tuya and Stikine Rivers. Sockeye, Chinook, Coho, Pink and Chum salmon are found in the Stikine River.

The forested areas of the property consist mostly of small diameter (10-30 cm) black spruce, white spruce, sub-alpine fir, aspen, lodgepole pine, scrub willow, and water birch. The timber on most of the property appears to be of little, if any, economic interest. There is no recent evidence of logging within the property.

1.2.3 Accessibility

Road access to the property is provided by a paved two-lane highway (Highway 37) which links Dease Lake to Highway 16 at Kitwanga to the south and then, via Highway 16, to Smithers (southeast) and Terrace (southwest). North of Dease Lake, Highway 37 links with Yukon Highway 1 (the Alaska Highway) just west of Watson Lake. The city of Whitehorse lies west-northwest of this junction. From Dease Lake, access to the property is via the Telegraph Creek Road, an all-weather gravel road that connects Dease Lake to Telegraph Creek, a distance of 108 kilometres. Approximately 50 km southwest of Dease Lake, this road passes through two of the property's coal license applications and, at its closest point (on coal license application 417857), lies approximately 10 km from the centre of the property. Other than this, there is no road access onto the property. Telegraph Creek Road is kept in drivable condition during the summer months. In good weather conditions, it takes roughly 1 hour to drive from Dease Lake to the property.

Dease Lake has a small, instrument-controlled airport. Northern Thunderbird Air flies from Smithers to Dease Lake up to five times a week in the summer and three times a week during spring and fall. There are no scheduled flights to Dease Lake in the winter months (November to April). Smithers, Terrace and Whitehorse are serviced by regularly scheduled flights from Vancouver. A gravel air strip is also located at Telegraph Creek.

Pacific Western Helicopters has a base at the Dease Lake Airport. Access to the property from Dease Lake via helicopter takes approximately 15 minutes.

1.2.4 Climate

The property is in the Northern Plateau Physiographic region which generally has a very cold, subarctic climate resulting from its elevation and the southward penetration of arctic air masses into the area. Within the highlands and mountains that constitute the peripheries of the plateaus, the slopes of the NNW-SSE-trending valleys, have cold cryoboreal to very cold subarctic weather. On the plateaus themselves, and on adjacent uplands, the climate produces an environment in which frost plays an important part in geomorphic processes and soil formation (Young and Alley, 1978).

The Northern and Central Plateaus and Mountains interior region in northwestern BC, which includes Dease Lake, has cold winters and cool summers. Typically, the winters get progressively colder and drier northwards. Summers are short and fairly cool, though the long days partially compensate for these conditions. In Dease Lake, the average maximum temperature in January is -13°C while the overall average temperature is -17.5°C. In July, the average maximum temperature is 19°C and the overall average temperature is 12.6°C. Precipitation, though quite light, is

distributed evenly throughout the year averaging around 422 mm annually, almost half of which occurs mainly as rain from June to September. Throughout the area, coal and mineral exploration programs are typically conducted between June and October, although, winter programs can be carried out where there is road access.

1.2.5 Infrastructure

The Tuya River Coal Property is remotely situated. With respect to large regional centres, the property is located approximately 700 km north-northwest of the city of Prince George and 360 km south-southeast of the Whitehorse (capital city of Yukon Territory). Its location with respect to other nearby towns is given above and is illustrated in Figure 1-1. The major regional centres together with other centres such as Terrace and Smithers are serviced by regularly scheduled flights from Vancouver. The smaller, local communities of Dease Lake, Telegraph Creek, and Iskut are located 50 km northeast, 45 km southwest and 70 km southeast of the property, respectively (Figure 1-2).

At Dease Lake, Highway 37 provides access to Kitwanga 485 km to the south, which is the closest point to the Canadian National rail line that connects to Ridley Coal Terminal at Prince Rupert. The rail distance from Kitwanga to the coal terminal is 245 km (Figure 1-1). At present there is no access to tidal waters by travelling west from the property along the Telegraph Creek Road. Dease Lake has a small, instrument-controlled airport with an asphalt landing strip and a helicopter base; a gravel air strip is also located at Telegraph Creek.

The Port of Stewart which is 265 km south of the property is accessed by taking the Highway 37A turnoff (at Meziadan Lake) from Highway 37 and heading west to the Pacific coast. The Red Chris mine, located approximately 85 km southeast of the property and currently under construction, will use the Port of Stewart to ship mineral concentrate once the mine is operational.

In the late 1960's the British Columbia Government began construction of a rail line that was intended to link Dease Lake to the main CN rail line at Fort St. James. The line was completed as far as Minaret, approximately 280 km southeast of Dease Lake and 290 km northwest of Fort St. James. A further 58 km of rail bed and ties were laid as far north as Chipmunk Creek, before construction stopped in. Between Chipmunk Creek and Dease Lake the grade and bridge structures were left in varying stages of completion. If the rail line is ever completed or extended, it would provide the closest rail access to the property.

The communities of Dease Lake and Telegraph Creek use diesel to generate electricity; currently, there are no power lines in the area of the property. The closest main transmission line to the property is located approximately 150 km to the south, near Bob Quinn Lake, where BC Hydro's 287-kilovolt Northwest Transmission Line terminates.

1.2.6 Local Resources

The area surrounding the property has a long history of gold mining which dates back to the 1860's Stikine Gold Rush and the 1870's Cassiar Gold Rush. The region has also hosted the Cassiar Asbestos Mine in addition to other historical mining and exploration activities for base metals, jade and coal. The majority of local residents work in the mining, logging, guide outfitting, trapping, tourism and service industries. There are also a number of government employees, highway workers, teachers, RCMP, medical staff, and employees of small businesses that live and work in the region.

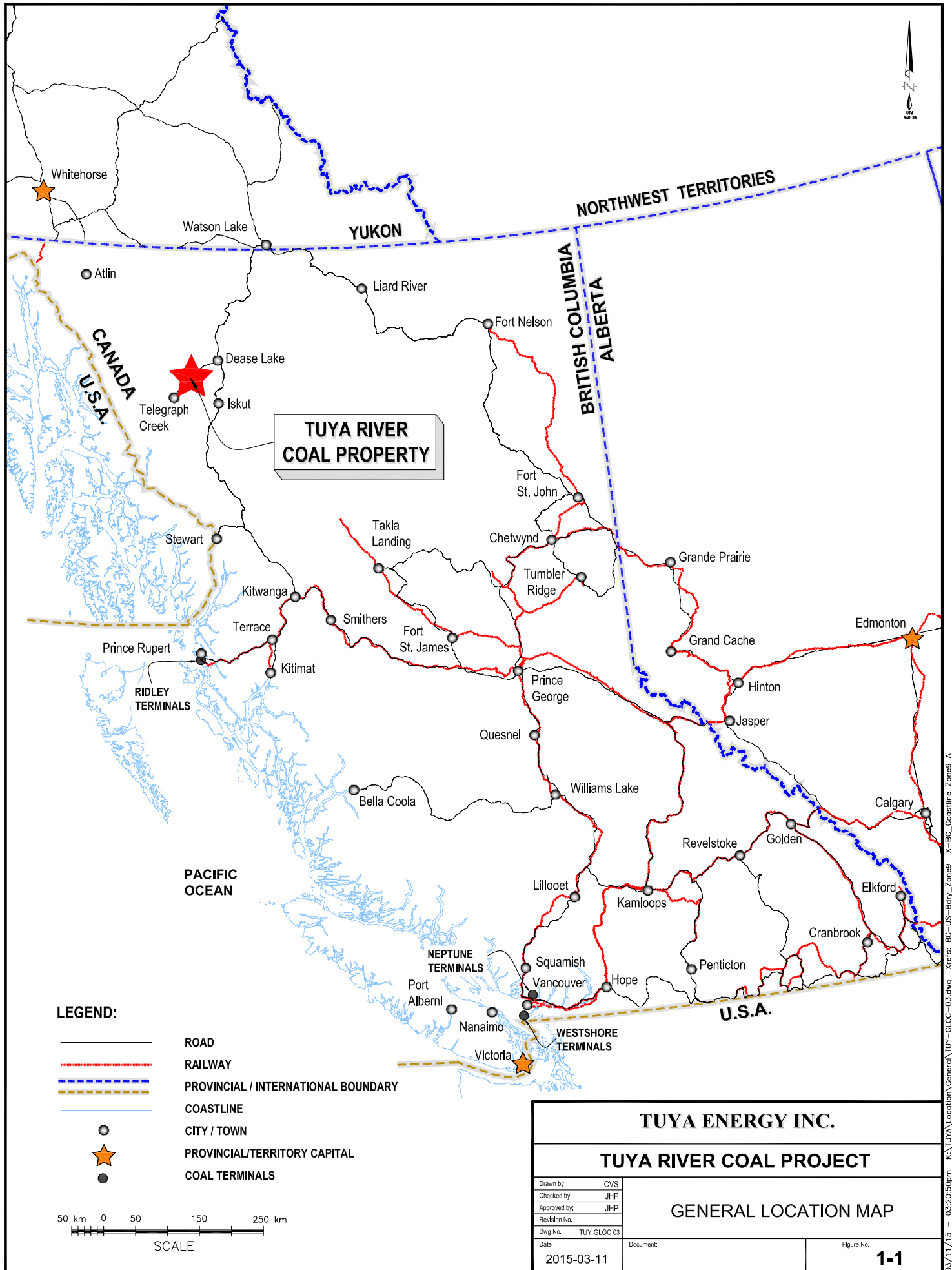
Tuya Energy Inc.

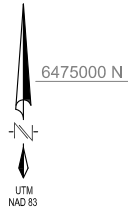
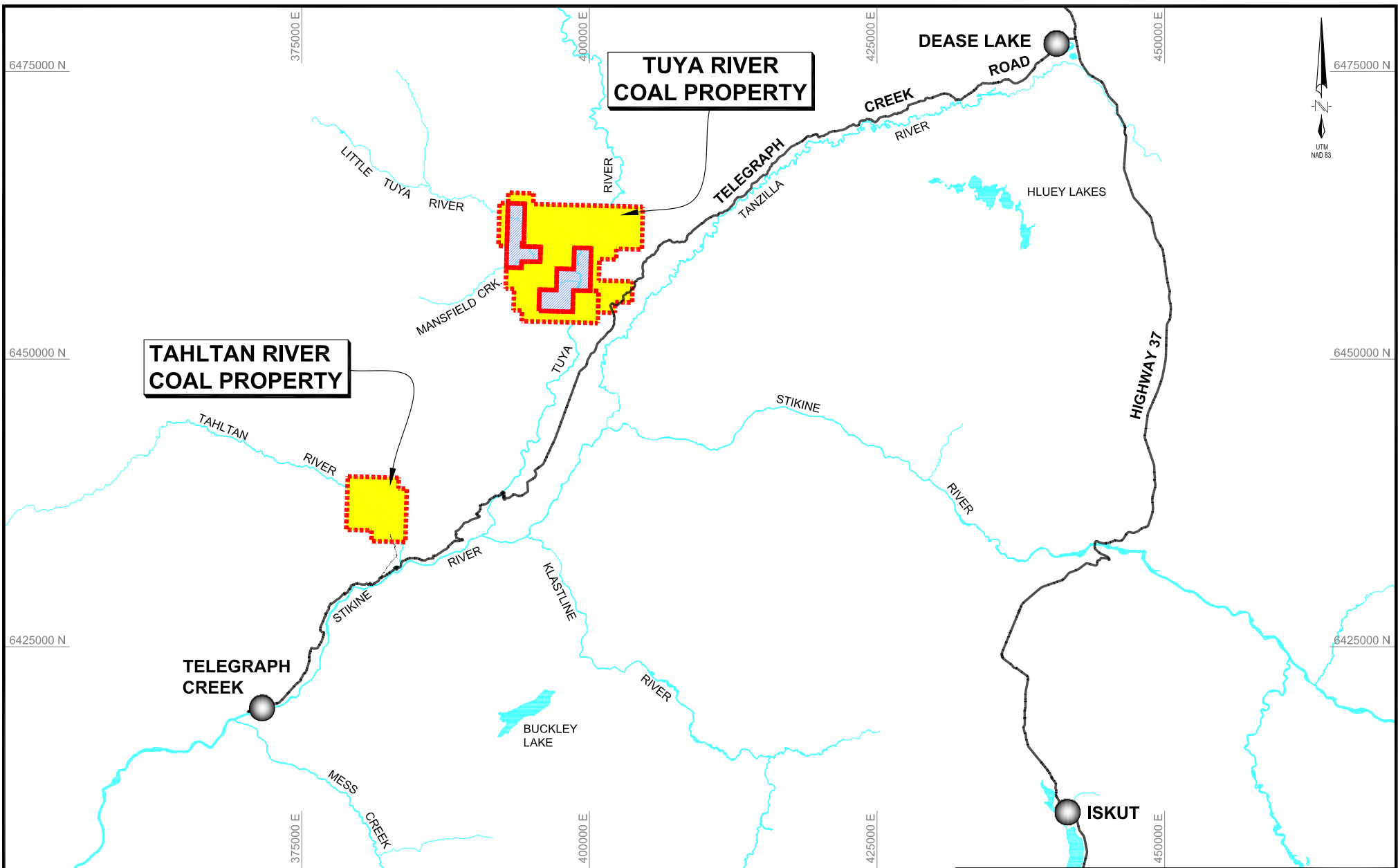
The property is within the traditional territory of the Tahltan First Nations. The Tahltan Nation consists of two bands, the Iskut First Nation and the Tahltan First Nation. The majority of Tahltan in the area reside in three local communities, Dease Lake, Telegraph Creek and Iskut.

The community of Dease Lake has a population of approximately 400. Community amenities include a grocery store, gas station, restaurants, motels, post office, health care centre, bank, government service offices, hardware store, an RCMP station, fire hall, elementary and high schools, and a Northern Lights College campus.

The community of Telegraph Creek has a population of approximately 250 people. Community amenities include a general store, motel, gas station, school and diner.

The community of Iskut has a population of approximately 350. Community amenities include a grocery store, gas station, restaurants, motel, health care centre, and school.





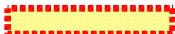
**TAHLTAN RIVER
COAL PROPERTY**

**TUYA RIVER
COAL PROPERTY**

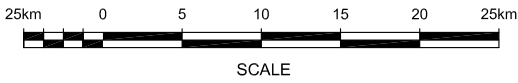
LEGEND:



COAL LICENSE



COAL LICENSE APPLICATION



| | | |
|--------------------------------|------------|------------|
| TUYA ENERGY INC. | | |
| TUYA RIVER COAL PROJECT | | |
| REGIONAL PROPERTY MAP | | |
| Drawn by: | CVS | |
| Checked by: | JHP | |
| Approved by: | JHP | |
| Revision No. | | |
| Dwg No. | TUY-A-RLOC | |
| Date: | 2015-01-21 | Document: |
| | | Figure No. |
| | | 1-2 |

SECTION 2 COAL TENURE AND OWNERSHIP

2.1 TENURE

The Tuya River Coal Property consists of one contiguous block composed of five coal licenses covering 2,361 ha and thirty coal license applications covering 9,300 ha, for an overall total of 11,661 ha. The coal licenses form two separate blocks that are separated by approximately 1500 – 3000 metres. The western block consists of four contiguous coal licenses totalling 998 ha while the eastern block is composed of one coal license covering 1,363 ha. The coal license applications extend beyond, and occupy the ground between, the issued licenses. TEI is the recorded owner of both the coal licenses and coal license applications.

The property lies within the Liard Mining District and is located on Coal Titles Reference maps 104J-07B, 104J-07C, 104J-02J, and 104J-02K. Coal license data and descriptions are summarized in Table 2-1 and the locations of the licenses and areas under application are shown in Figure 2-1.

No legal surveys have been undertaken either as a requirement for, or subsequent to, acquisition of the coal licenses. No search of land title, survey records, or surface rights has been undertaken for this report. However, it may reasonably be expected that the Crown retains surface rights.

Table 2-1: Coal License Information – Tuya River Coal Property

| Coal License No. | Current Owner | Original Owner/Applicant | Area (ha) | NTS Map Series | Expiry Date |
|-----------------------------|------------------|--------------------------|--------------|------------------|-------------|
| 390659 | Tuya Energy Inc. | Mr. E. F. Asp | 246 | 104J-07C | 2015/Nov/06 |
| 390660 | Tuya Energy Inc. | Mr. E. F. Asp | 268 | 104J-07C | 2015/Nov/06 |
| 390661 | Tuya Energy Inc. | Mr. E. F. Asp | 273 | 104J-07C | 2015/Nov/06 |
| 416816 | Tuya Energy Inc. | Mr. H. I. Asp | 1363 | 104J-07B/02J/02K | 2016/Jan/12 |
| 416817 | Tuya Energy Inc. | Mr. H. I. Asp | 211 | 104J-07C | 2016/Jan/12 |
| Total Licensed Area: | | | 2,361 | | |
| Application 417624 | Tuya Energy Inc. | Mr. E. F. Asp | 300 | 104J-02J | |
| Application 417696 | Tuya Energy Inc. | Mr. E. F. Asp | 225 | 104J-07C/02K | |
| Application 417825 | Tuya Energy Inc. | 0811044 BC Ltd | 525 | 104J-07C/02K | |
| Application 417826 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-02K | |
| Application 417827 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-02K | |
| Application 417828 | Tuya Energy Inc. | 0811044 BC Ltd | 450 | 104J-02K | |
| Application 417830 | Tuya Energy Inc. | 0811044 BC Ltd | 375 | 104J-07C | |
| Application 417831 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417832 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417833 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417834 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417835 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417836 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417837 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417846 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07C | |
| Application 417847 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07C | |
| Application 417848 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07C | |
| Application 417849 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07C | |

Tuya Energy Inc.

| | | | | | |
|--------------------------------|------------------|----------------|--------------|----------|--|
| Application 417850 | Tuya Energy Inc. | 0811044 BC Ltd | 375 | 104J-07C | |
| Application 417851 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417852 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417853 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417854 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417855 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-07B | |
| Application 417856 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-02J | |
| Application 417857 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-02J | |
| Application 417858 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-02J | |
| Application 417859 | Tuya Energy Inc. | 0811044 BC Ltd | 225 | 104J-02J | |
| Application 417860 | Tuya Energy Inc. | 0811044 BC Ltd | 300 | 104J-02J | |
| Application 417861 | Tuya Energy Inc. | Mr. J. Shields | 225 | 104J-07C | |
| Total Applied For Area: | | | 9,300 | | |

2.2 OWNERSHIP

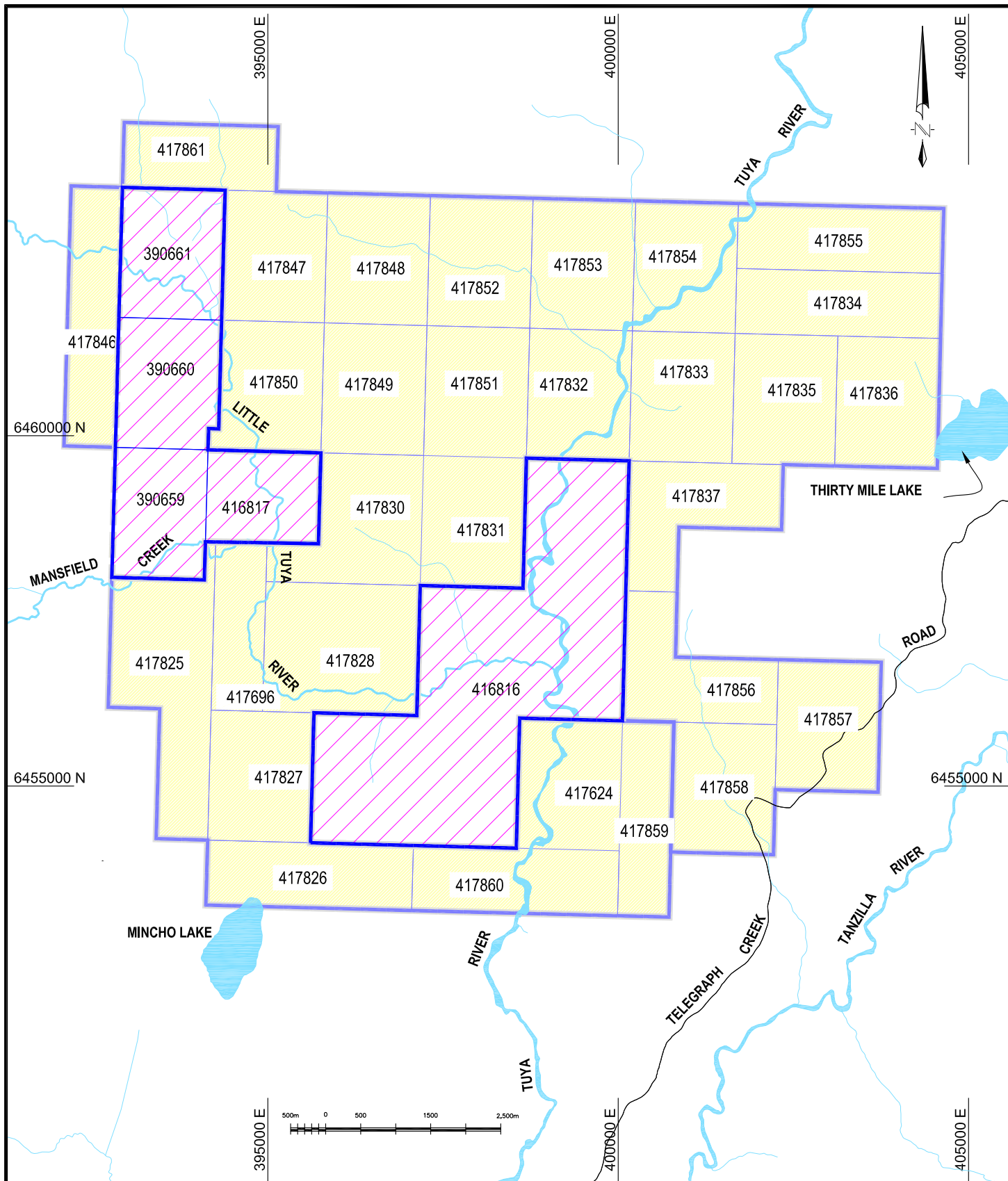
At present both the coal licenses and coal license applications that comprise the Tuya River Coal Property are held by TEI.

Historical acquisition of coal licenses in the project area appears to have begun in June 1978 when ten coal licenses situated within the current Tuya River Coal Property boundary were granted to Mr. W.E. Kleinhout. The following year Esso Minerals Canada (Esso) entered into an option to purchase the ground and conducted limited exploration.

In January 1979 fourteen coal licenses situated within the current Tuya River Coal Property boundary were granted to Pacific Petroleum Ltd. (Pacific Petroleum) In September 1979 Pacific Petroleum relinquished five of the original fourteen licenses and acquired three new coal licenses. In November 1979 the ownership of the remaining twelve coal licenses (3,020 ha) were transferred from Pacific Petroleum to Petro-Canada Exploration Inc. (Petro-Canada). Both the Esso and Petro-Canada licenses were forfeited to the crown in the 1980's due to a decline in coal prices.

Tenure activity resumed in November 2001 when three coal licenses (390659, 390660 and 390661) totalling 787 ha were granted to Mr. E. F. Asp. In January 2005 two coal licenses (416816 and 416817) were granted to Mr. H. I. Asp. Around this time, Mr. E. F. Asp also filed two coal license applications (417624 and 417696) totalling 525 ha; this ground remains under application. All the foregoing coal licenses and coal license applications were optioned to 0811044 BC Ltd, a private company owned by Mr. D. Austin, in November 2009 and transferred to TEI in November, 2011.

During April-May 2011, 0811044 BC Ltd applied for 26 coal licenses (417825 to 417828, 417830 to 417837, and 417846 to 417860, inclusive) totalling 8,850 ha contiguous with the existing coal licenses and coal license applications. Also that May, coal license application 417861 was filed by Mr. J. Shields. All the coal license applications owned by 0811044 BC Ltd and Shields were transferred to TEI in October, 2011. TEI is now the sole owner of coal licenses and coal license applications within the Tuya River Coal Basin.



LEGEND:



COAL LICENSE



COAL LICENSE APPLICATION



ROAD



RIVER / CREEK



LAKE

TUYA ENERGY INC.

TUYA RIVER COAL PROJECT

COAL LICENSE MAP

| | |
|--------------|------------------|
| Drawn by: | CVS |
| Checked by: | JHP |
| Approved by: | JHP |
| Revision No. | |
| Dwg No. | TUY-A-LIC-2015AR |
| Date: | 2015-01-15 |

Document:

Figure No.

2-1

SECTION 3 SUMMARY OF EXPLORATION ACTIVITIES

3.1 PRE-1978

The earliest report of coal in the Tuya River area was by G.M. Dawson of the Geological Survey of Canada in 1887 (De Nys, 1980; Reid, 1980). In 1904, R.D. Featherstonhaugh recorded his examinations of coal occurrences along the Tuya River in a report written for the Atlin-Tuya Coal Prospecting Syndicate (Dowling, 1915). He describes large seams in Tuya River (11.6 m and 7.9 m) and a 12.2 m seam probably at, or near, the mouth of Little Tuya River.

Smitheringale (1953) mapped the Tuya River area and had partial success in locating the coal outcrops described by Dowling. He also mapped the Tahltan River Canyon where he located Tertiary coal zones ranging up to 4 m in thickness that he described as "lignite". The Tahltan River coal occurrences are approximately 25 km southwest of the Tuya River Coal Basin and may be part of an outlier to it. TEI has applied for coal licenses to cover these coal occurrences (see Figure 1-2) but these coal license applications do not form part of the Tuya River Coal Project.

The historical exploration activities referred to above together with later, more focussed coal exploration (described below) carried out within the boundaries of the current Tuya River Coal Property are summarized in Table 3-1.

Table 3-1: Summary of Exploration Activities – Tuya River Coal Project 1887 - 2011

| Year | Company/Individual | Assessment Report # | Drillholes | Depth (m) | Trench/Grab Samples | Geological Mapping |
|------|---------------------------------------|---------------------|------------|-----------|---------------------|--------------------|
| 1887 | Geological Survey of Canada | - | - | - | - | Recon. |
| 1904 | Atlin-Tuya Coal Prospecting Syndicate | - | - | - | - | Recon. |
| 1953 | W.V. Smitheringale | 245 | - | - | 1 | Recon. |
| 1978 | T. Mould | - | - | - | - | Recon. |
| 1979 | Esso Minerals Canada | 246 | - | - | 39 | 1: 10,000 |
| 1979 | Petro-Canada Exploration Inc. | 242 | 4 (D/NQ) | 753.27 | 4 | 1: 10,000 |
| 1980 | Petro-Canada Exploration Inc. | 243 | 6 (D/NQ) | 789.44 | - | 1: 10,000 |
| 1981 | Petro-Canada Exploration Inc. | 244 | - | - | 2 | Recon. |
| 1990 | British Columbia Geological Survey | - | - | - | 7 | Recon. |

Note: (D/NQ) = diamond drillhole/core size

3.2 1978 - 1990

No further exploration activities occurred within the Tuya River area until 1978 when prospector T. Mould carried out another geological reconnaissance. This led to the application and issuance of coal licenses, under his name, the following year.

The ground now covered by the Tuya River Coal Property was drilled and mapped in detail in 1979 and 1980, when interest in various types of coal was high. Exploration programs conducted during this period consisted of detailed geological mapping, diamond drilling, geophysical logging, coal core sampling and analysis, plus hand-trenching with sampling and subsequent coal quality analysis of any exposed coal seams. In 1979, Esso mapped and hand-trenched coal seams in the eastern half of the property (Vincent, 1979), within an area now referred to as the TR target area (Figure 3-1). During 1979 and 1980, Petro-Canada mapped, drilled ten core holes and dug a number of hand-trenches in the western half of the

property (Reid, 1980; De Nys, 1980; Gigliotti, 1983), in an area now referred to as the Thundercloud deposit (Figure 3-1).

3.2.1 Esso Minerals Canada (1979)

The Esso exploration program (Vincent, 1979) involved helicopter-supported geological mapping, hand-trenching, and coal sampling and analysis (Table 3-1). Aerial photographs and topographic maps were sourced before commencement of geological mapping. Mapping was done at a scale of 1:10,000 and was focused along the valleys of the main rivers and creeks. A total of 39 coal seam and coal zone outcrop channel samples were submitted to Birtley Coal & Mineral Testing (Calgary), a recognised coal laboratory, for coal quality analysis which included proximate analysis, calorific value, total sulphur and specific gravity.

3.2.2 Petro-Canada Exploration Inc. (1979 – 1981)

Field programs were conducted on the licenses held by Petro-Canada during 1979 and 1980 (Reid, 1980; De Nys, 1980). These licenses were collectively referred to as the Thundercloud property.

The 1979 program (Reid, 1980) focused on the western half of the Thundercloud property and included both reconnaissance and detailed geological mapping using topographic maps generated from aerial photographs. No outcrops were observed on the plateau tops during the reconnaissance mapping. Consequently, the detailed mapping, at a scale of 1:10,000, centred along the Little Tuya River and Mansfield Creek valleys. This was accomplished with a number of two-man teams using a chain and compass mapping method (Reid, 1980). Four coal seam outcrops were hand-trenched and sampled for coal quality analysis, which included proximate analysis, total sulphur, and calorific value.

The 1979 program also included helicopter-supported diamond drilling and geophysical logging with associated coal core sampling and analysis. Four vertical NQ core drillholes were drilled totalling 753.27 metres (Table 3-2). Three of the four drillholes were geophysically logged using density, gamma ray, and neutron tools; one of these drillholes was also logged using a focussed electric (resistivity) tool. Two of the four drillholes intersected significant amounts of coal. Coal quality testing performed on core coal samples included proximate analysis, total sulphur, and calorific value; two samples from drillhole TDD79-01 also underwent Hardgrove Index measurements (HGI), screen sizing, and float sink analysis. All samples collected from the 1979 exploration program were submitted to Birtley Coal & Mineral Testing (Calgary) for coal quality analysis. Drillholes were surveyed using a Marinav satellite instrument and topographic maps were updated to incorporate these data. All disturbed areas were reclaimed at the end of the program to the specifications of the British Columbia Forest Service.

Petro-Canada's 1980 field program also focused on the western half of the Thundercloud property and involved geological mapping, diamond drilling, geophysical logging and coal core sampling and analysis (De Nys, 1980). Once again, all aspects of the program were helicopter-supported. Six vertical NQ core drillholes were drilled totalling 789.44 m (Table 3-2). Two of the six drillholes were geophysically logged; for one drillhole, a suite of density, gamma ray and neutron logs were obtained while the other was logged using only gamma ray and neutron tools. All completed drillholes were surveyed using a Marinav satellite instrument and topographic maps were updated to incorporate these data.

Table 3-2: Location of Drillholes and Geophysical Logs Run

| Drillhole | Easting (NAD83) | Northing (NAD83) | Elevation | Depth | Geophysical Logs Run |
|------------------|----------------------------|-----------------------------|------------------|--------------|---------------------------------|
| TDD79-01 | 393412.00 | 6462068.00 | 756.68 | 221.59 | d,g,n,fr |
| TDD79-02 | 394277.76 | 6462180.27 | 784.89 | 132.95 | d,g,n |
| TDD79-03 | 393964.73 | 6458722.73 | 772.28 | 232.56 | d,g,n |
| TDD79-04 | 393107.49 | 6456186.58 | 789.26 | 166.17 | No Logs |
| TDD80-01 | 393758.19 | 6457334.04 | 781.28 | 116.74 | No Logs |
| TDD80-02 | 392954.95 | 6464111.48 | 866.10 | 143.26 | No Logs |
| TDD80-03 | 392075.72 | 6458384.66 | 857.56 | 74.68 | No Logs |
| TDD80-04 | 393268.00 | 6460831.82 | 839.35 | 189.59 | d,g,n |
| TDD80-05 | 392870.09 | 6461588.88 | 856.36 | 141.12 | No Logs |
| TDD80-06 | 393383.22 | 6458053.10 | 731.78 | 124.05 | g,n |

Note: d,g,n,fr = density, gamma, neutron, and focussed beam resistivity.

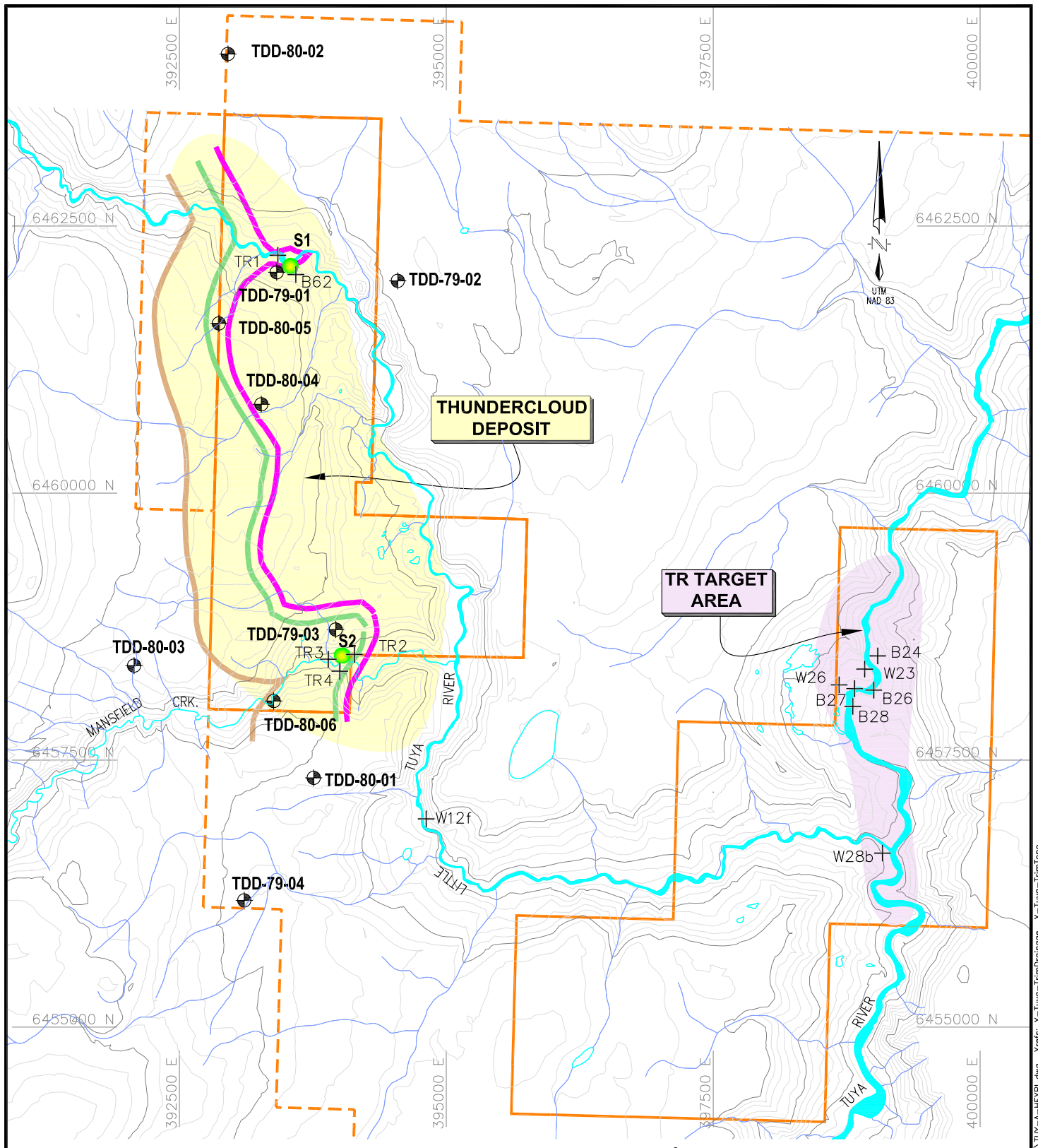
One of the six drillholes intersected significant amounts of coal and was sampled for coal quality analysis. A total of 18 samples were sent to Loring Laboratories Ltd (Calgary), a recognised coal laboratory, for analysis. Coal quality tests performed on samples from the program included proximate analysis, total sulphur and calorific value. The 1980 exploration program included geological mapping north of the Little Tuya River. The mapping was done at a scale of 1:10,000 and only a few outcrops were observed. All disturbed areas were reclaimed at the end of the program to the specifications of the British Columbia Forest Service.

Petro-Canada carried out a two-day site visit in 1981 prior to undertaking a re-interpretation of the geology. Two additional coal samples (S1 and S2 on Figure 3-1), were taken from coal exposures and submitted for analysis. Testing included proximate analysis, total sulphur, calorific value, free swelling index (FSI), HGI, and ash chemistry.








3.2.3 B.C. Geological Survey (1990)

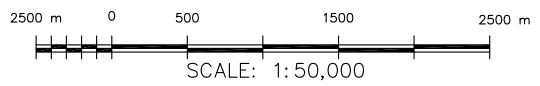
In 1990, B. Ryan spent 5 days on the property, mapping outcrops along Tuya River, Little Tuya River and Mansfield Creek. Ryan collected seven coal samples that underwent petrographic examination to determine their maximum reflectance. His summary report, written for the BC Ministry of Energy and Mines (Ryan, 1991) includes discussions of historical coal resource estimates and of potential coalbed methane resources.

There is no record of any coal exploration having been conducted on, or in the immediate vicinity of, the property after 1990 until that carried out by TEI, as described below.



LEGEND:

-  HISTORIC DRILL HOLES
-  OUTCROP COAL SAMPLES (S1,S2)
-  TRENCHES
-  COAL ZONE 1 - SUBCROP LINE
-  COAL ZONE 2 - SUBCROP LINE
-  COAL ZONE 3 - SUBCROP LINE
-  PROPERTY BOUNDARY



| | | | | | | | | | | | | | | | | | |
|---|-------------|-----|-------------|-----|--------------|-----|--------------|--|---------|-------------|-------|------------|--|-----------|--|------------|------------|
| TUYA ENERGY INC. | | | | | | | | | | | | | | | | | |
| TUYA RIVER COAL PROJECT | | | | | | | | | | | | | | | | | |
| HISTORIC EXPLORATION ACTIVITIES | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="font-size: small;">Drawn by:</td><td>CVS</td></tr> <tr><td style="font-size: small;">Checked by:</td><td>JHP</td></tr> <tr><td style="font-size: small;">Approved by:</td><td>JHP</td></tr> <tr><td style="font-size: small;">Revision No.</td><td></td></tr> <tr><td style="font-size: small;">Dwg No.</td><td>TUY-A-HEXPL</td></tr> <tr><td style="font-size: small;">Date:</td><td>2015-01-23</td></tr> </table> | Drawn by: | CVS | Checked by: | JHP | Approved by: | JHP | Revision No. | | Dwg No. | TUY-A-HEXPL | Date: | 2015-01-23 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="font-size: small;">Document:</td><td></td></tr> <tr><td style="font-size: small;">Figure No.</td><td style="text-align: center;">3-1</td></tr> </table> | Document: | | Figure No. | 3-1 |
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| Figure No. | 3-1 | | | | | | | | | | | | | | | | |

3.3 2012 - 2015

3.3.1 Tuya Energy Inc.

In late 2012 Tuya Energy Inc. contracted Fugro Airborne Surveys (Fugro) to conduct an airborne geophysical survey over the Tuya River Coal Property. A total of 489.4 line kilometres were flown and surveyed between December 17, 2012 and January 07, 2013.

As the Tuya River Coal Property is at a relatively early stage of exploration, and as large tracts of plateau are covered in thick glacial till thus providing little or no exposed rock, the geophysical survey was conducted as a “first-pass” attempt to learn more about the local geology away from the areas explored previously by:

- i) identifying and characterizing the geophysical signatures of historical coal occurrences and applying that knowledge to the rest of the area to see if similar patterns were present;
- ii) attempting to discern the nature of the bedrock immediately underlying the glacial till; and,
- iii) providing insight into elements of structural geology that might effect this part of the Tertiary basin.

This was accomplished to a certain extent, although it was found that the system utilized does not have the best range of resistivity resolution for this project.

Data was acquired using a HELITEM electromagnetic system, supplemented by a high-sensitivity cesium magnetometer. The information from these sensors was processed to produce maps and images that display the magnetic and conductive properties of the survey area.

Interpretation of the data involves the analysis of anomalous responses from the electromagnetic and magnetic survey systems in order to map the geology. This information can be used together with existing knowledge of the property gained from the previous exploration results (principally drillhole and mapping data) in an effort to identify potential targets for follow up exploration or drilling.

Interpretation and logistics reports produced by Fugro that contain further details of the survey along with the results, and discussions and interpretations of the results can be found in Appendix I.

3.3.1.1 Project Management, Personnel, and Contractors

The Tuya River Coal Project is owned and managed by Tuya Energy Inc. The following professional and technical members of Tuya Energy Inc. staff (Table 3-3 and Table 3-4) contributed to the 2012-2013 exploration program:

Table 3-3: Tuya Energy Inc. Personnel

| Name | Position |
|--------------------|---|
| John Perry, P.Geo. | Chief Operating Officer |
| Nathan Archer | Mining & Mineral Exploration Technologist |
| Cristina Solano | Drafting / CAD Services |

Table 3-4: Tuya River Coal Project Contractors

| Type of Work Performed | Contracting Company/Individual |
|--|---------------------------------------|
| Airborne Geophysical Survey | Fugro Airborne Surveys Corp. |
| Airborne Geophysical Survey Helicopter | Questral Helicopters |
| Independent 43-101 Compliant Report (In Preparation) | Dr. Barry Ryan, P.Geo. |
| Site Visit Helicopter | Pacific Western Helicopters |

SECTION 4 GEOLOGICAL SETTING

The geological data of the Tuya River Coal Project was not re-interpreted by TEI during the reporting period. The following sections (4.1 to 4.5) are summarized or otherwise taken, in whole or in part, mostly from Vincent (1979), Gigliotti (1983) and Ryan (1991).

4.1 REGIONAL GEOLOGY

The Stikine Plateau is part of the Intermontane Belt of the Cordillera, flanked on the east by the Omineca Crystalline Complex and on the west by the Coast Crystalline Complex. The Tuya River region is underlain by a variety of sedimentary and igneous rocks that range in age from Palaeozoic (Pennsylvanian) to Quaternary (Pleistocene). The stratigraphic sequence in the project area is Figure 4-1. The Tuya River coal measures are an erosional remnant of lower Cenozoic (Paleocene to early Eocene) lithologies which were deposited on a basement of deformed mid-Palaeozoic and Mesozoic rocks. The youngest part of the stratigraphic sequence consists of mid- to late Cenozoic (Oligocene to Miocene) intrusive and extrusive igneous rocks; the latter form plateau basalts and volcanoes in part of the region. A regional geology map that illustrates the relationships between the various formations that occur within, and in the general vicinity of, the Tuya River Coal Property and shows the main structural geological features is presented as Figure 4-2.

4.2 SEDIMENTARY HISTORY

Gigliotti (1983) correlates the coal-bearing strata of the Tuya River Coal Property to the Sustut Group (Upper Cretaceous to Eocene age). Palynological evidence from samples collected by Vincent (1979) and De Nys (1980) indicate that the coal-bearing rocks are not younger than early Eocene and not older than Paleocene, which is age equivalent to the Brothers Peak Formation of the Sustut Group (Eisbacher, 1974). These rocks represent clastic wedges which were deposited into non-marine successor basins, following the westward retreat of the sea during the late Cretaceous.

4.3 STRATIGRAPHY

4.3.1 Regional Stratigraphy

The Sustut Group has been divided into two formations (Eisbacher, 1974). The lowest is the Tango Creek Formation which is overlain by the Brothers Peak Formation. The Tango Creek Formation consists of claystone, sandstone, minor conglomerate and local, thin coal seams (Figure 4-1); it varies from 500 m to 1400 m in thickness. The Brothers Peak Formation is characterized by thick conglomerates interbedded with claystone and numerous acidic, ash-fall, tuffs. The contact between these two formations is generally conformable but some angular unconformities exist.

4.3.2 Local Stratigraphy

Vincent (1979) divided the Sustut Group within what is now the Tuya River Coal Property into three informal units. He describes the basal or Lower Member as a fining-upward sequence of mudstone, siltstone, sandstone and coal with a 5 m thick basalt "flow" near the middle of the unit. The upper contact of this member was placed at the base of the first conglomerate above a siltstone-mudstone sequence. His Middle Member consists of chert-pebble conglomerate, sandstone, siltstone, mudstone and coal. The upper contact is gradational and is taken at the conglomerate where the clasts are dominated by basalt cobbles. The Middle Member may, in part, be laterally equivalent to the Upper and/or Lower Members. The Upper Member consists of basalt, basalt

cobble to basalt boulder conglomerate and sandstone. The basalt occurs as flows approximately 10 m thick.

Gigliotti (1983) adopted this nomenclature and applied it to the Thunderbird deposit as shown in Figure 4-1. His Lower Member is over 200 m thick. The thickest coal seams are present within this member, and have an aggregate thickness of 15 m to 20 m. The Middle Member varies in thickness from approximately 200 m on Mansfield Creek to about 100 m in the northern part of the property. Conglomerate is prominent in beds ranging from 1 m to 7 m in thickness. The Upper Member is at least 300 m thick. The areal distribution of these stratigraphic units across the Thundercloud deposit is illustrated in Figure 4-3.

Ryan (1991) divided the succession into two units. He described the lower as a 200-300 m thick sequence of mudstones and sandstones in the west and sandstones and chert-pebble conglomerate in the east, which contain a single, approximately 100 m thick, coal zone with a cumulative coal thickness of 5-30 m. The lower unit is equivalent to the lower and middle members, plus the lower portions of the upper member of Gigliotti (as described above). Ryan's lower unit is overlain by an upper unit at least 300 metres thick composed of volcanic pebble-conglomerate, sandstone and volcanic rocks. The areal distribution of Ryan's stratigraphic units across both the Thundercloud deposit and TR target area is illustrated in Figure 4-4.

The entire succession is unconformably overlain by a cover of recent, unconsolidated, glacial and fluvial sediments. This overburden varies in thickness from a few meters over much of the property to 90 m or more south of the property. Overburden slumping is common and large scale rotational slump blocks and scars can be seen in all stream valleys.

4.3.3 Coal Zone Stratigraphy

Three of the holes drilled on the Thundercloud deposit in 1979 and 1980 (TDD79-01, TDD79-03 and TDD80-04) intersected coal measures. Correlation of coal seams between data points (drillholes, outcrops and trenches) is difficult, and those provided below for the Thundercloud deposit (Gigliotti, 1983) are only tentative.

The coal bearing horizons extend north-south through the western block of coal licenses. Coal seams intersected in the three drillholes have been grouped into three zones (Figure 4-5). The oldest, Zone 1, has an aggregate coal thickness of 5 m to 10 m. Zone 2 is 130 m stratigraphically above Zone 1 and consists of two seams with an aggregate thickness of 2.6 m in the central portion of the property and three seams with an aggregate thickness of 7.0 m in the northern portion of the property. Zone 3 is approximately 20 m above Zone 2, varies from 24 m to 30 m in thickness and contains numerous rock partings. In the northern portion of the property it is comprised of three seams with an aggregate coal thickness of 9 m. Interseam and interzone sediments typically consist of claystone, siltstone, sandstone and minor chert pebble conglomerate. A diabase sill is present in drillholes TDD79-03 and TDD80-04 between Zones 1 and 2 and is possibly correlative to a 5 m thick sill exposed in Mansfield Creek.

The coal zones are not well exposed on the Tuya River Coal Property but two outcrops provided measurable sections of thick coal seams. The Mansfield Creek section (Figure 4-6) has a true coal thickness of about 10 m and is thought to be the lowermost seam in the succession. The seam has been somewhat thickened by small scale thrust faults. The top of the seam is not exposed. The other outcrop is on Little Tuya River in the northern part of the property (Figure 4-7). The top of the seam is covered but a 5.4 m section is exposed, 4.8 m of which is coal. This seam is thought to represent the basal portion of Zone 3 (Figure 4-5).

Vincent (1979) describes numerous coal seams and coal zones along the Tuya River, in what is now referred to as the TR target area. Due to faulting and large scale slumping, correlation over the area was nearly impossible and many of the outcrops were deemed unreliable. Vincent interpreted these coals to represent Middle Member horizons.

Ryan (1991) combined the Lower and Middle Members to form one lower unit. He places Gigliotti's three (Thundercloud) coal zones into one, 100 m thick coal zone and correlates this zone with the coal measures reported by Vincent from the TR Target area along Tuya River (see Figure 4-4).

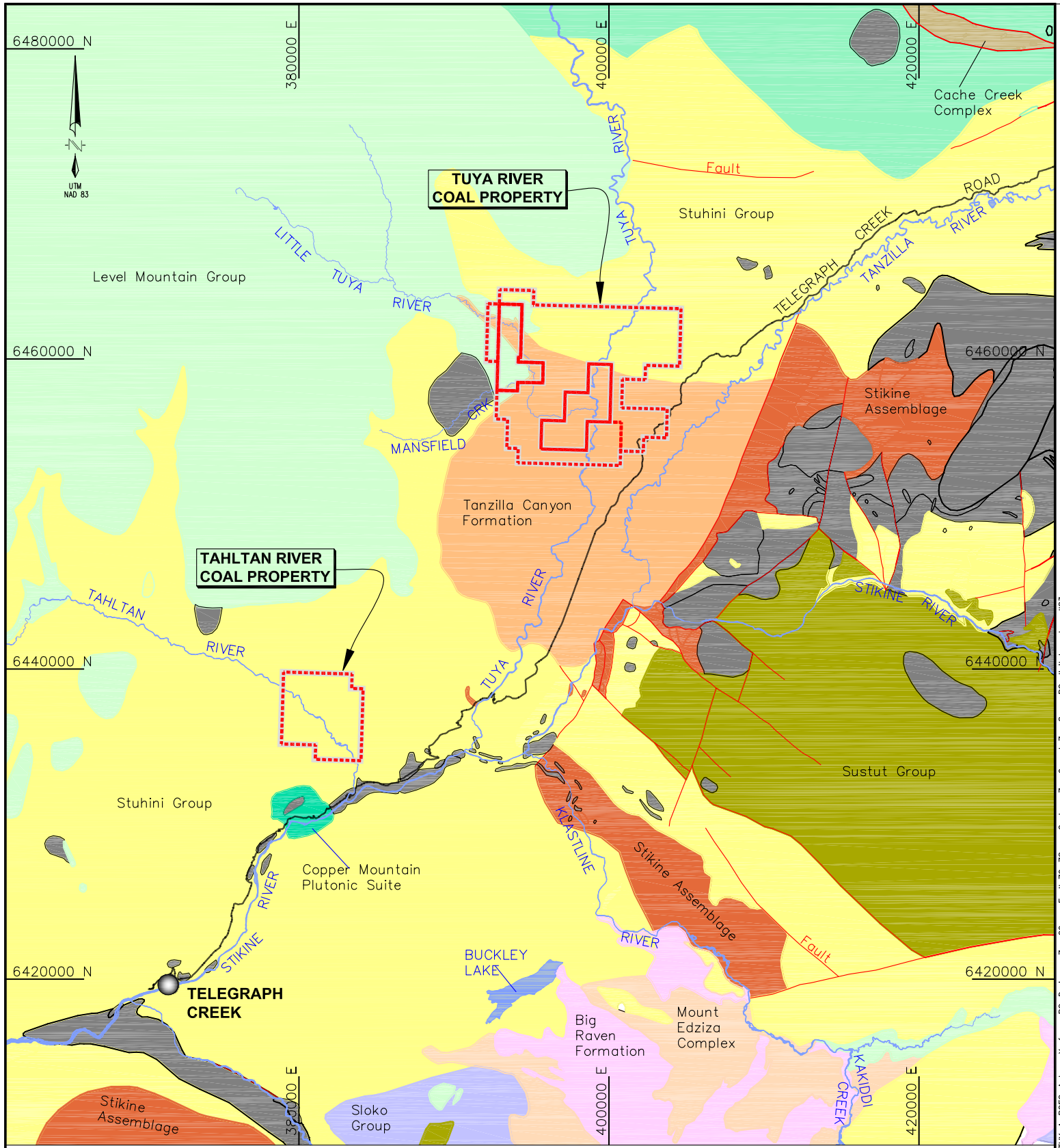
4.4 STRUCTURAL GEOLOGY

The Palaeozoic and Mesozoic basement rocks are folded and in some cases exhibit multiple phases of deformation. In the Telegraph Creek area, major fault zones are oriented north-south. These faults are thought to predate the Tertiary sedimentation and to have remained active into the Quaternary (as evidenced by faulting in Pleistocene, and younger, volcanic flows). Late stage thrust faults, possibly related to glaciation, have been observed in some coal outcrops on the property.
















Where mapped, the overlying coal-bearing strata typically strike north-south and dip 10 to 20 degrees to the east. Localized folding is present although this is thought to be associated with normal faulting. The displacement of coal seams along such faults is probably in the order of a few metres or tens of metres. Air photograph lineations and sheared outcrops in the western part of the property indicate a major normal fault that down-drops younger volcanics and volcanoclastics against the Tertiary coal measures. Cross-sections illustrating the main structural elements of the Thundercloud deposit are presented in Figures 4-8 to 4-10. These cross-sections reflect the geology as described by Gigliotti (1983).

Taking the Thundercloud and TR target areas together, Ryan (1991) believes that the simplest interpretation represents the basin as an open, north-northwesterly-plunging syncline, complicated by smaller scale faults and folds. The coal measures in Little Tuya River and Mansfield Creek dip to the east; while those in the Tuya River dip to the north or west (see Figure 4-4).

| | | GIGLIOTTI (1983) | EISBACHER (1974) |
|---|-------------|---|--|
| QUATERNARY | RECENT | Glacial and Fluvial | |
| | PLIESTOCENE | Basaltic | |
| TERTIARY | PLIOCENE | and | |
| | MIOCENE | Andesitic Flows | |
| | OLIGOCENE | | |
| | EOCENE | Upper "Member" | Brothers Peak Formation |
| UPPER CRETACEOUS | PALEOCENE | Middle "Member" | Tango Creek Formation |
| | | Lower "Member" | |
| | | Deformed Mesozoic and Paleozoic Sedimentary and volcanic rocks | |
| NOTE: Modified from Gigliotti (1983) | | TUYA ENERGY INC. | |
| | | TUYA RIVER COAL PROJECT | |
| | | <small>Drawn by: CVS</small> <small>Checked by: JHP</small> <small>Approved by: JHP</small> <small>Revision No.</small> <small>Dwg No. TUY-A-STRAT</small> <small>Date: 2015-01-28</small> | STRATIGRAPHIC COLUMN <small>Figure No.</small> 4-1 |



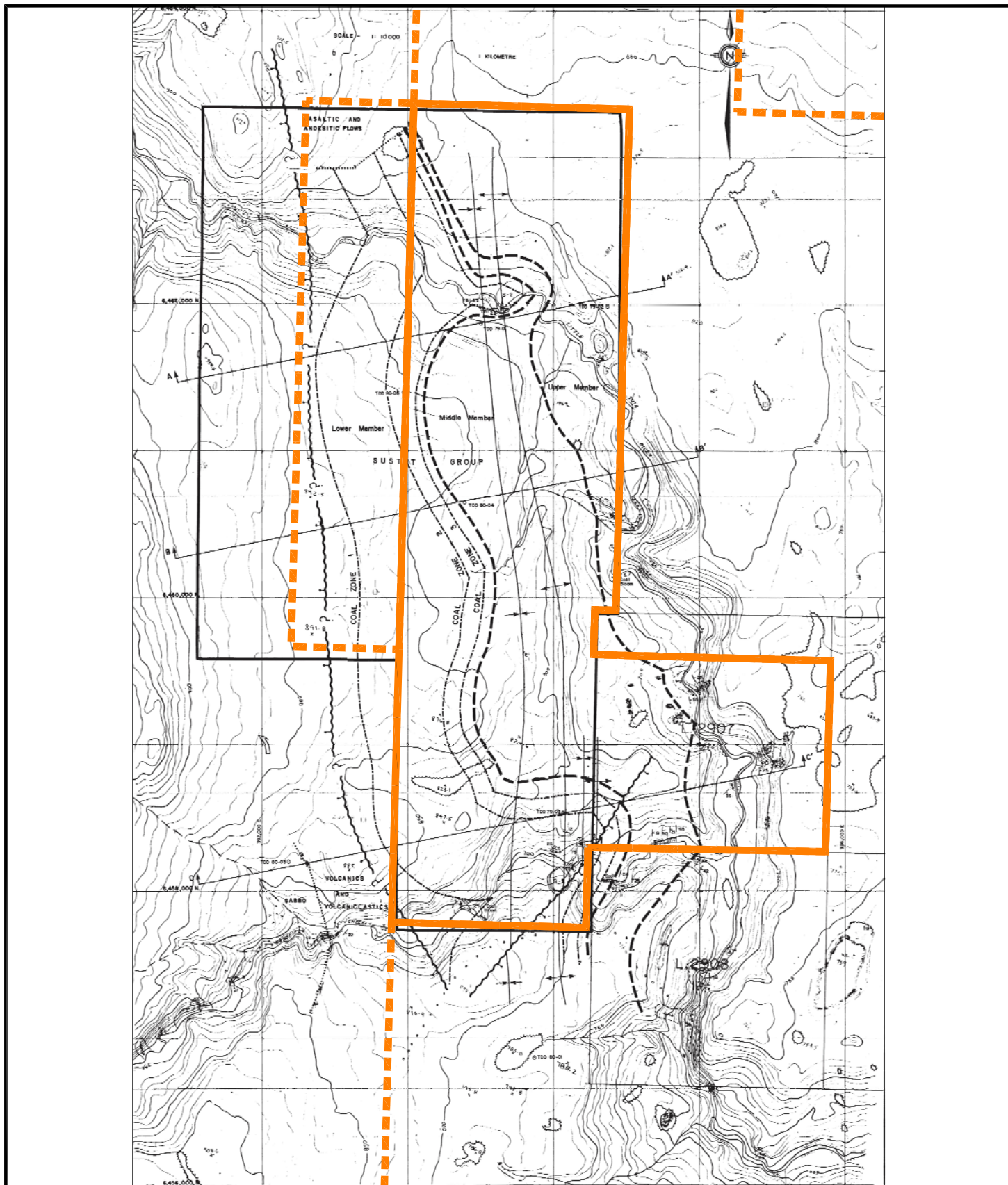
LEGEND:

- | | | | |
|--|---------------------------|---|--------------------------------|
|  | LABERGE GROUP |  | MOUNT EDZIZA COMPLEX |
|  | LEVEL MOUNTAIN GROUP |  | COPPER MOUNTAIN PLUTONIC SUITE |
|  | SLOKO GROUP |  | STIKINE ASSEMBLAGE |
|  | STUHINI GROUP |  | UNNAMED |
|  | SUSTUT GROUP |  | FAULTS |
|  | BIG RAVEN FORMATION |  | COAL LICENSE |
|  | TANZILLA CANYON FORMATION |  | COAL LICENSE APPLICATION |
|  | CACHE CREEK COMPLEX | | |

REFERENCE:
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<http://www.empr.gov.bc.ca/Mining/Geoscience/BedrockMapping/Pages/BCGeoMap.aspx>

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| TUYA ENERGY INC. | |
| TUYA RIVER COAL PROJECT | |
| REGIONAL GEOLOGY | |
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| Revision No. | |
| Dwg No. TUYA-RGEO-A | |
| Date: 2015-01-29 | Figure No. |

K:\TUYA\Geology\Regional\TUYA-RGEO-A.dwg Xrefs: x-BC-Drainage-Zone09 x-BC-FaultsZ9-Z8 x-Geology-Zone8 x-BC_digital_geology_1183



LEGEND:

LITHOLOGY

- gabbro intrusives
- volcanics - unsubdivided
- basalts, andesites, tuffs
- primary and secondary ash/cinders
- may in part be both younger & older than intrusives & sediments.

SEDIMENTS

- sandstone
- siltstone
- mudstone
- conglomerates - unsubdivided - include both epiclastic and volcanoclastic conglomerates

Note: order of sed type in legend does not indicate stratigraphic sequence.

STRUCTURE

- boundary
- normal faults
- shear / or strike
- assumed outcrop of coal seam
- assumed geological boundary
- location of diamond drill collar
- assumed thick overburden boundary

TR 1979 Tranches
S-1 coal sample location

LEGEND:

TUYA ENERGY COAL LICENSE

AND

COAL LICENSE APPLICATION

NOTE:

Modified from Gigliotti (1983)

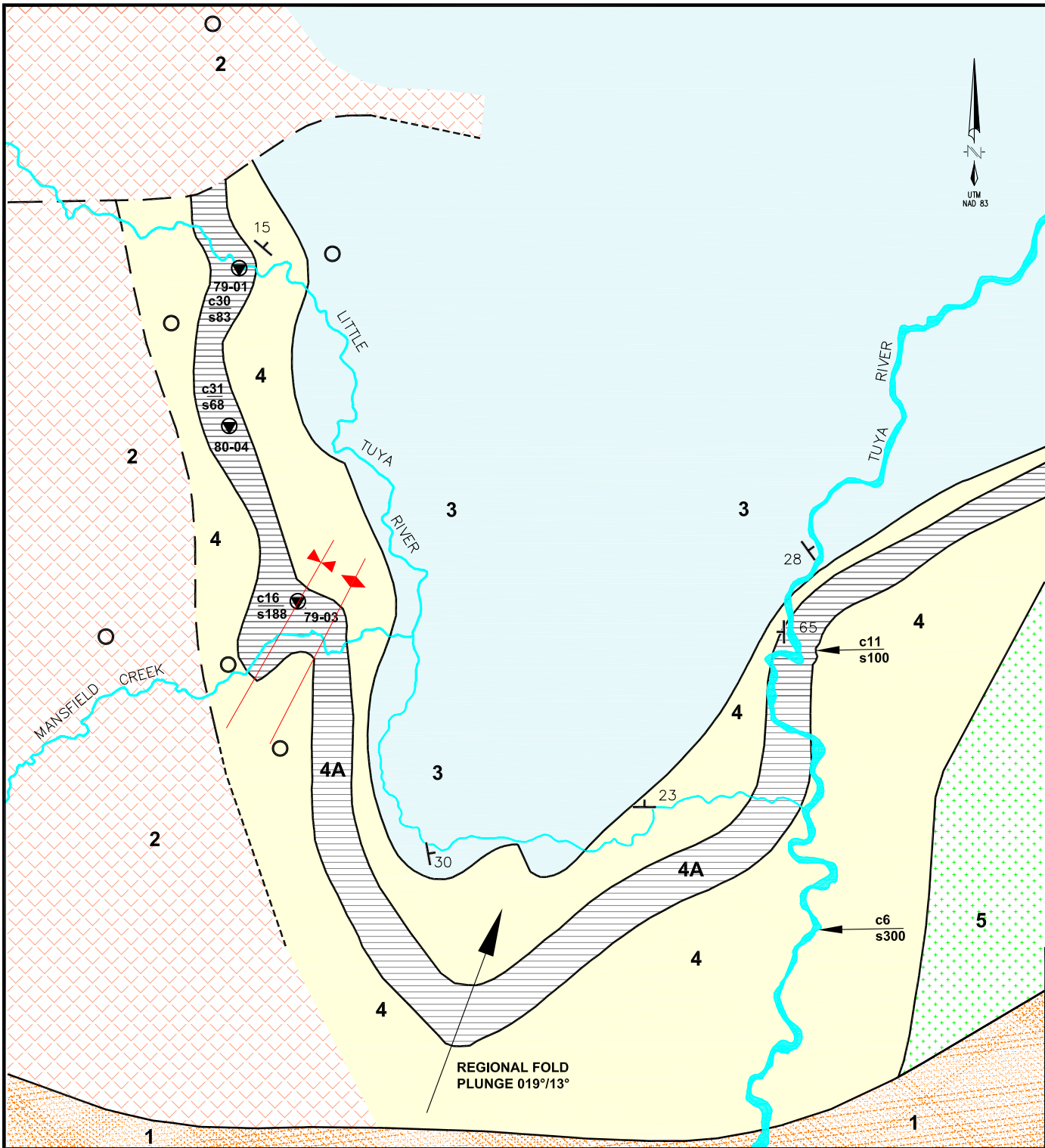
TUYA ENERGY INC.

TUYA RIVER COAL PROJECT

THUNDERCLOUD DEPOSIT GEOLOGY (PETRO-CANADA)

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| Approved by: | JHP |
| Revision No. | |
| Dwg No. | TUY-A-HGEO |
| Date: | 2015-01-29 |

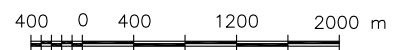
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LEGEND:

- RECENT**
- 1 Alluvium
- UPPER TERTIARY TO RECENT**
- 2 Basalts
- LOWER TERTIARY (PALEOCENE)**
- 3 UPPER MEMBER - Conglomerate, volcanics
- 4 LOWER MEMBER - Mudstone, sandstone, conglomerate, coal
- 4A COAL ZONE IN LOWER MEMBER
- TRIASSIC TO JURASSIC**
- 5 Intrusive and extrusive rocks
- SYMBOLS**
- Geological contact conjectural
- - - Fault inferred
- ↘↙ Bedding: strike and dip
- ∇ Syncline
- ▲ Anticline
- Drill Hole - with Coal intersected
- Drill Hole - no Coal intersected
- Coal Zone
- c31 Cumulative coal thickness
- s68 Total interval thickness

TUYA RIVER COAL BASIN



NOTE: Modified from Ryan (1991)

REGIONAL FOLD
PLUNGE 019°/13°

TUYA ENERGY INC.

TUYA RIVER COAL PROJECT

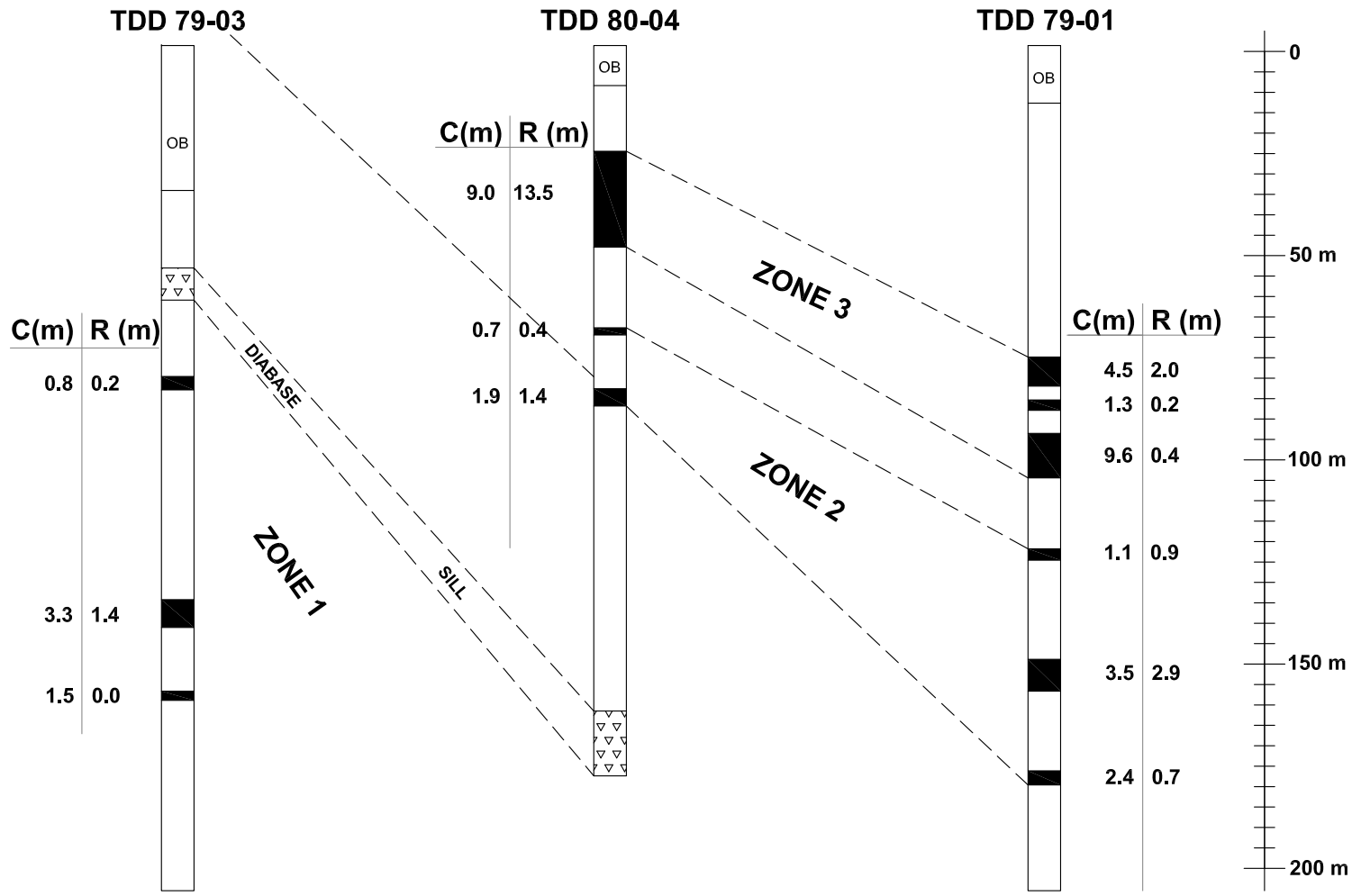
**TUYA RIVER GEOLOGY
MAP (RYAN)**

| | |
|--------------|---------------|
| Drawn by: | CVS |
| Checked by: | JHP |
| Approved by: | JHP |
| Revision No. | |
| Dwg No. | TUY-A-GEORYAN |
| Date: | 2015-01-29 |

Document:

Figure No.
4-4

COAL ZONE CORRELATION



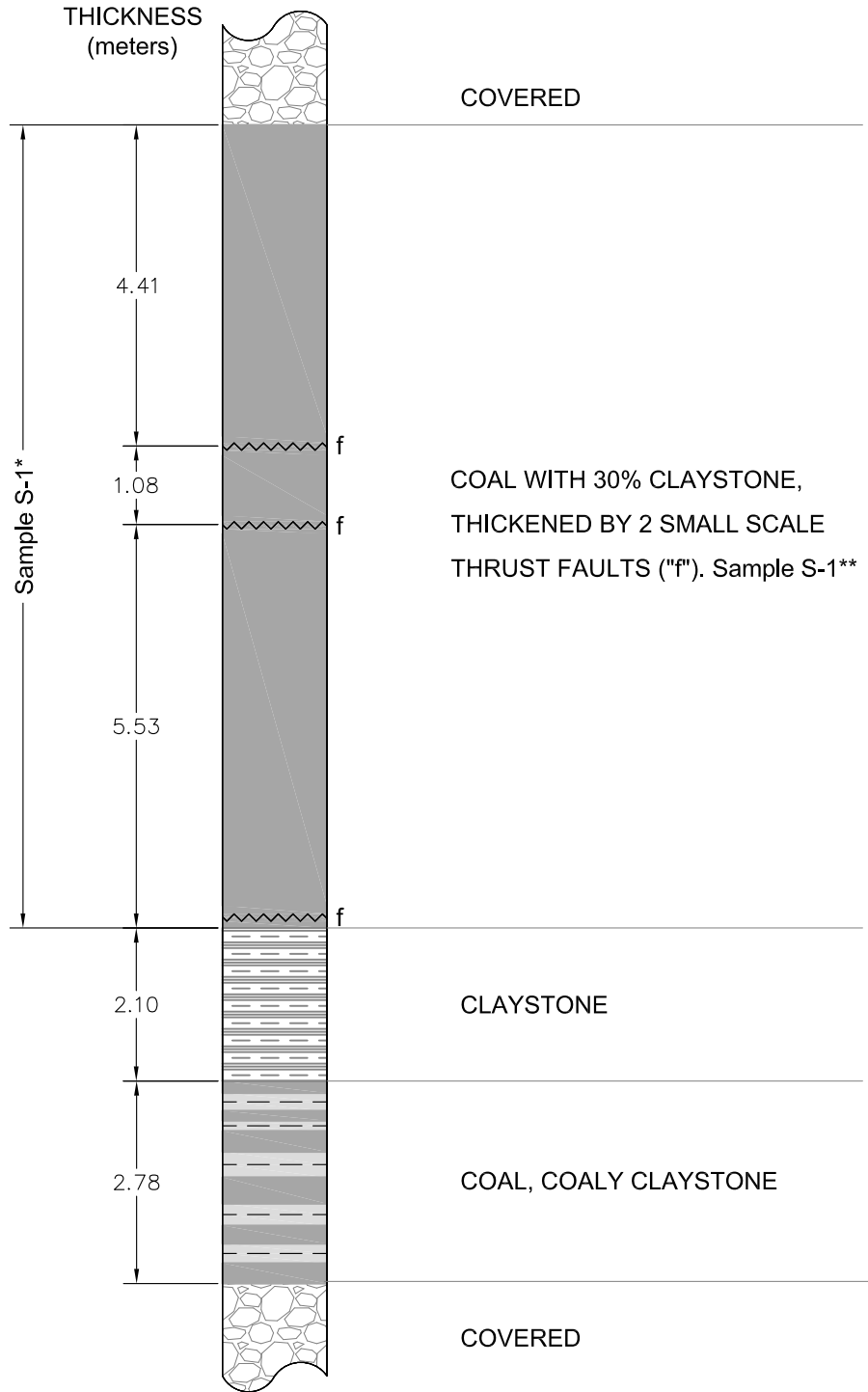
LEGEND:

- C - COAL
- R - ROCK
- OB - OVERBURDEN

NOTE:

Modified from Gigliotti (1983)

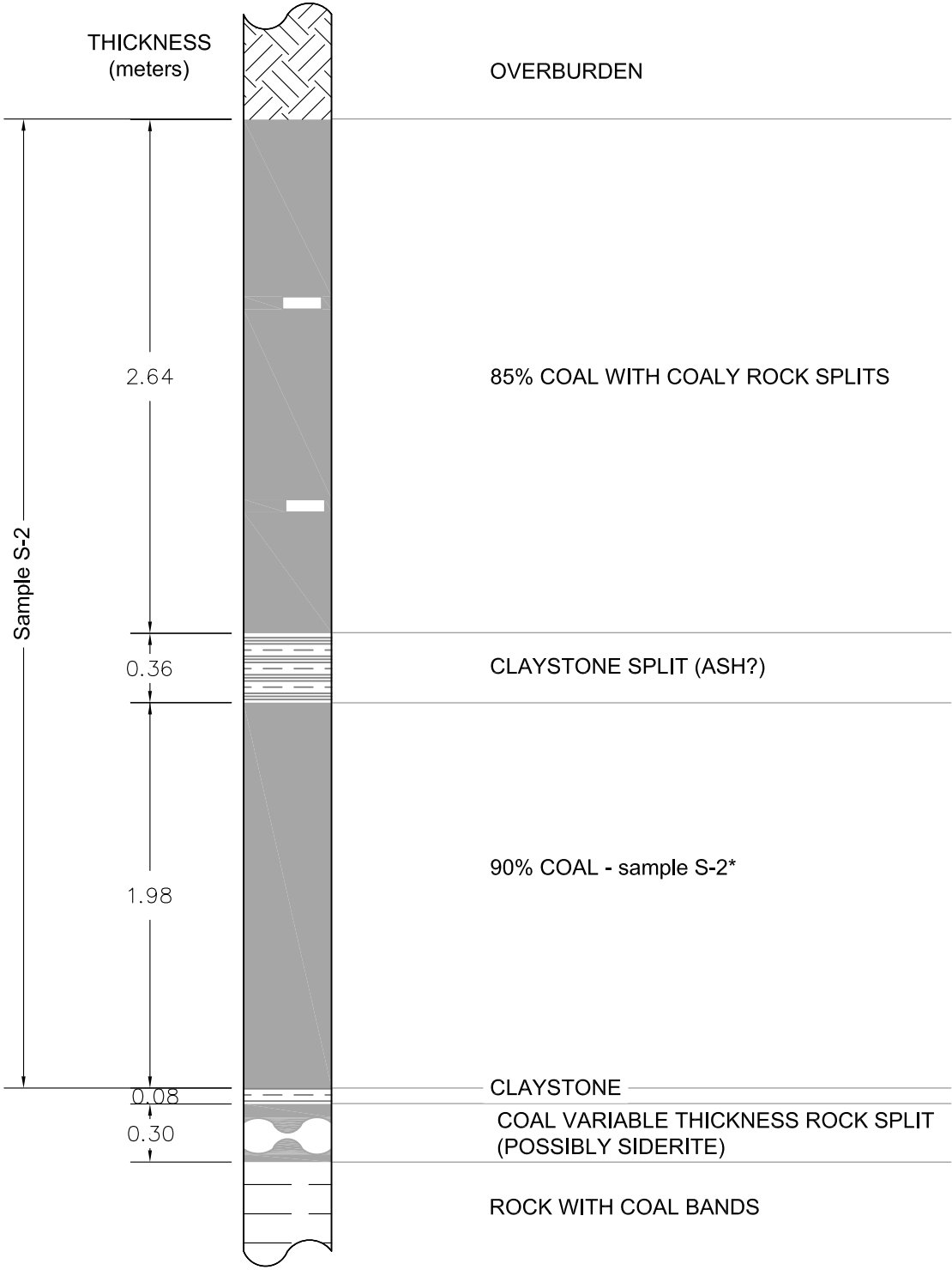
| | |
|--|--|
| TUYA ENERGY INC. | |
| TUYA RIVER COAL PROJECT | |
| COAL ZONE CORRELATION CHART | |
| Drawn by: CVS Checked by: JHP Approved by: JHP Revision No.: Dwg No. TUY-A-CZCORR Date: 2015-01-28 | Document: Figure No. 4-5 |



NOTE:

- * Thickness measured from strip log
- ** The location of S-1 is shown on Fig. 3-1
- Modified from Gigliotti (1983)

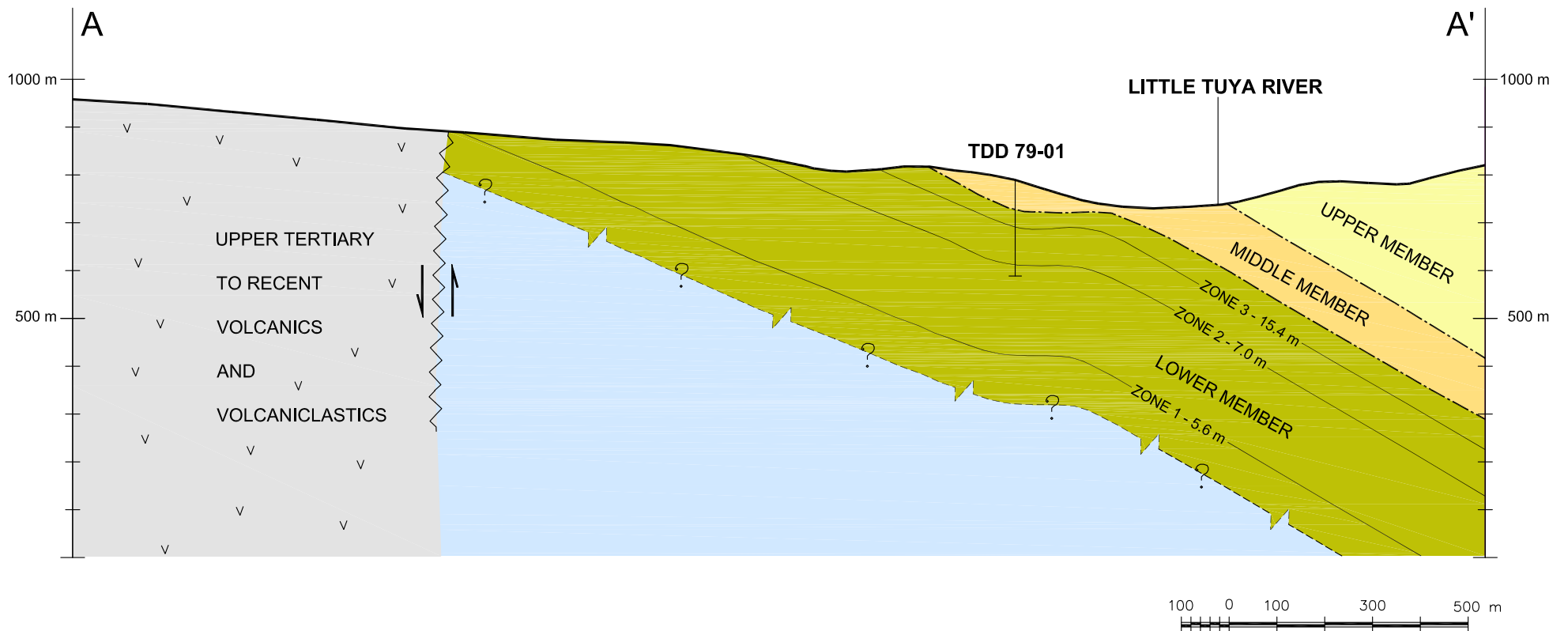
| | | | | | | | | | | | | | |
|--|--------------------------|-----|-------------|-----|--------------|-----|--------------|--|---------|------------|-------|------------|--|
| TUYA ENERGY INC. | | | | | | | | | | | | | |
| TUYA RIVER COAL PROJECT | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">Drawn by:</td> <td>CVS</td> </tr> <tr> <td style="font-size: small;">Checked by:</td> <td>JHP</td> </tr> <tr> <td style="font-size: small;">Approved by:</td> <td>JHP</td> </tr> <tr> <td style="font-size: small;">Revision No.</td> <td></td> </tr> <tr> <td style="font-size: small;">Dwg No.</td> <td>TUY-A-COZ1</td> </tr> <tr> <td style="font-size: small;">Date:</td> <td>2015-01-28</td> </tr> </table> | Drawn by: | CVS | Checked by: | JHP | Approved by: | JHP | Revision No. | | Dwg No. | TUY-A-COZ1 | Date: | 2015-01-28 | ZONE 1 - COAL OUTCROP MANSFIELD CREEK |
| Drawn by: | CVS | | | | | | | | | | | | |
| Checked by: | JHP | | | | | | | | | | | | |
| Approved by: | JHP | | | | | | | | | | | | |
| Revision No. | | | | | | | | | | | | | |
| Dwg No. | TUY-A-COZ1 | | | | | | | | | | | | |
| Date: | 2015-01-28 | | | | | | | | | | | | |
| Document: | Figure No. 4-6 | | | | | | | | | | | | |



NOTE:

- * The location of S-2 is shown on Fig. 3-1
- Modified from Gigliotti (1983)

| | |
|--|--|
| TUYA ENERGY INC. | |
| TUYA RIVER COAL PROJECT | |
| Drawn by: CVS Checked by: JHP Approved by: JHP Revision No. Dwg No. TUY-A-CO23 | ZONE 3 - COAL OUTCROP LITTLE TUYA RIVER |
| Date: 2015-01-28 | Figure No. 4-7 |



LEGEND:

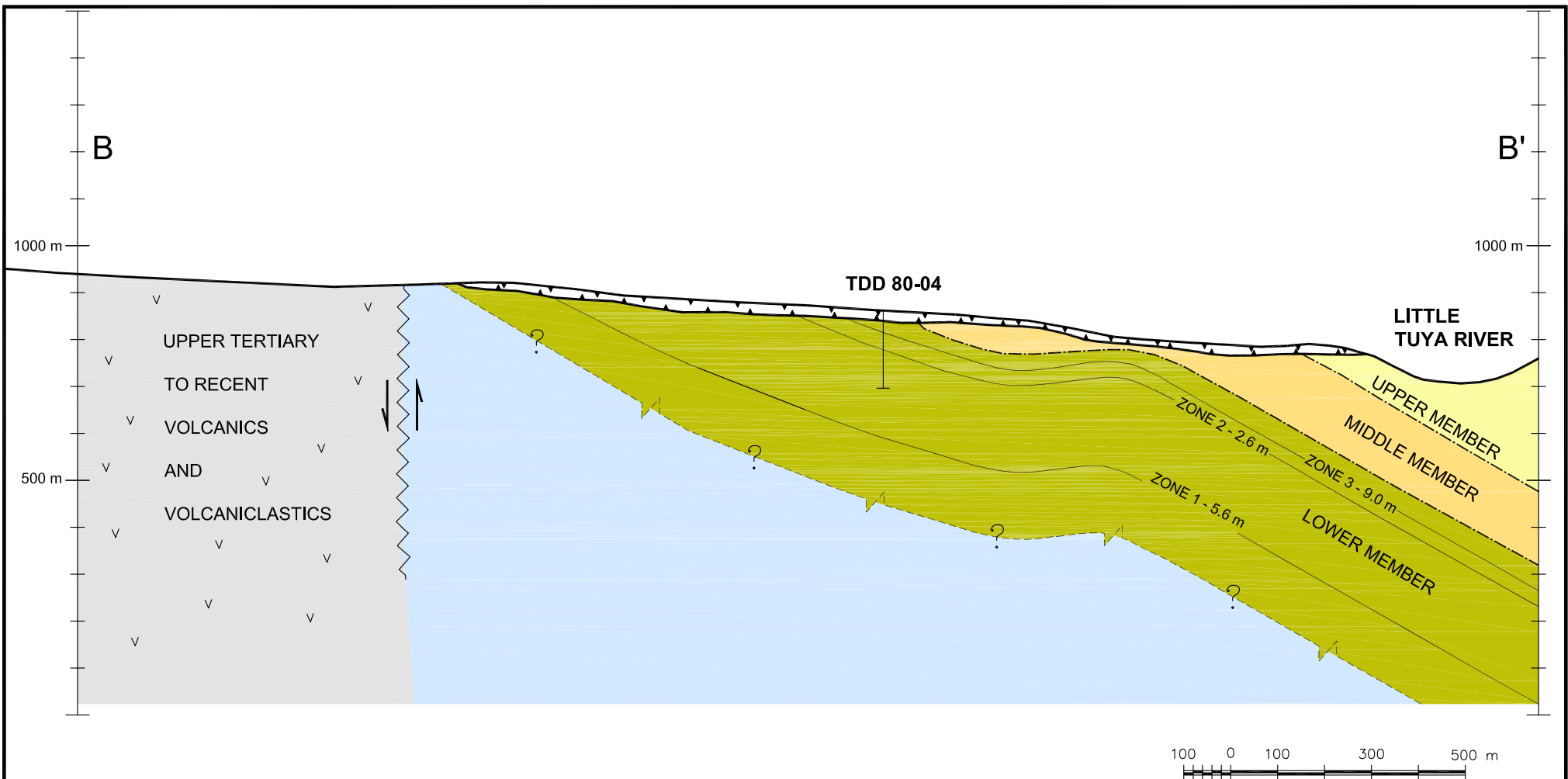
SUSTUT GROUP (UPPER CRETACEOUS TO PALEOCENE)

- UPPER MEMBER
- MIDDLE MEMBER
- LOWER MEMBER
- UNDIVIDED

NOTE:
Modified from Gigliotti (1983)

Refer to Fig. 4-4 for Cross-Section location.

| | | |
|--|-----------|----------------|
| TUYA ENERGY INC. | | |
| TUYA RIVER COAL PROJECT | | |
| THUNDERCLOUD DEPOSIT CROSS SECTION A-A' | | |
| Drawn by: CVS | | |
| Checked by: JHP | | |
| Approved by: JHP | | |
| Revision No. | | |
| Dwg No. TUY-A-XSEC-AA | | |
| Date: 2015-01-28 | Document: | Figure No. 4-8 |



LEGEND:

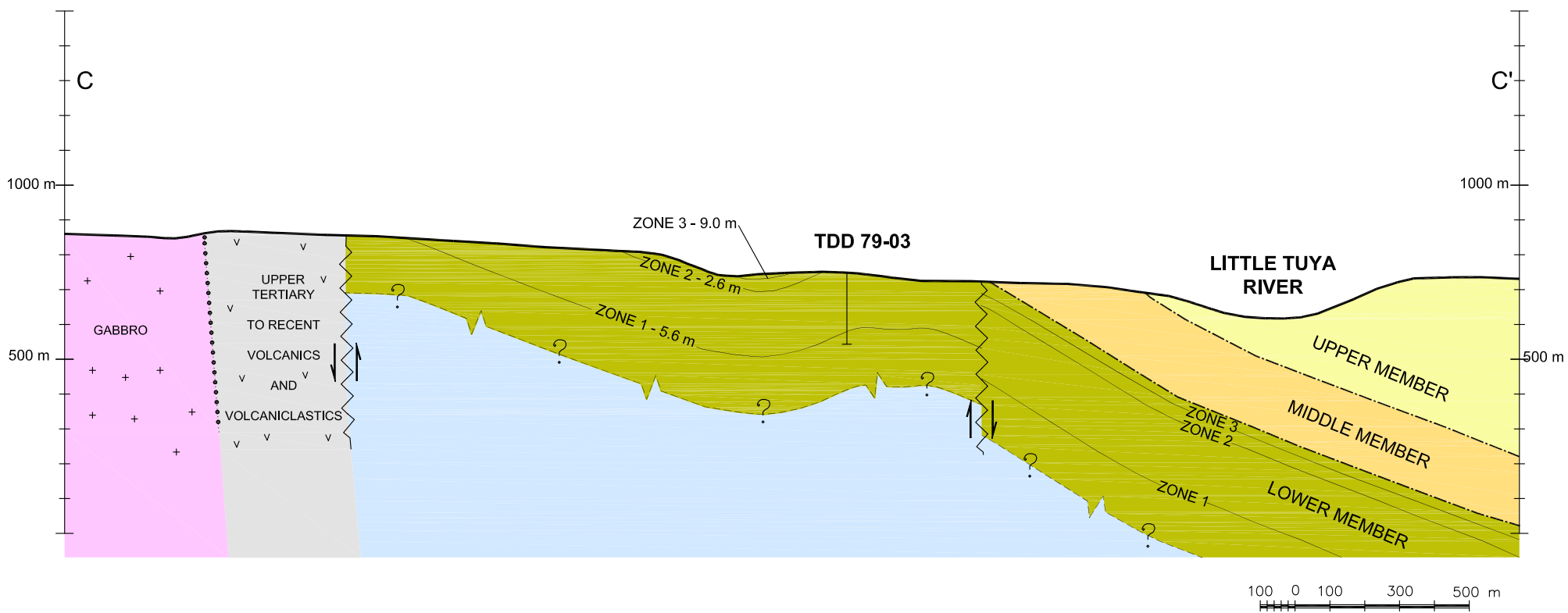
SUSTUT GROUP (UPPER CRETACEOUS TO PALEOCENE)

- UPPER MEMBER
- MIDDLE MEMBER
- LOWER MEMBER
- UNDIVIDED

NOTE:
Modified from Gigliotti (1983)

Refer to Fig. 4-4 for Cross-Section location.

| | | |
|--|--|---------------------------------------|
| TUYA ENERGY INC. | | |
| TUYA RIVER COAL PROJECT | | |
| <small>Drawn by:</small> CVS | THUNDERCLOUD DEPOSIT CROSS SECTION B-B' | |
| <small>Checked by:</small> JHP | | |
| <small>Approved by:</small> JHP | | |
| <small>Revision No.:</small> | | |
| <small>Dwg No.:</small> TUY-A-XSEC-BB | | |
| <small>Date:</small> 2015-01-28 | <small>Document:</small> | <small>Figure No.:</small> 4-9 |



LEGEND:

- SUSTUT GROUP (UPPER CRETACEOUS TO PALEOCENE)**
- UPPER MEMBER
 - MIDDLE MEMBER
 - LOWER MEMBER
 - UNDIVIDED

NOTE:
Modified from Gigliotti (1983)

Refer to Fig. 4-4 for Cross-Section location.

| | | |
|--|--|---------------------------|
| TUYA ENERGY INC. | | |
| TUYA RIVER COAL PROJECT | | |
| Drawn by: CVS Checked by: JHP Approved by: JHP Revision No. Dwg No. TUY-A-XSEC-CC Date: 2015-01-28 | THUNDERCLOUD DEPOSIT CROSS SECTION C-C' | Figure No. 4-10 |

SECTION 5 COAL QUALITY

TEI did not collect any coal samples or conduct any coal quality analyses on the project during the reporting period.

Coal-quality data are available in historic assessment reports by Dowling (1915), Smitheringale (1953), Vincent (1979), Reid (1980), De Nys (1980), Gigliotti (1983) and Ryan (1991). Coal quality data acquired by Petro-Canada from the Thundercloud deposit were obtained from NQ diamond drill core and surface trench samples, while coal quality data acquired by Esso from the TR target area were obtained from trench samples.

Dowling provides a single coal analysis which, based on analyses of ash and heat content, indicates a rank of high-volatile C bituminous coal. Vincent (1979) found the coal in the TR target area to be a rank of sub-bituminous B, although oxidation of surface coal samples may have lowered the heat content and, consequently, the rank. De Nys (1980) found the coal on the Thundercloud deposit to be of high volatile bituminous C rank. Ryan (1991) reports a rank of high volatile bituminous B, based upon the results of mean maximum reflectance of vitrinite, determined from 7 coal samples taken from across the project area; results ranged from 0.60 to 0.79, with an average of 0.68.

5.1 THUNDERCLOUD DEPOSIT

During Petro-Canada's 1979 and 1980 exploration programs three drillholes intersected significant amounts of coal which was sampled and submitted for analysis. On an as received basis (arb), moisture content of the coal seams ranged from 9.43% to 16.04%. The ranges of ash, volatile matter, fixed carbon, and sulphur contents, together with calorific value, of the coal seams intersected in these three drillholes are shown, on a dry basis (db), in Table 5-1.

Table 5-1: Thundercloud Deposit Raw Coal Quality Ranges (db)

| Thundercloud Deposit Raw Coal Quality Ranges (db) | |
|--|-----------------------|
| Ash | 13.39 – 43.42% |
| V.M. | 28.47 – 37.80% |
| F.C. | 25.37 – 49.67% |
| S | 0.36 – 1.01% |
| C.V. | 3,398 – 6,172 kcal/kg |

5.2 TR TARGET AREA

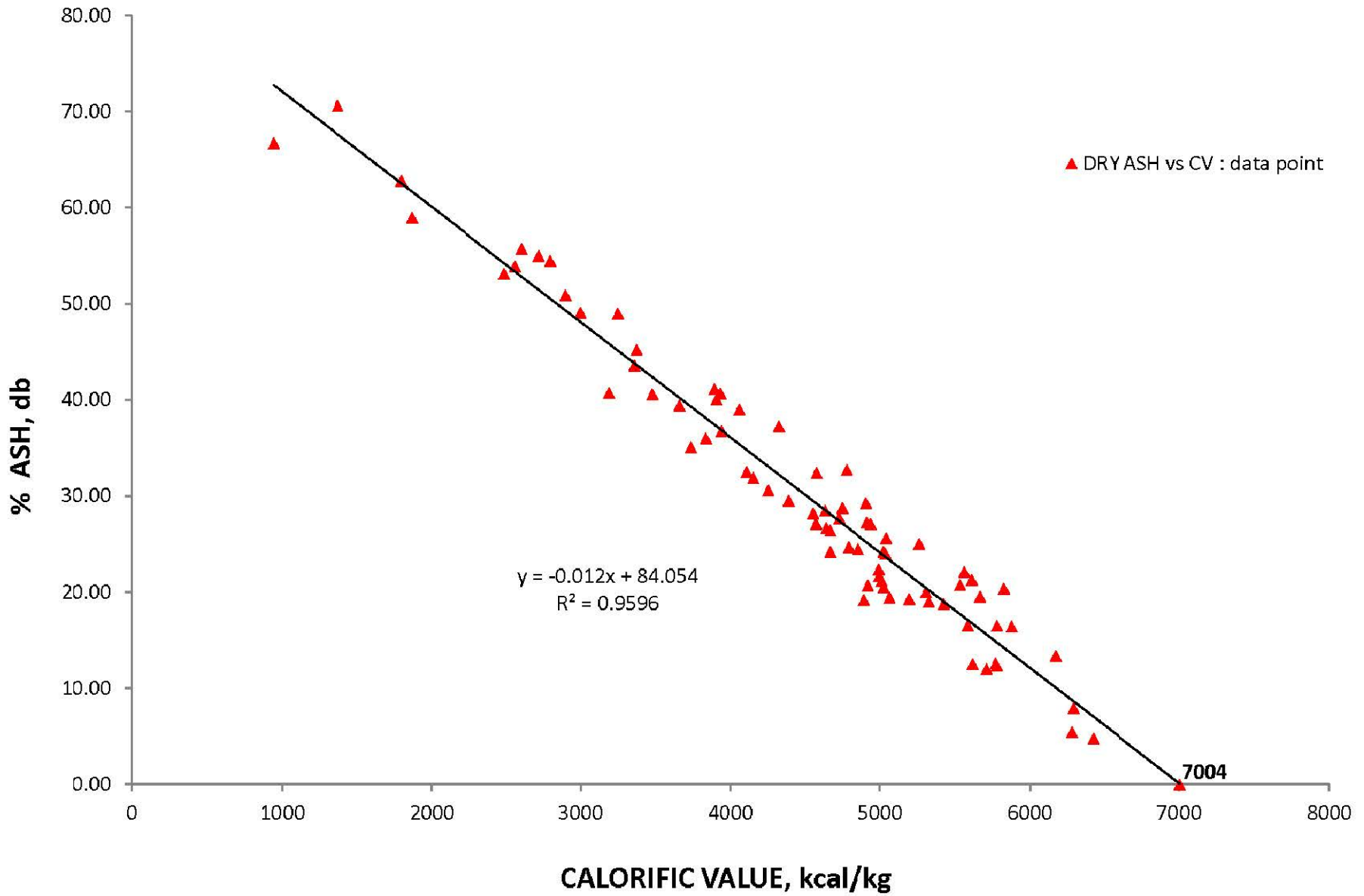
During Esso's 1979 exploration on the TR target area, a total of 39 coal outcrop channel samples were submitted for coal analyses. The analyses included moisture content, proximate analysis, calorific value and specific gravity. The results presented in Table 5-2 are taken directly from Vincent (1979). Esso assumed a thickness-weighted average of 19% moisture to be representative of each of the coal seams. The other analytical results were then prorated to a 19% moisture basis.

Table 5-2: TR Target Area Raw Coal Quality

| | TR Target Area Raw Coal Quality | |
|------|--|------------------|
| | assumed 19% moisture | dry basis |
| Ash | 21.50% | 26.54% |
| V.M. | 29.40% | 36.30% |
| F.C. | 30.10% | 37.16% |
| S | 0.46% | 0.57% |
| C.V. | 3,859 kcal/kg | 4,746 kcal/kg |

5.3 CALORIFIC VALUE

A representation of the heat content of coal from the Tuya River Coal Project is presented in Figure 5-1. This diagram is a plot of dry ash (%) versus calorific value (kcal/kg). The data used were taken from (Vincent (1979), Reid (1980), De Nys (1980), and Gigliotti (1983)).



| | | | | | | | |
|--------------------------------|--------------|--|------------|-----------|--|------------|------------|
| TUYA ENERGY INC. | | | | | | | |
| TUYA RIVER COAL PROJECT | | | | | | | |
| Drawn by: | CVS | DRY ASH vs. CALORIFIC VALUE (kcal/kg) | | | | | |
| Checked by: | JHP | | | | | | |
| Approved by: | JHP | | | | | | |
| Revision No. | | | | | | | |
| Dwg No. | TUY-A-CODASH | Date: | 2015-01-28 | Document: | | Figure No. | 5-1 |

SECTION 6 RESOURCE ESTIMATION

TEI has not carried out any resource estimates on the project during the reporting period.

Two historical resource estimates are available for the Thundercloud deposit. These were carried out by Petro-Canada after completion of their 1980 exploration program (De Nys, 1980 and Gigliotti, 1983) and the results are shown in Table 6-1. It should be noted that these tonnage estimates are not NI 43-101 compliant and should not be relied upon, but are cited here for historical context.

Table 6-1: Historical Coal Resource Estimates¹ – Thundercloud Deposit

| Assessment Report | Measured² (Mt) | Indicated² (Mt) | Inferred² (Mt) | Total (Mt) |
|--------------------------|----------------------------------|-----------------------------------|----------------------------------|-------------------|
| De Nys (1980) | - | 64 | 202 | 266 |
| Gigliotti (1983) | - | - | 214 | 214 |

¹ These resource estimates are not NI 43-101 compliant and should not be relied upon, but are cited here for historical context.

² These resource categories are historical and may not conform to current NI 43-101 resource classification criteria.

Ryan (1991) provided an estimate of the coal resource across a broader area projected to be underlain by the coal measures, (in order to determine the coal bed methane resource potential of the area). This estimate took into account the Thundercloud deposit, TR target area and the ground in between (see Figure 4-4). Ryan estimated a total potential of 600 million tonnes, of which 416 million tonnes were within 1600 m of surface. Again, it should be noted that Ryan’s tonnage estimate is speculative and is not NI 43-101 compliant and should not be relied upon, but is cited here for historical context.

SECTION 7 CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

The historic exploration activities carried out on the property along with the airborne geophysical survey undertaken during the reporting period demonstrate the potential existence of a substantial thermal coal resource that might be amenable to both surface and underground mining.

7.2 RECOMMENDATIONS

- Further detailed geological mapping along Tuya River, Little Tuya River and Mansfield Creek to confirm historic mapping and infill areas that have not yet been mapped in detail.
- Surface geophysical surveys, including reflective seismic, to define the eastern edge of the coal basin and to extend knowledge of the down dip extension of coal seams intersected in drillholes TDD79-01, TDD79-03 and TDD80-04.
- Additional helicopter-supported diamond drilling focusing on the Thundercloud Deposit in an attempt to produce a 43-101 compliant coal resource estimate. In addition to reconnaissance helicopter-supported diamond drilling focusing on the TR target area in an attempt to better define the structure of the area and confirm the presence of significant coal seams.

SECTION 8 EXPENDITURES

The expenditures for the 2012-2013 Tuya River Coal Project field program are summarized in the Table 8-1 below.

Table 8-1: COSTS (JANUARY 2012 – JANUARY 2015)

| <u>FIELD</u> | |
|-------------------------------------|-------------------|
| Airborne Geophysical Surveying | \$ 180,450 |
| Personnel (Colonial + Consultant) | 3,000 |
| Helicopter | 1,050 |
| Surveying & Base Maps | 3,500 |
| Travel, Accommodation, Room & Board | 2,900 |
| Permitting | 27,500 |
| Sub-Total | \$ 218,400 |
| <u>OFFICE</u> | |
| Geology (Staff & Consulting) | 78,500 |
| Environmental, Archaeology, ARD | 11,600 |
| CAD & Drafting | 12,100 |
| Sub-Total | 102,200 |
| Grand-Total | \$ 320,600 |

SECTION 9 REFERENCES

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- De Nys, F. J. G. (1980): Thundercloud Coal Project Technical Report, Petro-Canada Exploration Inc.; B.C. Ministry of Energy, Mines and Petroleum Resources, Coal Assessment Report 00243.
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- Young, G. K and N.F. Alley N.F, (1978): Landscapes of British Columbia. The Soil; Chapter 3.6. The Northern And Central Plateaus And Mountains BC Ministry of Environment, Resource Analysis Branch.. (Eds.), 1978, 197p Valentine, K.W.G., Sprout, P.N., Baker, T.E., Lawkulich, L.M

STATEMENT OF QUALIFICATION: JOHN H. PERRY, P.GEO.

I, John H. Perry, P.Geo., do hereby certify that:

- I am Chief Operating Officer for Tuya Energy Inc., with offices at 200-595 Howe Street, Vancouver, B.C., V6C 2T5
- I hold the following academic qualifications:
 - B. Sc. (Hons) Geology, University of Exeter, UK – 1972
 - Post-Graduate studies in Geology, University of Calgary, Alberta – 1972-1976
- I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia, (Member #19598) and I am a fellow of the Geological Society, London, UK.
- I have practiced my profession for over 39 years on coal, metallic and industrial mineral and gemstone projects within Canada and internationally. My experience with coal projects is extensive; it ranges from early exploration through resource/reserve delineation and includes multiple feasibility-level studies and work conducted within a producing coal mine. Coal projects have been undertaken throughout western Canada and internationally; this includes many projects located in British Columbia.
- I have overseen the preparation of this Coal Assessment Report entitled: “Tuya River Coal Project: 2012-2013 Exploration Program (for the period January 2012 to January 2015)”. Dated January, 2015.

Dated: January 26, 2015

(signed) “John H. Perry”

JOHN H. PERRY, P.Geo.