MAR 20080017: LIEGE WEST

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NTS 84A

ASSESSMENT REPORT FOR SHEAR MINERALS LTD.'S LIEGE WEST PROPERTY, NORTHERN CENTRAL ALBERTA: MINERAL PERMIT # 9302050133 and 9302050134

Approximate Property Location
Latitude: 56° 55' N
Longitude: 112° 25' W
60 Km Northwest of Fort McMurray, North-Central Alberta

For:
Shear Minerals Ltd.
Suite 100, 9797 – 45th Avenue
Edmonton, Alberta, Canada
T6E 5V8

And
977554 Alberta Ltd.
Suite 4700, 888 – 3rd Street SW
Calgary, Alberta, Canada
T2P 5C5

June 27, 2008
Edmonton, Alberta Canada

Pamela Strand, M.Sc., P.Geol.

ASSESSMENT REPORT FOR SHEAR MINERALS LTD.'S LIEGE WEST PROPERTY, NORTHERN CENTRAL ALBERTA: MINERAL PERMIT # 9302050133 and 9302050134

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ASSESSMENT REPORT FOR SHEAR MINERALS LTD.'S LIEGE WEST PROPERTY, NORTHERN CENTRAL ALBERTA: MINERAL PERMIT # 9302050133 and 9302050134

SUMMARY

APEX Geoscience Ltd. (APEX) was retained during 2006 as consultants by Shear Minerals Ltd. (Shear) on behalf of 977554 Alberta Ltd. to compile all existing geological and geophysical data for the Liege East (previously referred to as the Legend Property) and Liege West properties and for the preparation of an independent evaluation of the potential of the properties to host diamondiferous kimberlites. The Liege West property, currently held by Shear, 977554 Alberta Ltd, and Geolink Exploration Ltd and is comprised of 19 permits encompassing 144,814.02 Ha (357 843 acres), which are 370 km northeast of Edmonton. Shear's properties cover portions of Townships 89 to 92, Ranges 23 to 25, west of the 4th meridian and portions of Townships 89 to 92, Range 01, west of the 5th meridian. During the 2006-2007 program Shear spent a total of \$7,807.42 (not including GST) on exploration at the Liege West Property. The report covers only two permits, the permits owned by 977554 Alberta Ltd. Exploration on the Liege West property by APEX and Shear during the fall of 2007 consisted of ground checks to determine whether the targets were culture in preparation for drill testing for two Seismic targets A and B.

The regional setting in the Buffalo Head Hills area is considered favourable for the presence of diamondiferous kimberlites. The Liege West permits are underlain by Early Proterozoic to Archean basement of the Buffalo Head Craton. The local bedrock geology and the underlying Archean to Proterozoic crystalline basement in association with deep seated, penetrative structures, such as the Peace River Arch, likely provided a favourable environment for the ascent of kimberlitic magmas in the Buffalo Head Hills region. The regional cratonic setting is also considered favourable for the formation and preservation of diamonds in the upper mantle and their transport to surface in kimberlitic magma during periodic tectonic activity associated with movement along the Peace River Arch.

To date, previous exploration work by other companies recovered a number of diamond indicator minerals from glacial outwash gravel, recent fluvial gravel and till on and around Shear's properties. The importance of these indicator minerals is unknown due to the presence of variable thicknesses of glacial drift and the poor sampling density. A limited number of samples collected from and around the Liege West property have yielded significant numbers of indicator minerals including olivine, pyrope garnet, chromite and

picroilmenite. Therefore there is a strong likelihood that undiscovered kimberlites exist on or to the north of the Liege West property. The diamond potential of the Shear properties cannot be fully assessed with the limited amount of sampling that has been conducted to date. However, several airborne surveys were conducted and have delineated four priority targets for follow up in total on both the Liege West and Liege East properties.

After completion of the ground work, a total of two targets have been selected for follow up.

INTRODUCTION AND TERMS OF REFERENCES

APEX Geoscience Ltd. (APEX) was initially retained in 2006 as ongoing consultants by Shear Minerals Ltd. (Shear) to compile all existing geological, geophysical and geochemical data for the Liege West property and to assist in the ongoing evaluation of the potential of the property to host diamondiferous kimberlites.

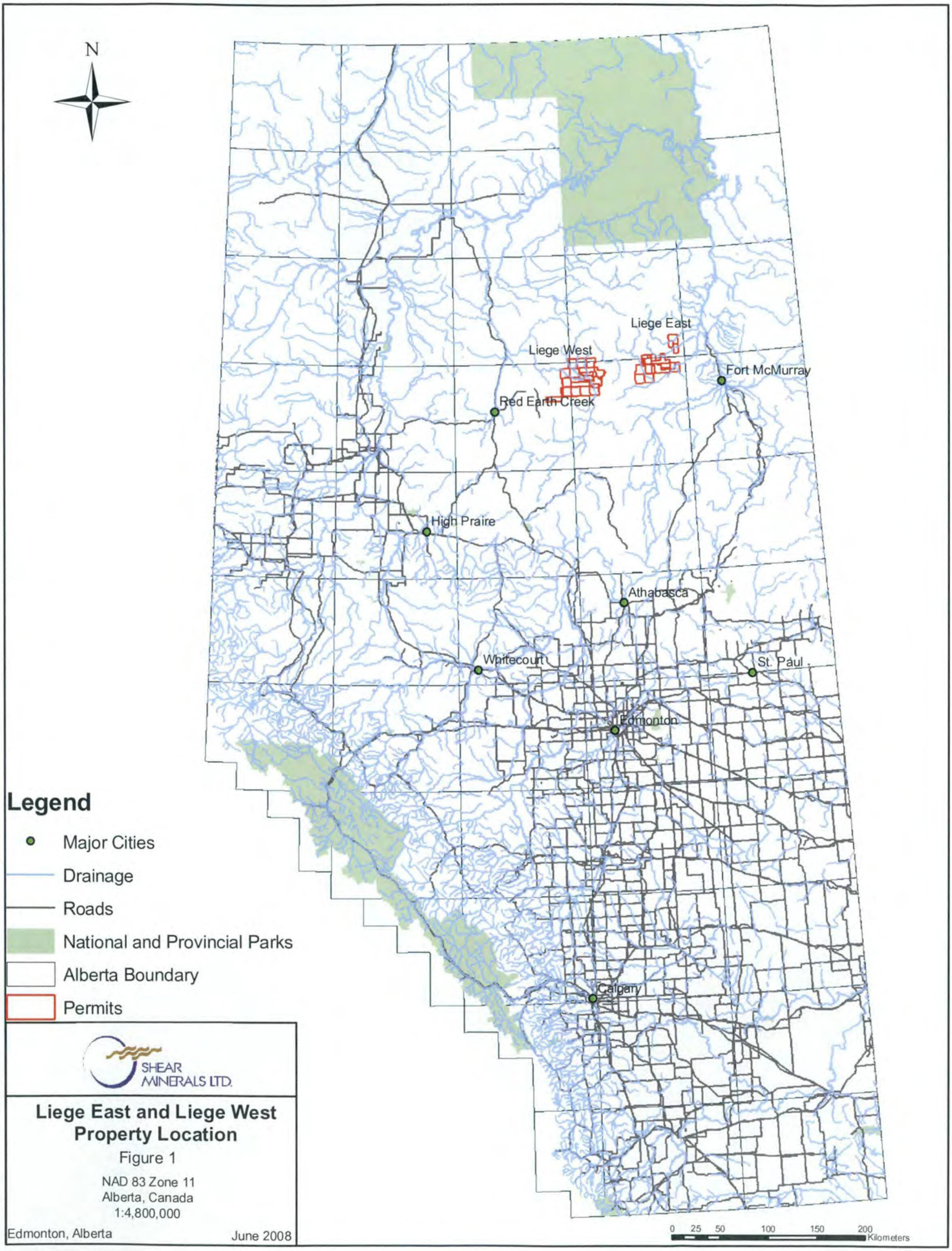
This assessment report documents the results of the data review by APEX and others to date on the Liege West property. Shear Minerals Ltd. spent a total of CAN $7,807.42 (not including GST) on exploration on the Liege West Property for ground checking with follow up ground geophysical surveying.

DISCLAIMER

The author, in writing this report, use sources of information as listed in the references. The report, written by Anetta Banas, M.Sc., GIT and Pamela Strand M.Sc., P.Geol., is a compilation of proprietary and publicly available information although no property visits have been completed by these authors. The government reports were prepared by a person or persons holding post secondary geology, or related university degree(s), prior to the implementation of the standards relating to National Instrument 43-101. The information in those reports is therefore assumed to be accurate. Those reports written by other geologists are also assumed to be accurate based on the property visits and data review conducted by the author, however are not the basis for this report.

PROPERTY DESCRIPTION AND LOCATION

The centre of the Liege West property is situated approximately 140 km (87 miles) west of Fort McMurray, Alberta and approximately 370 km (230 miles) northeast of Edmonton, Alberta (Figure 1). The property is located in North Central Alberta within 1:250 000 scale National Topographic System (NTS) map sheet 84A at 56°47' N latitude and 113°50' W longitude. The report concerns a


N
Liege East
Liege West
Fort McMurray
Red Earth Creek
High Praire
Athabasca
Whitecourt
St. Paul
Edmonton
Calgary
Legend
Major Cities
Drainage
Roads
National and Provincial Parks
Alberta Boundary
Permits
SHEAR MINERALS LTD.
Liege East and Liege West Property Location
Figure 1
NAD 83 Zone 11
Alberta, Canada
1:4,800,000
Edmonton, Alberta
June 2008
0 25 50 100 150 200 Kilometers

part of the Liege West property which consists of 2 metallic and industrial mineral permits totalling 6,656 Ha (Figure 2). A list of legal descriptions for the Liege West property is provided in Table 1. The Legal Description column is Meridian, Range, Township and Section respectively. Copies of the mineral permit agreements and the land titles are included in Appendix 1.

TABLE 1
LEGAL PERMIT DESCRIPTIONS*

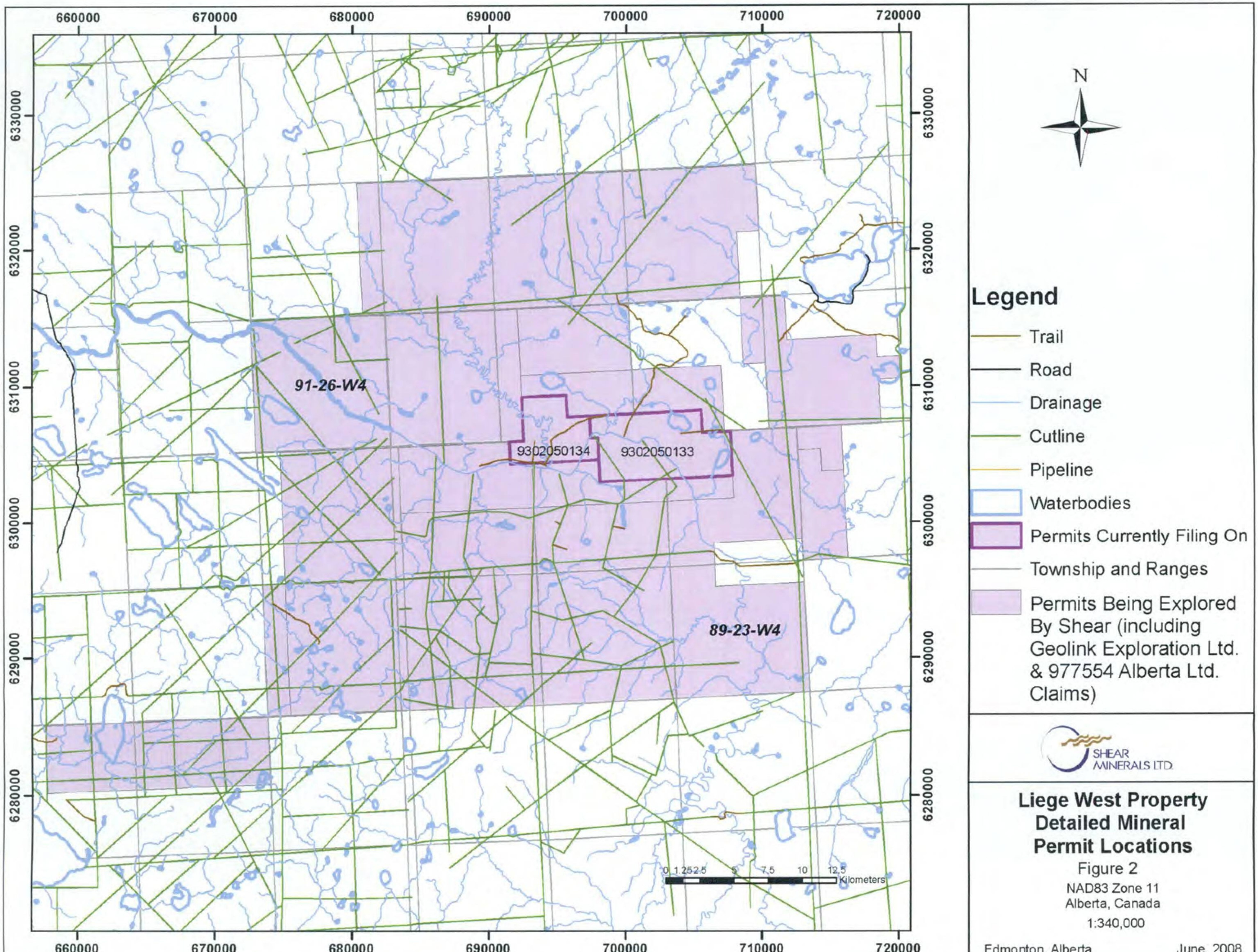
Permit Number	Record Date	Term Period	Legal Description	Permit Holder	Area (Ha)
Liege West Property					
9302050133	2002-03-24	10 years	90-23W4:28-33,91-23W4:04-06,90-24W4: 25-27, 34-36; 91-24W:01,02	977554 Alberta Ltd.	4,352
9302050134	2002-03-24	10 years	90-24W4:31-33,91-24W4:03-05,08,09;90-25W4:36	977554 Alberta Ltd.	2,304
				Total	6656

*based on land titles search

Alberta Mining regulations grant metallic mineral permits to the permittee in 14 year terms, during which at any time after the initial two year term, the mineral permit may be converted into a lease. Leases are granted in 15 year terms and may be renewed. A metallic mineral permit gives the permit holder the right to explore for economic mineral deposits of minerals, including diamonds, within the boundaries of the permit. The right to explore is subject to ALBERTA REGULATION 66/93 of the Alberta Mines and Minerals Act and the contained Metallic and Industrial Minerals Regulations within the act. The Standard Terms and Conditions for the permits are described in detail on Alberta Energy's website at http://www.qp.gov.ab.ca/Documents/REGS/1993_066.CFM.

A permit holder shall spend or cause to be spent with respect to the location of his mineral permit on assessment work an amount equal to $5 for each hectare in the location during the first two year period; an amount equal to $10 per hectare for each of the second and third two year periods; and an amount equal to $15 per hectare for each of the fourth and fifth two year periods. Mineral permits may be grouped and excess expenditures may be carried into the next two year period.

In addition to the financial commitment, a metallic mineral permit holder is required to file an assessment report that documents all of the work conducted as well as the results of the work to Alberta Energy. The assessment report must be filed within 90 days after the record date after each two year period.



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9302050133
89-23-W4
0 1.25 2.5 5 7.5 10 12.5 Kilometers
N
Legend
Trail
Road
Drainage
Cutline
Pipeline
Waterbodies
Permits Currently Filing On
Township and Ranges
Permits Being Explored By Shear (including Geolink Exploration Ltd. & 977554 Alberta Ltd. Claims)
SHEAR MINERALS LTD.
Liege West Property
Detailed Mineral Permit Locations
Figure 2
NAD83 Zone 11
Alberta, Canada
1:340,000
Edmonton, Alberta
June, 2008

ACCESSIBILITY, CLIMATE AND LOCAL RESOURCES

The Liege West property is located 370 km north of Edmonton and 140 km west of Fort McMurray and may be accessed via Provincial Highways 813 and 63, all weather and dry weather gravel roads, cart trails and seismic lines. Most portions of the mineral permits area may be accessed by four-wheel drive vehicles or all terrain vehicles (ATV's) during the summer and winter months. There are several airstrips in the area including one at Chipewyan Lake situated on the Liege West property. Accommodation, food, fuel, and supplies are best obtained in the town of Fort McMurray.

The Liege West property is located within a forest containing mainly mixed poplar, spruce and birch trees on a flat lying plateau with numerous small lakes and ponds, meandering rivers and creeks as well as swamps and marshes. . Elevation in the region varies from 400 m to 600 m (1312 ft to 1969 ft) above sea level (asl). Climate is typically long cold winters and short hot summers with annual temperatures ranging from -40°C in January to 25°C in July.

HISTORY: PREVIOUS EXPLORATION

Previous Exploration Buffalo Head Hills Region

Previous exploration in the Buffalo Head Hills region has focussed primarily on the search for hydrocarbon and aggregate deposits and for the determination of hydrogeological and geothermal regimes (Hackbarth and Nastasa, 1979; Mandryk and Richardson, 1988; Bachu *et al.*, 1993; Edwards *et al.*, 1994). Only recently has the focus of exploration been redirected towards diamonds (Dufresne *et al.*, 1996).

The Buffalo Head Hill region is well known for its wealth of energy resources. The primary established reserves are 47,196.4 x 10^3 m^3 of oil in 12 conventional fields and 808 x 10^6 m^3 of gas in 3 fields (Eccles *et al.*, 2001). The geology of the Utikuma Lake Keg River Sandstone A and Red Earth Granite Wash A oil pools, the largest pools in the area, was outlined by Angus *et al.* (1989), who suggested that the pools are hosted by Granite Wash sandstone reservoirs. The Granite Wash Formation is composed of interbedded sandstone, siltstone, and shale, with minor amounts of dolostone and anhydrite (Greenwalt, 1956), and is thought to resemble a diachronous basal nonmarine to shallow marine clastic unit, deposited farther from the Peace River Arch (Grayston *et al.*, 1964). The oil is trapped in Granite Wash sandstone reservoirs that pinch out against or drape over numerous paleotopographic features on the Precambrian surface and are sealed by the overlying Muskeg Formation anhydrite.

During 1950 to 1952, the Geological Survey of Canada (GSC) conducted aeromagnetic surveys of the Peerless Lake (NTS 84B) and Peace River (NTS

84C) map areas as part of a regional survey (Geological Survey of Canada, 1989 a, b). The surveys were flown at an altitude of 305 m (1,000 ft) with flight lines spaced every 1 mile (1.6 km) and cross-lines every 15 miles (24 km). Closer examination of the 1:250,000 scale aeromagnetic map for the Peerless Lake area indicates a predominance of north to northwest trending basement magnetic highs. These highs parallel the trend of the boundaries of the Buffalo Head Terrane. Unfortunately, the flight lines from the 1950 to 1952 surveys are too widely spaced to be useful for locating possible kimberlites. In addition, the digital data derived from these surveys is the result of manual digitization of the old maps and is not the true raw data, which would be required as part of any search for kimberlites.

The first strong indication that the region could host diamondiferous kimberlites came during September 1995, from sampling conducted by the Alberta Geological Survey (AGS). A single sample from a road cut yielded 152 possible pyrope garnets from 25 kg (60 lbs) of dark greyish brown, silty clay till. The sample was collected from a site about 45 km (28 miles) northwest of Red Earth Creek and about 127 km (78.9 miles) west of the center of Liege West property (Fenton and Pawlowicz, 1997). A total of 35 garnet grains were analyzed by electron microprobe; 27 were classified as Group 9 (G9) garnets according to Gurney's (1984) CaO versus Cr_2O_3 discrimination scatter plot. The same site was resampled in August 1996 and yielded 176 possible pyrope garnets, thus duplicating the high number of pyrope garnets initially recovered by the AGS (Pawlowicz *et al.*, 1998a). Based on later work conducted by the Buffalo Head Hills Joint Venture (BHHJV), a joint venture between Ashton Mining of Canada Inc. (Ashton), Alberta Energy Company (AEC) and Pure Gold Minerals Inc. (Pure Gold), it was determined that this till site is less than one kilometre (0.6 miles) southwest of their K4 Kimberlite. A number of other government surface and auger drillhole samples have also yielded high counts of Diamond Indicator Minerals (DIMs) in the Buffalo Head Hills (Pawlowicz *et al.*, 1998a,b; Eccles *et al.*, 2001).

Alberta Energy Company Ltd. (now known as EnCana Corporation) conducted a wide spaced (600 m or 2,000 ft line-spaced) high resolution, fixed-wing aeromagnetic (HRAM) survey in the search for oil and gas deposits over the Buffalo Head Hills during 1995. The survey identified several shallow based, short-wavelength, high frequency magnetic anomalies that also corresponded to areas of very strong diffraction's in seismic profiles (Rob Pryde, *personal communication*, 1998; Carlson *et al.*, 1999; Skelton and Bursey, 1999)). As a result, during October 1996 a joint venture option agreement, the Buffalo Head Hills Joint Venture (BHHJV), was signed by Ashton, AEC, and Pure Gold to investigate these anomalies.

In January 1997, Ashton announced a drill program to test 10 isolated geophysical anomalies in the Buffalo Head Hills area, approximately 35 to 45 km

(21 to 27 miles) northwest of the town of Red Earth Creek. An initial two drillholes, located on Ashtons anomalies 7B and 7C, penetrated olivine-dominated fragmental and tuffaceous volcanic rocks underlying glacial overburden at depths of 34.0 m (111.5 ft) and 36.6 m (120 ft), respectively. The rock types were interpreted by Ashton to represent kimberlite pipes (diatremes) that intruded the basement into a thick column of overlying younger sedimentary rocks and the preglacial surface (Ashton Mining of Canada Inc., 1997a). Petrographic studies of core from K7B and K7C confirmed that the drillholes intersected kimberlites and yielded indicator minerals such as chromite, eclogitic garnet and peridotitic garnet (Ashton Mining of Canada Inc., 1997b). By March 1997, a total of 11 kimberlites within a 100 km^2 area (36 square miles) had been discovered, 10 by drilling and 1 by bulldozer, including kimberlites K2, K4A, K4B, K4C, K5A, K5B, K6, K7A, K7B, K7C, and K14 (Ashton Mining of Canada Inc., 1997c). The first microdiamond analyses of samples collected from kimberlites K2, K4, and K14 were released in April 1997 and confirmed that the pipes were diamondiferous and more significantly, 3 samples totaling 152.5 kg (387 lbs) from kimberlite K14 yielded significant numbers of diamonds, including 139 microdiamonds and 11 macrodiamonds (Ashton Mining of Canada Inc., 1997d). Mineralogical analysis of indicator minerals from the Buffalo Head Hills kimberlites indicates that although they are not abundant, a significant number of favourable G10 pyrope garnets, some with exceptionally high chromium contents (up to 17.8 wt% Cr_2O_3), along with abundant diamond inclusion quality chromites, have been obtained from several of the kimberlites in the central and northern portion of the cluster (Carlson *et al.*, 1999; Hood and McCandless, 2003). In addition, a large number of the kimberlites yielded euhedral to subhedral xenocrystic (mantle derived) garnet and clinopyroxene suggesting that resorption had been limited, therefore, the potential to preserve any carried diamonds may be considered high (Carlson *et al.*, 1999). These results ushered in a new era in the history of resource development in Alberta. To date, 38 kimberlites were found on the joint venture property, 26 of which are diamondiferous. Seven kimberlites, referred to as Liege East kimberlites, were discovered north and northwest of the Liege West and Liege East properties by junior resource companies but none of these kimberlites are diamondiferous (Cavey and LeBel, 2003).

Previous Exploration: Shear's Liege West and Liege East Properties

Between 1997 and 2000, Ashton Mining of Canada Ltd. (Ashton) did exploration work on the former Rabbit Lake property which is now the Liege West property and one-third of Liege East property. Exploration work included several airborne and ground geophysical programs as well as diamond drilling of one target and a heavy mineral, kimberlite indicator mineral sampling program (Skelton and Willis, 2001; Ryziuk, 2004).

The geophysics exploration program on the former Rabbit Lake property included a fixed wing aeromagnetic survey, two detailed helicopter aeromagnetic surveys of selected anomalies, both conducted by High Sense Geophysics Ltd. and ground magnetic surveys on 18 targets (Skelton and Willis, 2001; Cavey and LeBel, 2003). The fixed wing aeromagnetic survey was flown with a terrain clearance of 100m and a 250m spacing, totaling 30,863 line-kms (Skelton and Bursey, 1999). The detailed helicopter aeromagnetic surveys were flown in 1998 with a terrain clearance of 50m and a 100m spacing over the property totaling in 2,079.48 line-kms covering 47 targets on 36 blocks (Skelton and Bursey, 1999). Ground magnetic surveys were conducted on the property between 1999 and 2000 on 18 selected targets using GEM System GSM-19 with two second measurement intervals and 50m station spacing (Skelton and Bursey, 1999; Skelton and Willis, 2001).

Ashton also conducted a sampling program on and around the properties, collecting 108 indicator minerals samples. Thirty-six (36) of these samples were collected on the Liege West property of which eight (8) samples were anomalous, including three adjacent samples (AL04-0138, 0139, 0140) with 6, 11 and 29 indicator mineral grains (Cavey and LeBel, 2003) and two (2) anomalous samples (A104-137, 0138) with a total of 15 indicator mineral grains were collected from the Liege East property (Skelton and Willis, 2001; Cavey and LeBel, 2003). The complete list of these samples' results is shown in one of Ashton's assessment reports (Ashton, 2001). Regional glacial ice direction in the area is from northeast of the Liege West property and with the known kimberlites (Figure 3) located northwest to north of the property could be the source responsible for the anomalous samples (Skelton and Willis, 2001).

Ashton only drilled one hole, DDHRL1-01, on one target on the Liege West property to test an aeromagnetic anomaly in February of 2000 (Skelton and Willis, 2001; Cavey and LeBel, 2003). The drillhole failed to intersect kimberlite to a depth of 94.5 metres resulting in termination of further work to be completed on the property and allowing the permits to expire in 2001.

977554 Alberta Ltd. (Alberta Ltd.) then acquired the Liege West and Liege East claims in 2002 based on information of the possibility of diamondiferous kimberlites in the area. Alberta Ltd. conducted several exploration work on the properties including indicator minerals sampling, airborne geophysics and diamond drilling.

Alberta Ltd. conducted work on the properties based on the results of seismic reflection surveys and drilling by Paramount Resources Ltd. (Paramount) who used the area for natural gas exploration (Cavey and LeBel, 2003). Seismic surveys are not a primary tool for diamond exploration, however, in a sedimentary environment the tool is useful in identifying a kimberlite diatreme through the sedimentary layering by interruptions and/or disruptions in seismic reflections (Cavey and LeBel, 2003). According to Skelton and Bursey (1999a) these seismic reflection surveys resulted in the identification of the K2, K4, K5, K6, K7, K32 and K92 kimberlites on the Buffalo Head Hills region west of the properties. The results from the surveys over the Liege West and Liege East properties revealed two seismic anomalies (Target A and B) on the Liege West property and five seismic anomalies (1, 2, 3, 4 and 5) on the Liege East property, which could potentially indicate kimberlite intrusive bodies (Cavey and LeBel, 2003; Figure 3). Seismic reflection surveys also aided in the geometry and structure of kimberlites (Cavey and LeBel, 2003) which determined the seismic signatures of the Buffalo Head Hills' kimberlites which are similar to the interrupted seismic reflections of the anomalies on both the properties. Seismic results from Anomaly A bears resemblance to the K5 pipe in the Buffalo Head Hills region (Skelton and Bursey, 1999a) based on the appearance of a "bed" (Cavey and LeBel, 2003). Prior drilling on the Buffalo Head Hills region which intersected kimberlites revealed that some of the kimberlites appeared to be beds rather than pipes therefore anomaly A could be a kimberlite bed or a pipe with a shallow root (Cavey and LeBel, 2003).

Alberta Ltd. collected seven indicator mineral sampling on the property of which only two samples were anomalous with more than two indicator mineral grains with a total of six diamond indicator minerals, five G1-G10 garnets and one chrome diopside (Ryziuk, 2004). Results of all seven samples are shown in Table 2.

TABLE 2

2003 Picked Results*

Sample Number	NTS Map	Possible Pyrope	Possible Chrome Diopside	Possible Olivine	Possible Ilmenite/ Chromite	Total	Other
LW03-1	84A/5	1	0	0	3	4	
LW03-2	84A/13	3	1	0	0	4	
LW03-3	84A/13	0	2	0	1	3	
LW03-4	84A/13	0	0	0	0	0	
LW03-5	84A/13	1	1	0	1	3	
LW03-6	84A/13	2	2	3	0	7	4
LWT03-1	84A/12	0	0	0	0	0	
TOTAL						21	

*based on information provided by Ryziuk (2004) and C.F.Mineral Research Ltd.

Fugro Airborne Surveys Corp. (Fugro) was contracted by Alberta Ltd. to conduct a helicopter borne magnetic and electromagnetic survey over the two targets on the Liege West property and a third known kimberlite target for seismic recognition (Ryziuk, 2004). A total of 29.2 line-kms was completed and results revealed target B to be a large pipe-like resistor (Cain, 2004) and two drillholes were drilled to test the target. The drillholes (DDH04-5 and DDH04-6) were drilled to a depth of 103.6 metres and no bedrock were intersected, recovering only unconsolidated till with no core recovery (Ryziuk, 2004) and no explanation for the seismic anomalies. The locations of the drillholes are listed in Table 3 and shown on Figure 3.

TABLE 3

Liege West's Drillhole Locations

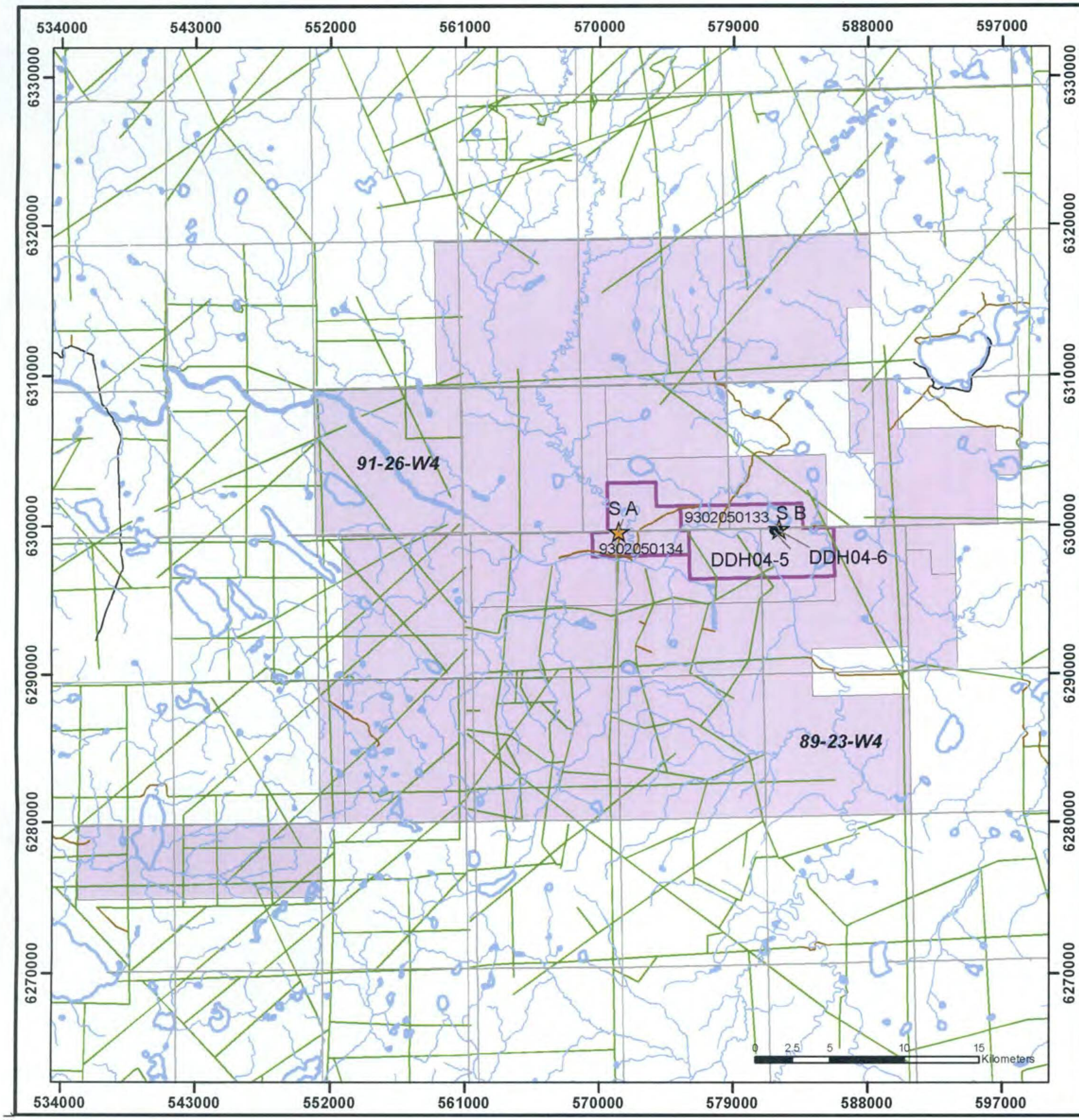
DDH Number	Easting (NAD27/Zone12)	Northing (NAD27/Zone12)	NTS	Depth Drilled (metres)
DHH04-5	337886	6304239	84 A/13	103.6
DDH04-6	338220	6304263	84 A/13	103.6

Despite poor results on Alberta Ltd.'s work, a number of priority geophysical anomalies and diamond indicator mineral anomalies were identified on and in the vicinity of the Liege West and Liege East properties. Many of these anomalies were not followed up. Wood (1999) reported the presence of a large number of anomalous stream sediment samples with up to 137 and 66 kimberlite indicator minerals in two separate drainages along the north-western boundary of the Liege West property.

Although the bulk of the kimberlite indicator minerals recovered by Monopros were chromite and ilmenite with a few pyrope garnets, Wood (1999) suggested that the grains were likely locally derived due to thin overburden and the limited drainage basin that most of the indicator was recovered from. Wood (1999) also suggested that a number of geophysical anomalies detected on the property could be kimberlites and be responsible for the indicator minerals in the drainages. The vast majority of these targets have not been ground surveyed or drill tested.

Government Diamond Indicator Mineral And Other Scientific Surveys

Diamond indicator mineral studies in the search for kimberlites were first conducted in the region by the AGS in 1993 (Fenton *et al*, 1994; Dufresne *et al*., 1996). This initial survey and all of the early reconnaissance work prior to the discovery of the Buffalo Head Hills kimberlites are reviewed in Dufresne *et al.* (1996). The Buffalo Head Hills area yielded a few diamond indicator minerals within the "Wabasca River Trend", which was defined as a northerly belt of sites yielding anomalous diamond indicator minerals centered around the Wabasca and Loon rivers in the vicinity of Red Earth Creek and the Liege West and Liege



N

Legend

- Drillholes
- Seismic Anomalies/Targets
- Township and Ranges
- drainage
- Road
- Trail
- Waterbodies
- Cutline
- Pipeline
- Permits Currently Filing On
- Permits Being Explored By Shear (including Geolink Exploration Ltd., 977554 Alberta Ltd., Sandswamp Exploration Ltd., & Rich Resource Investments Ltd. Claims)

SHEAR MINERALS LTD.

Liege West Property
Prior Drillholes and Targets

Figure 3

NAD83 Zone 11
Alberta, Canada
1:360,000

Edmonton, Alberta June, 2008

East properties (Dufresne *et al.*, 1996). The first indication that the region may host diamondiferous kimberlites came from sampling conducted by the AGS during September 1995, when a single till sample from a road cut in close proximity to the BHHJV's K4 Kimberlite yielded 152 possible pyrope garnets (Fenton and Pawlowicz, 1997). A number of surveys have been conducted in the region since then (Fenton and Pawlowicz, 1998a,b; Pawlowicz *et al.*, 1998a,b; Pawlowicz and Fenton, 2001), with varying degrees of success since the initial 1993 survey. A recent multidisciplinary study included the collection of 338 samples in the Peerless Lake, Peace River, Bison Lake and Wadlin Lake Map areas (NTS 84B, 84C, 84F and 84G) by Eccles *et al.* (2001) and by Friske *et al.* (2003). These surveys have resulted in the discovery of a number of diamond indicator mineral anomalies that potentially indicate the presence of a number of undiscovered kimberlites in the region.

Previous Exploration by Shear Minerals

Between February 17 and March 26, 2006, Firefly Aviation Ltd. completed a 3,898 line-km fixed wing high resolution airborne magnetic (HRAM) survey over the Liege West West property. The survey was carried out using a Cessna U206G aircraft, equipped with a rigid-mount tail boom, specially designed for geophysical survey operations, a high sensitivity magnetometer, a full on-board real time compensation recording computer, and related equipment.

The high resolution airborne magnetic survey was flown using parallel flight lines in a traverse line direction of 270 degrees with 150 meter spaced line intervals flown at a height of best-fit 60-meter drape mode elevation. A number of interesting high frequency magnetic anomalies (greater than 30 nT) were identified during the review of the preliminary data by APEX and Kit Campbell of Intrepid Geophysics (North Vancouver, BC). Using Geosoft Oasis Montaj 6.0 and ERMapper 6.3, the data was reviewed on a line by line profile basis to look for high frequency, short wavelength magnetic anomalies that reflect small, shallow source magnetic anomalies potentially related to geological features such as kimberlites. A total of 11 magnetic targets were identified as listed below (Table 4) on the Liege West property in the dataset and reviewed for kimberlite genesis potential (Dufrense and Mann, 1996). These targets are located in Appendix 3. A number of the magnetic anomalies present in the survey were identified to be the result of man-made culture or part of linear arrays, most likely related to pipelines or oil and gas wells in the area. Seven of the anomalies were ground checked for culture in 2007 – only one was possibly a result of an old well head (LG004) and due to partial snow cover it is recommended that this target be ground checked in the summer season before any additional work is conducted on it.

The two seismic anomalies (Target A and Target B) did not have corresponding magnetic anomalies from the airborne survey but remain priority targets as not all kimberlites are magnetic enough to be visible on the magnetic surveying In order to proceed with additional more costly detailed work such as additional ground geophysical methods (ie: non magnetic) or drilling, it was determined whether any culture existed at Target A and Target B. The original seismic sections are shown in Appendix 3. All targets that remain unexplained after ground truthing, should be followed-up with gridding and detailed ground magnetic surveys to look for very subtle signatures and, if required, drilling. In regards to the seismic anomalies, alternative geophysical methods such as ground gravity or electromagnetics should be investigated to explain the reason for the seismic discontinuities.

In 2007 three ground geophysical surveys were completed on targets LG004, LG006, LG011. All are recommended drill targets, with two being the highest rank of priority 1.

TABLE 4
LIEGE WEST GEOPHYSICAL TARGET LISTING

Magnetic Targets	Easting Zone 12 Nad 1927	Northing Zone 12 Nad 1927	Ground Check Y/N	Ground Magnetic Survey Y/N	Final Rank
LG001	339332	6312983	N	N	
LG002	342848	6309066	N	N	
LG003	345736	6294726	N	N	
LG004	334385	6295681	Y	Y	
LG005	329186	6299423	Y	N	
LG006	323460	6295781	Y	Y	1
LG007	324164	6295781	Y	N	2
LG008	328508	6298795	Y	N	
LG009	329161	6296685	Y	N	
LG010	333481	6297815	Y	N	
LG011	325193	6313260	N	Y	2

GEOLOGICAL SETTING

Precambrian Geology

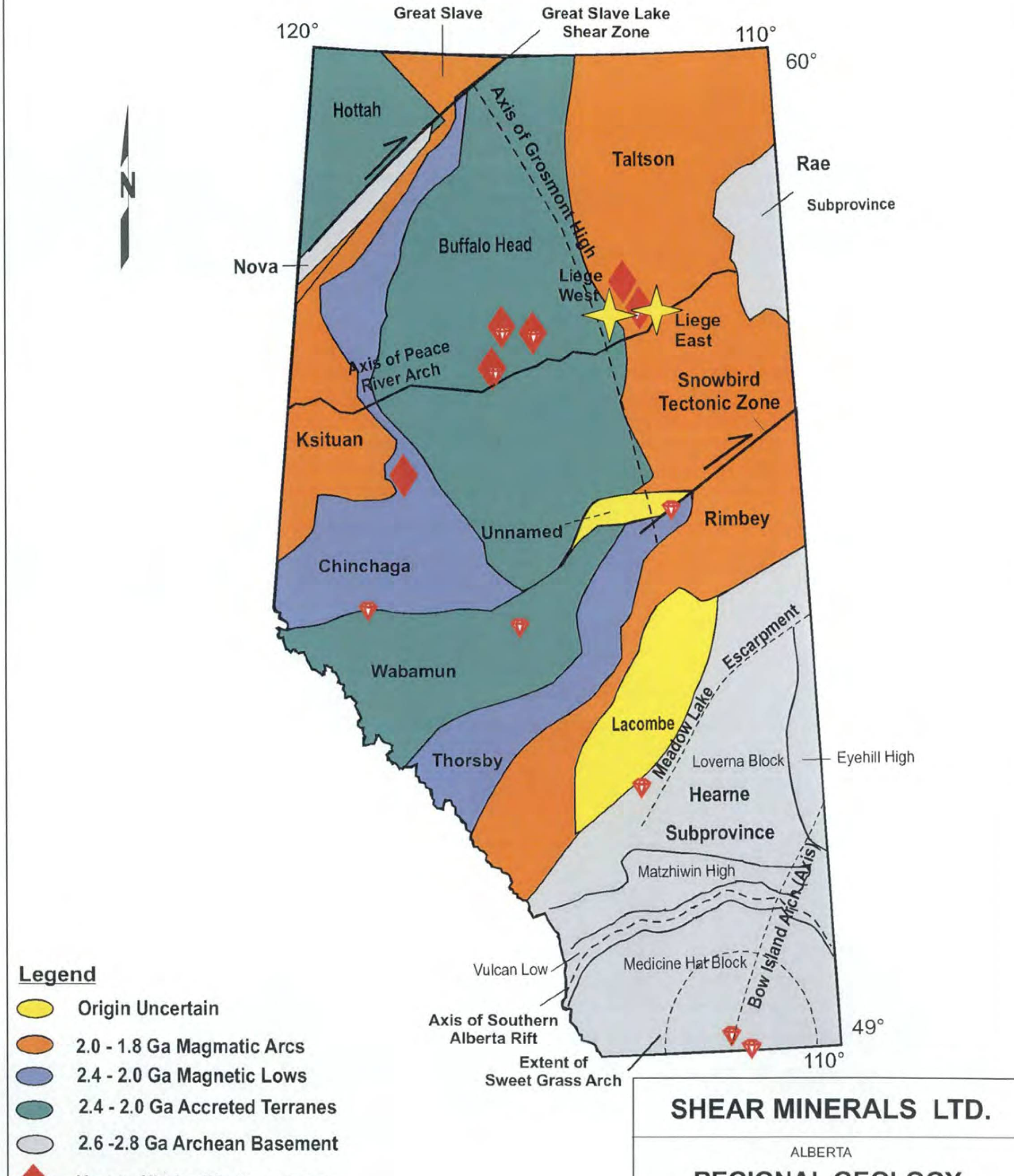
The Liege West property lies near the northeastern to eastern edge of the Western Canadian Sedimentary basin within the central segments of the Peace River Arch (Figure 4). Precambrian rocks are not exposed within the Buffalo Head Hills region. The basement underlying the Peace River Arch (PRA) is comprised of several terranes, including the Buffalo Head and the Chinchaga, both of which were accreted between 1.8 and 2.4 billion years (Ga) ago and collectively form the Buffalo Head Craton (Ross *et al.*, 1991, 1998). Due to their relatively stable history since accretion, the Buffalo Head and Chinchaga terranes (Figure 4) have been and are currently the focus of extensive diamond exploration in northern Alberta. Ashton along with EnCana and Pure Gold have discovered at least 38 kimberlite pipes proximal to the center of the proposed Buffalo Head Craton (Figure 5). To date, 26 of the 38 kimberlites, discovered in the region by the Buffalo Head Hills Joint Venture, have yielded diamonds.

The Liege West property is underlain by basement comprised of the Buffalo Head Terrane (BHT). The BHT is an area of high positive magnetic relief with a north to northeasterly fabric (Villeneuve *et al.,* 1993). The diamondiferous Buffalo Head Hills Kimberlites and Grizzly's property lie near the geographic center of the Buffalo Head Craton (Figure 5). Part of the Churchill Structural Province (Rae Subprovince), the Buffalo Head Craton may represent either Archean crust that has been thermally reworked during the Hudsonian (Proterozoic) Orogeny (Burwash *et al.*, 1962; Burwash and Culbert, 1976; Burwash *et al.*, 1994) or an accreted Early Proterozoic terrane that may or may not have an Archean component (Ross and Stephenson, 1989; Ross *et al.*, 1991; Villeneuve *et al.*, 1993). Precambrian rocks intersected in drill core from the BHT comprise felsic to intermediate metaplutonic rocks, felsic metavolcanic rocks and high-grade gneisses (Villeneuve *et al.*, 1993). Even though Hood and McCandless (2003) suggest that the paucity of subcalcic pyrope garnets in the Buffalo Head Hills is consistent with Proterozoic crust and mantle, recent work by Aulbach *et al.* (2003), indicates that a number of geochemical aspects of the xenoliths from the kimberlites is indicative of the presence of Archean mantle beneath the Buffalo Head Terrane which was likely reworked during Proterozoic crust formation from 2.3 to 2.0 Ga. Seismic refraction and reflection studies indicate that the crust beneath the Buffalo Head Craton is likely between 35 to 40 km (21 to 24 miles) thick, a trait favourable for the formation and preservation of diamonds in the upper mantle (Dufresne *et al.,* 1996). The favourable nature of the Buffalo Head Craton has been confirmed by the discovery of 26 diamondiferous kimberlite pipes near the center of the craton.

Phanerozoic Geology

Overlying the basement in the Buffalo Head Hills region is a thick sequence of Phanerozoic rocks comprised mainly of Cretaceous sandstones and shales near surface and Mississippian to Devonian carbonates and salts at depth (Glass, 1990). Bedrock exposure within the permit block is limited primarily to river and stream cuts and topographic highs. Table 4 describes the upper units found in the region. Further information pertaining to the distribution and character of these and older units can be obtained from well log data in government databases and various geological and hydrogeological reports (Green *et al.*, 1970; Tokarsky, 1972; Vogwill, 1978; Ceroici, 1979; Glass, 1990; Mossop and Shetson, 1994).

Underlying the near surface Cretaceous units in the Buffalo Head Hills area is a thick succession of Devonian to Mississippian carbonates, calcareous shales and salt horizons (Mossop and Shetson, 1994). Several of the Devonian



(Modified after Ross *et al.*, 1991)

SHEAR MINERALS LTD.

ALBERTA

REGIONAL GEOLOGY

Scale 0 100 200 Kilometres

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FIGURE 4.

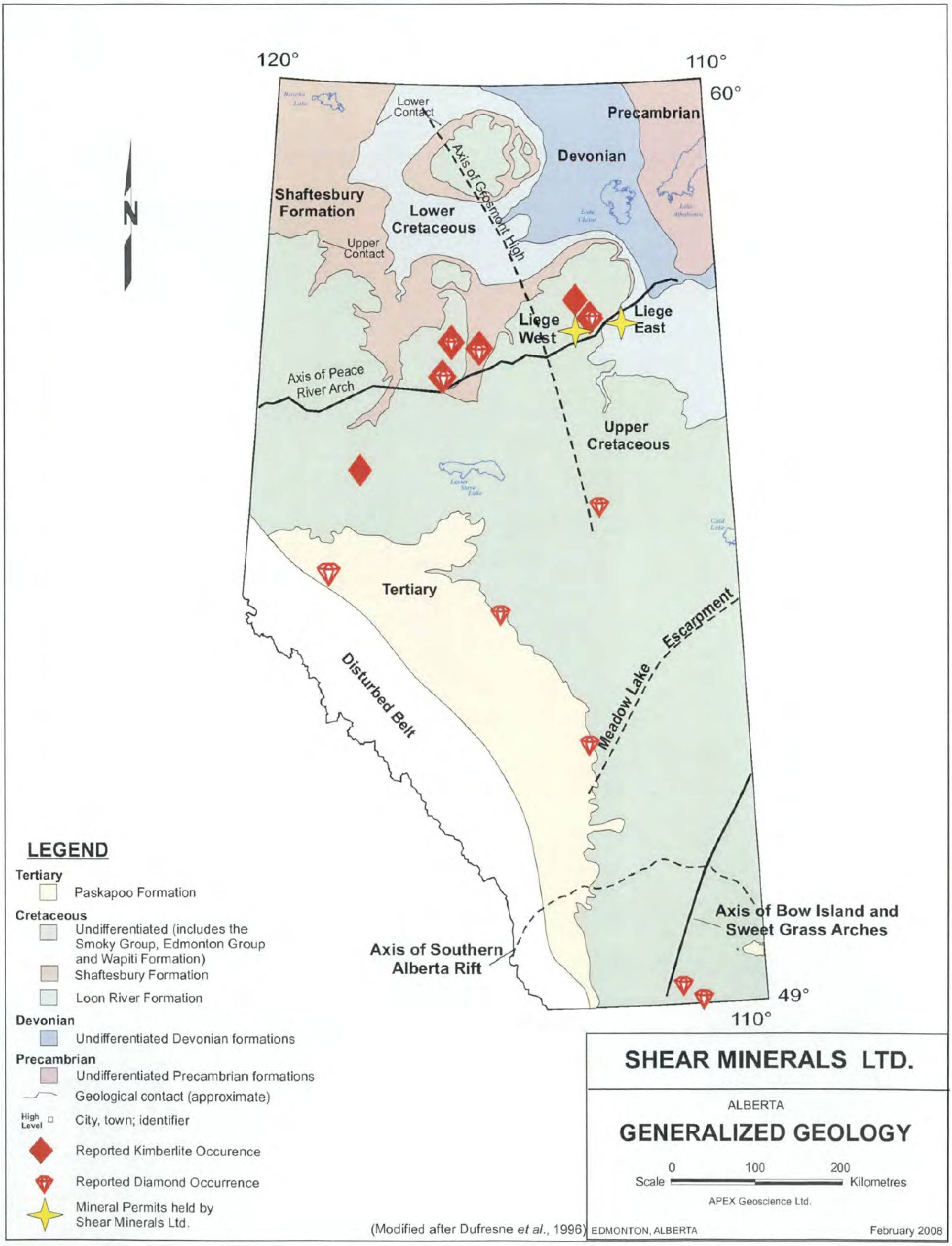

120°
110°
60°
Precambrian
Devonian
Lower Contact
Axis of Grosmont High
Shaftesbury Formation
Lower Cretaceous
Upper Contact
Liege West
Liege East
Axis of Peace River Arch
Upper Cretaceous
Tertiary
Disturbed Belt
Meadow Lake Escarpment
Axis of Bow Island and Sweet Grass Arches
Axis of Southern Alberta Rift
49°
110°
LEGEND
Tertiary
Paskapoo Formation
Cretaceous
Undifferentiated (includes the Smoky Group, Edmonton Group and Wapiti Formation)
Shaftesbury Formation
Loon River Formation
Devonian
Undifferentiated Devonian formations
Precambrian
Undifferentiated Precambrian formations
Geological contact (approximate)
High Level
City, town; identifier
Reported Kimberlite Occurence
Reported Diamond Occurrence
Mineral Permits held by Shear Minerals Ltd.
(Modified after Dufresne et al., 1996)
SHEAR MINERALS LTD.
ALBERTA
GENERALIZED GEOLOGY
0
100
200
Scale
Kilometres
APEX Geoscience Ltd.
EDMONTON, ALBERTA
February 2008

FIGURE 5.

carbonate units are part of the Grosmont Reef Complex, a large structure that extends in a northwesterly direction from east of Lesser Slave Lake to the N.W.T. (Bloy and Hadley, 1989). The Grosmont Reef Complex is likely the result of tectonic uplift along this trend during the Devonian. This structure, in conjunction with the PRA, may have played a significant role in the localization of faults and other structures that could have provided favourable pathways for kimberlite volcanism.

In general, the Cretaceous strata underlying the Liege West property is composed of alternating units of marine and nonmarine sandstones, shales, siltstones, mudstones and bentonites. The oldest documented units exposed in the permit area belong to the Shaftesbury Formation, a sequence of Upper Cretaceous shales. However, older units from the base of the Fort St. John Group, such as the Peace River and Loon River formations, may be exposed in river and stream cuts.

TABLE 5
GENERALIZED STRATIGRAPHY
BUFFALO HEAD HILLS REGION

SYSTEM	GROUP	FORMATION	AGE* (MA)	DOMINANT LITHOLOGY
PLEISTOCENE			Recent	Glacial till and associated sediments
TERTIARY			6.5 to Recent	Preglacial sand and gravels
UPPER CRETACEOUS	Smoky	Kaskapau	88 to 92	Shale, silty-shale and ironstone; includes the Second White Specks unit
		Dunvegan	92 to 95	Sandstone and siltstone
	Fort St. John	Shaftesbury	95 to 98	Shale, bentonites, Fish-Scale Member
LOWER CRETACEOUS	Fort St. John	Peace River	>98 to <105	Quartzose and glauconitic sandstones and silty shale.
		Loon River	98 to 105	Shale, siltstone and glauconitic sandstone

*Ages approximated from Green *et al.* (1970), Glass (1990), Dufresne *et al.* (1996) and Leckie *et al.* (1997).

Part of the Fort St. John Group, the Loon River Formation is Lower Cretaceous in age and is comprised of marine, dark grey, fossiliferous silty-shale and laminated siltstone. Nodules and thin beds of concretionary ironstone may be present within the unit. The Loon River Formation is correlative with the Spirit

River Formation. The upper contact is abrupt, but conformable with the Peace River Formation.

The Peace River Formation is Lower Cretaceous in age and comprises three members, Cadotte, Harmon and Paddy. Correlative with the Pelican and Joli Fou formations, the unit averages 60 m in thickness and contains abundant graptolites and starfish. The lowermost member, the Cadotte, comprises massive, clean, fine-grained quartzose sandstone with alternating bands of thin sandstone and shale. Concretions ranging from 3 to 5 m in diameter are common. The middle member, the Harmon, comprises a fissile, non-calcareous, dark grey silty-shale with thin interbeds of bentonite and siltstone. Both the Cadotte and the Harmon members are laterally extensive, relatively thick and marine in origin. The third member, the Paddy, is comprised of fine-grained glauconitic sandstone with silty interbeds in the lower portions. Thin coal beds and marine fossils may be present. The Paddy is laterally discontinuous and varies from marine to continental (deltaic) in origin. If the Paddy unit is intact, the upper contact is conformable, but abrupt with the Shaftesbury Formation. In many regions, the upper contact of the Peace River Formation is an abrupt hiatus.

The Shaftesbury Formation is lower Upper Cretaceous in age and is comprised of marine shales with fish-scale marker bed bearing silts, thin bentonitic streaks and ironstones. The upper contact is conformable and transitional with the Dunvegan Formation. The Shaftesbury Formation may be exposed along river and stream cuts. Evidence of extensive volcanism during deposition of the Shaftesbury Formation exists in the form of numerous bentonitic horizons throughout the formation, especially within and near the Fish Scales horizon (Leckie *et al.*, 1992; Bloch *et al.*, 1993). The deposition of the Shaftesbury Formation is also chronologically correlative with the deposition of the Crowsnest Formation volcanics of southwest Alberta (Olson *et al.*, 1994; Dufresne *et al.*, 1995) and with kimberlitic volcanism near Fort á la Corne in Saskatchewan (Lehnert –Thiel *et al.*, 1992; Scott Smith *et al.*, 1994). In many cases, the Ashton kimberlite pipes contain extensive volumes of Cretaceous mudstone, most of which is likely derived from the Shaftesbury Formation.

Deltaic to marine, feldspathic sandstones, silty shales and laminated carbonaceous siltstones, characterise the Dunvegan Formation (Glass, 1990). Thin beds of shelly material, coal, siltstone and bentonite may be present. The formation is rich in shallow-water fauna, including abundant molluscs. The Dunvegan Formation becomes more arenaceous and thinner eastwards, where it grades into the LaBiche Formation. The upper contact of the unit is conformable and transitional with the shales of the Kaskapau Formation of the Smoky Group. The Ashton pipes exist just above or near the contact between the Kaskapau and the Dunvegan formations (Dufresne *et al.*, 2001).

The youngest bedrock units belong to the Smoky Group (Glass, 1990). The Smoky Group is Upper Cretaceous in age and is comprised of thinly bedded, marine, silty shale with occasional ironstone and claystone nodules and thin bentonite streaks. The group is divided into three formations: (a) a lower shale unit, Kaskapau, which includes the Second White Specks marker unit (SWS); (b) a middle sandstone, named the Bad Heart; and, (c) an upper shale, Puskwaskau, which contains the First White Specks marker unit. Bedrock exposures in the "Bison Lake" Property are likely comprised of the Kaskapau Formation, in particular, the SWS or lower. Most of the upper portions of the Smoky Group have been eroded away during tectonic uplift, possibly associated with uplift of the PRA. The Kaskapau Formation contains abundant ammonite fossils and concretions. In addition, foraminifera are present in the lower arenaceous units (Glass, 1990). Exposures of the Smoky Group are generally limited to topographic highs and stream cuts within the Buffalo Head Hills. There is strong evidence of volcanism associated within the depositional time span of the Smoky Group around the PRA (Auston, 1998; Carlson *et al.*, 1999). The BHHJV's recently discovered Buffalo Head Hills kimberlites yield emplacement ages of 86 to 88 Ma (Auston, 1998; Carlson *et al.*, 1999).

Quaternary Geology

Data and information about the surficial geology in central to northern Alberta is sparse and regional in nature. Prior to continental glaciation during the Pleistocene, most of Alberta, including the Buffalo Head Hills region, had reached a mature stage of erosion. Large, broad paleochannels and their tributaries drained much of the region, flowing in an east to northeasterly direction (Dufresne *et al.*, 1996). In addition, fluvial sand and gravel was deposited preglacially in these channels.

During the Pleistocene, multiple southeasterly and southerly glacial advances of the Laurentide Ice Sheet across the region resulted in the deposition of ground moraine and associated sediments (Figure 5 in Dufresne *et al.,* 1996). The advance of glacial ice may have resulted in the erosion of the underlying substrate and modification of bedrock topography. Dominant ice flow directions within the Buffalo Head Hills region appear to be topographically controlled, following the south-southwest trend of the BHH (Fenton and Pawlowicz, 2000). In addition, topographic variations may have locally channelled ice flow towards the south to south-southeast east of the BHH. Glacial sediments infilled low-lying and depressional areas, draped topographic highs and covered much of the area as veneers and/or blankets of till and diamict. Localised pockets of deposits from glacial meltwater and proglacial lakes likely infilled areas of low relief (Fenton and Pawlowicz, 2000).

The majority of the Buffalo Head Hills area is covered by drift of variable thickness, ranging from 15 m to over 250 m (Pawlowicz and Fenton, 1995a, 1995b, 2005a, 2005b and Balzer and Dufresne, 1999). The vast majority of the property is thought to be covered with drift ranging from about 75 m to 150 m thick. Drift thickness may be thinner locally, in areas of higher topographic relief. Unfortunately, local drift thickness for Grizzly's Buffalo Head Hills properties can not be easily delineated due to the paucity of publicly available data for the region. Limited general information regarding bedrock topography and drift thickness in northern Alberta is available from the logs of holes drilled for petroleum, coal or groundwater exploration and from regional government compilations (Tokarsky, 1972; Mossop and Shetson, 1994; Pawlowicz and Fenton, 1995a, 1995b, 2005a, 2005b; Dufresne *et al.*, 1996). It should be noted that the drift thickness over the Buffalo Head Hills Kimberlites is extremely variable ranging from more than 120 m to kimberlites that outcrop or subcrop. Several of the kimberlites intersected in drilling to date exist as positive topographic features relative to the local bedrock surface beneath the glacial overburden. For example, the BHHJV's K6 Kimberlite was initially intersected beneath 13 m of overburden (Ashton Mining of Canada Inc., 1997c). The K6 Kimberlite yields depths of overburden of more than 70 m at the margins of the pipe and even thicker depths of overburden over the mudstone bedrock surrounding the pipe (Mr. B. Clements, *personal communication*, 2002). The K6 Kimberlite is one of a number of kimberlites in the Buffalo Head Hills that display this relationship. The implications of this are that in areas where the overburden is estimated to be 75 to 150 m, there is still a chance that any kimberlites found could be covered by substantially less overburden.

Glacial ice is believed to have receded from the BHH region between 15,000 and 10,000 years ago. After the final glacial retreat, lacustrine clays and silts were deposited in low-lying regions along with organic sediments. Rivers previously re-routed due to glaciation, re-established easterly to northeasterly drainage regimes similar to that of the pre-Pleistocene. Extensive colluvial and alluvial sediments accompanied post-glacial river and stream incision.

Structural Geology

In north-central Alberta, the PRA is a region where the younger Phanerozoic rocks, which overlie the Precambrian basement, have undergone periodic vertical and, possibly, compressive deformation from the Proterozoic into Tertiary time (Cant, 1988; O'Connell *et al.*, 1990; Dufresne *et al.*, 1995, 1996). This pattern of long-lived, periodic uplift and subsidence has imposed a structural control on the deposition patterns of the Phanerozoic strata in northern Alberta. In addition, this periodic movement has resulted in a rectilinear pattern of faults that not only is responsible for structurally controlled oil and gas pools, but may have provided potential pathways for later deep-seated intrusive kimberlitic magmas. Eccles *et al.* (2000) show that several of the Buffalo Head Hills kimberlites occur at the intersection of north and east-northeast trending lineaments likely related to underlying faults that have been reactivated during periodic tectonic activity associated with the Peace River Arch. Eccles *at al.* (2000) used a combination of very detailed digital elevation data and RadarSat data to identify the intersecting lineaments.

During the mid-Cretaceous and Early Tertiary, compressive deformation occurred as a result of the orogenic event that eventually led to the formation of the Rocky Mountains. The PRA was emergent during this period resulting in the reactivation of many prominent basement faults. The Phanerozoic rocks beneath the Red Earth Creek region lie along the axis of the PRA, and are underlain by and proximal to basement faults related to the Grosmont Reef Complex, which formed over the Grosmont High (Bloy and Hadley, 1989; Dufresne *et al.*, 1996). There is strong evidence that basement faults that have manifested themselves in the overlying Phanerozoic sedimentary succession may have controlled the emplacement of the Buffalo Head Hills kimberlites west-northwest from the Liege West property (Dufresne *et al.*, 1996; Leckie *et al.*, 1997; Eccles *et al.*, 2000). Similar structures observed on the property could have resulted from tectonic activity associated with movement along the PRA or the Grosmont High and therefore could have provided pathways for kimberlitic volcanism.

DEPOSIT MODEL

Kimberlites

Kimberlite is best described as a hybrid igneous rock (Mitchell, 1986, 1989, 1991; Skinner, 1989; Scott Smith, 1995). Kimberlites are igneous in nature since they have crystallised from a molten liquid (kimberlitic magma) originating from the earth's upper mantle. Kimberlite magma contains volatile gases and is relatively buoyant with respect to the upper mantle. As a result, pockets of kimberlitic magma will begin to ascend upward through the upper mantle and along a path of least resistance to the earth's surface. As the kimberlitic magma ascends, the volatile gases within the magma expand, fracturing the overlying rock, continually creating and expanding its own conduit to the earth's surface. As a kimberlitic magma begins to ascend to the earth's surface it rips up and incorporates fragments or xenoliths of the various rock types the magma passes through on its way to surface. As the magma breaks down and incorporates these xenoliths, the chemistry and mineralogy of the original magma becomes altered or hybridised. The amount and type of foreign rock types a kimberlite may assimilate during its ascent will determine what types of minerals are present in the kimberlite when it erupts at surface.

When kimberlitic magma reaches or erupts at the earth's surface, the resulting volcanic event is typically violent, creating a broad shallow crater surrounded by a ring of kimberlitic volcanic ash and debris ("tuffaceous kimberlite"). The geological feature created by the emplacement of a kimberlite is referred to as a diatreme or kimberlite pipe (Mitchell, 1986, 1989, 1991). In a simplified cross section a kimberlite diatreme appears as a near vertical, roughly "carrot shaped" body of solidified kimberlite magma capped by a broad shallow crater on surface that is both ringed and filled with tuffaceous kimberlite and country rock fragments (Mitchell, 1986, 1989, 1991).

Diamond Indicator Minerals

Diamonds do not crystallise from a kimberlitic magma: they crystallise within a variety of diamond bearing igneous rocks in the upper mantle called peridotites and eclogites. Peridotites and eclogites are each made up of a diagnostic assemblage of minerals that crystallise under specific pressure and temperature conditions similar to those conditions necessary to form and preserve diamonds ("diamond stability field"). Diamond bearing peridotite can be further broken down into three varieties which are, in order of greatest diamond bearing significance, garnet harzburgite, chromite harzburgite, and, to a lesser extent, garnet lherzolite. For a kimberlite to be diamond bearing, the primary kimberlitic magma must disaggregate and incorporate some amount of diamond bearing peridotite or eclogite during its ascent to the earth's surface. The type and amount of diamond bearing peridotite or eclogite the kimberlitic magma incorporates during its ascent will determine the diamond content or grade of that specific kimberlite as well as the size and quality of diamonds. Diamond bearing peridotite and eclogite occur as discontinuous pods and horizons in the upper mantle, typically underlying the thickest, most stable regions of Archean continental crust or cratons (Helmstaedt, 1993). As a result, almost all of the economic diamond bearing kimberlites worldwide occur in the middle of stable Precambrian (typically Archean) cratons. The Buffalo Head Hills Craton is an example of such a craton.

Diamond indicator minerals (DIMs) include minerals that have crystallised directly from a kimberlitic magma (phenocrysts), or mantle derived minerals (xenocrysts) that have been incorporated into the kimberlitic magma as it ascends to the earth's surface. Examples of DIMs are picroilmenite, titanium and magnesium rich chromite, chrome diopside, magnesium rich olivine, pyropic and eclogitic garnets. Varieties of garnet include G1, G2, G9, G10, G11, G12 pyropes as defined by Dawson and Stephens (1975), G9 and G10 pyropes as defined by Gurney (1984) and Gurney and Moore (1993) and G3, G4, G5, and G6 eclogitic garnets as defined by Dawson and Stephens (1975). From this paragraph on, reference to G1, G2, G3, G4, G5, G6, G11 and G12 pyrope garnets refers to Dawson and Stephens' (1975) classification and G9 and G10 refers to Gurney's (1984) G9 and G10 pyrope garnets of lherzolitic and harzburgitic origin, respectively.

DIMs are used not only to assess the presence of kimberlites in regional exploration programs but also to assess whether the kimberlites have the potential to contain diamonds. There are a limited variety of DIMs from which information pertaining to the diamond bearing potential of the host kimberlite can be gained. Typically, these are DIMs which have been derived from diamond bearing peridotite and eclogite in the upper mantle (Mitchell, 1989). The most common examples of these would include sub-calcic, G10 Cr-pyrope garnets (harzburgitic), G9 pyrope garnets (lherzolitic), Cr- and Mg-rich chromite (diamond inclusion quality or "DIF" chromite from chromite or spinel harzburgite), diamond inclusion quality "DIF" eclogitic garnets and chemically distinct jadeite clinopyroxene (diagnostic of diamond bearing eclogites).

Other indicator minerals that have crystallised from a kimberlitic magma can provide information as to how well the diamonds in a given kimberlite have been preserved during their ascent to surface. For instance, the presence of low iron and high magnesium picroilmenites in a kimberlite is a positive indication that the oxidising conditions of a kimberlitic magma were favourable for the preservation of diamonds during their ascent to surface in the kimberlitic magma.

Exploration

Due to the unique geometry of a kimberlite pipe and the manner in which the kimberlite has intruded a pre-existing host rock type, there are often differences in the physical characteristics of a kimberlite and the host rock. Sometimes these contrasting physical characteristics are significant enough to be detected by airborne or ground geophysical surveys. Two of the most commonly used geophysical techniques are airborne or ground magnetic surveys and electromagnetic (EM) surveys. A magnetic survey measures the magnetic susceptibility and EM surveys measure the electrical conductivity (or resistivity) of the material at or near the earth's surface. When magnetic or resistivity measurements are collected at regular spaced intervals along parallel lines, the data can be plotted on a map and individual values can be compared. If a geophysical survey is conducted over an area where the bedrock and overburden geology is constant and there are no prominent structures or faults, there will be little variation in magnetic or resistivity response. However, when a kimberlite intrudes a homogenous geologic unit and erupts on surface, there is often a detectable change in the geophysical signature or anomalous magnetic or resistivity response over the kimberlite diatreme. When the data are contoured the anomalous results often occur as a circular or oval anomaly outlining the surface or near surface expression of the diatreme.

The effectiveness of geophysical methods in kimberlite exploration is dependent on the assumption that the difference between the geophysical signature of the hosting rock unit and a potential kimberlite is significant enough to be recognised by the geophysical techniques available. There are many examples of economic kimberlites that produce very subtle, unrecognisable geophysical responses as well as non kimberlite geologic features and man made structures (referred to as "cultural interference") such as oil wells, fences, bridges, buildings which can produce kimberlite like anomalies. In addition, in areas of thick overburden, such as the Buffalo Head Hills region, sand and gravel with water and placer accumulations of heavy oxide minerals, can yield both 2magnetic and EM anomalies that are easily confused with those due to kimberlite. For these reasons, it is extremely important that other information such as DIM surveys be used in tandem with geophysical evidence to confirm whether there is other information to support the presence of a kimberlite pipe (Fipke *et al.*, 1995).

2006-2007 EXPLORATION

In 2007, Shear conducted ground checks on the two seismic targets.

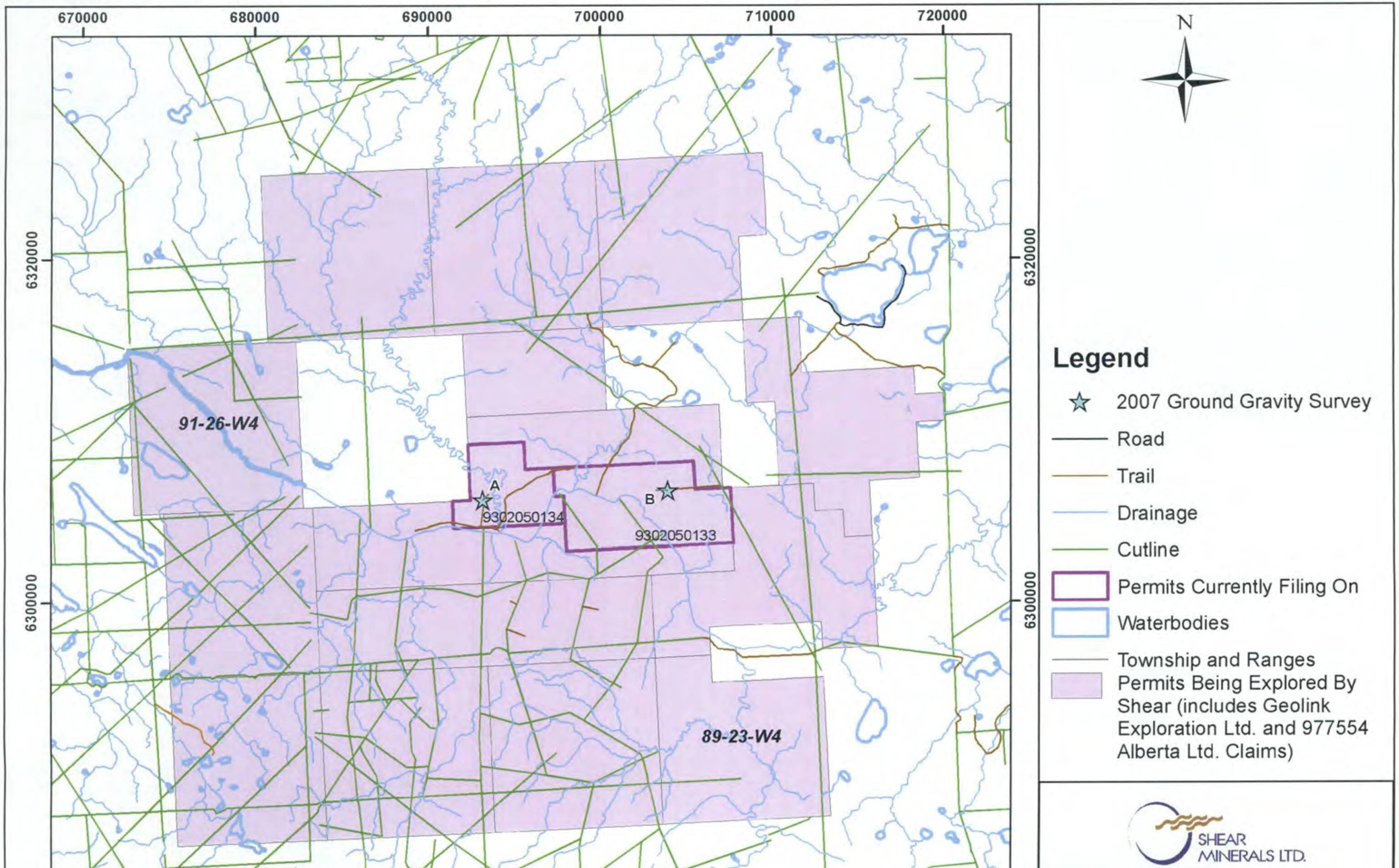
2007 Geophysical Target Inspection

In total two geophysical targets chosen off oil and gas seismic data (Target A and Target B; Table 6) were ground truthed to look for man made culture in September 2007, by Saz Yaqzan of Shear Minerals Ltd. (Figure 6, Appendix 2). Any geophysical anomalies that were determined to be caused by man-made culture, such as drill collars used in oil and gas exploration will not be investigated any further. Targets A and B could not be explained by ground checking and warrant follow-up work with ground geophysical surveys. Once additional ground geophysics is completed, priority targets will then be drill tested.

In total, the two priority seismic targets were visited by helicopter and given a preliminary evaluation as to first whether there was culture present and then secondly, if not, the quality of the target based upon topography, the presence of any vegetation anomalies and thirdly whether the anomaly should have ground geophysics or DIM sampling performed. Those targets of higher interest were given a priority of 1. Anomalies still unexplained and perhaps of lower interest on the basis of the quality of the geophysical target, the look of the ground situation (i.e. steep side of a hill or in an oxbow or drainage) the possibility that it might be related to overburden sand but still might rate a ground geophysics grid or a DIM sample from a nearby drainage were given a priority of 2. Low priority targets or targets not liked were given a priority of 3. Targets explained by man-made culture were given a priority of 4 (Appendix 2). In summary, there were two interesting anomalies ranked priority 2 that warranted ground geophysics follow up.

TABLE 6
LIEGE WEST'S SEISMIC TARGETS LOCATIONS

Seismic Targets	Easting Zone 12 NAD83	Northing Zone 12 NAD83
Target A	327383	6305037
Target B	338133	6304617



Liege West Property
2006-2007 Exploration

Figure 6

NAD 83 Zone 11
Alberta, Canada
1:300,000

Edmonton, AB June, 2008

EXPLORATION EXPENDITURES

The cost to conduct 2007 exploration program within the Liege West Property was CAN $7,807.42 (not including GST).

CONCLUSION AND DISCUSSIONS

The regional setting for Shear's Liege West property is considered highly favorable for the presence of diamondiferous kimberlites. The permits are predominantly underlain by Early Proterozoic to Archean basement of the Buffalo Head Craton. The local bedrock geology and the underlying Archean and Proterozoic crystalline basement in association with Phanerozoic structures, such as the Peace River Arch, likely provided a favorable environment for the formation and ascent of kimberlitic magmas in the Buffalo Head Hills area. This regional geological and structural setting is also considered favorable for the formation of kimberlitic magma in the upper mantle and its ascent to surface during periodic tectonic activity associated with movement along the Peace River Arch and the Grosmont High. Significant crustal thickness (35 to 40) underlying the area in combination with a number of important Gurney (1984) G10 subcalcic pyrope garnets are a strong indication that the area was underlain by upper mantle suitable for the formation and preservation of diamonds. This is confirmed with the discovery of at least 26 diamondiferous kimberlite pipes to date in the Buffalo Head Hills area by the BHHJV.

Limited bedrock exposures have been observed and reported within the area due to presence of extensive glacial deposits. Local bedrock exposed in the area or intersected in near surface drilling is age correlative to bedrock in other parts of the Buffalo Head Hills that has been intruded by kimberlites. The glacial history for the Buffalo Head Hills region is very complex with regions of thick glacial drift, extensive glacial gravel and evidence of extensive glacial tectonism. Drift thickness is known to range from less than 25 m (80 ft) to greater than 250 m (820 ft) with multiple layers of till and glacial outwash. The complex glacial deposits and glacial history can be a serious impediment to exploration for kimberlites. Future exploration programs for kimberlites and diamonds in the Buffalo Head Hills area should include a full compilation of the glacial deposits and drift thickness. Areas of thin drift and less glacial complexity should be the focus of any future exploration programs. Those areas underlain by thick drift in preglacial paleo-river channels should be omitted from future exploration.

Ground truthing of the seven priority targets identified from the 2006 fixed wing HRAM survey resulted in the classification of three anomalies for further follow-up. Detailed ground magnetics surveys were conducted over the three high priority anomaly areas using GSM-19 Overhauser magnetometers. The three grids were completed at a line spacing of 50 m.

RECOMMENDATIONS

Although historically there has been extensive oil exploration in the area, with respect to diamond potential, the Liege West property is still in the early stages of exploration. In addition, the results of current exploration completed by Shear Minerals Ltd. have shown the Liege West Property contains a number of geophysical targets that warrant further investigation. This illustrates the significant potential of Buffalo Head Craton and the Liege West property to host kimberlites. A systematic follow-up exploration program, including drilling, is warranted to search for diamondiferous kimberlites on the Liege West property

The recommended program is to conduct follow up ground geophysics on the two seismic targets in conjunction to those priority magnetic targets on the bordering agreement areas also referred to as the Liege West Property. In addition a complete re interpretation of the airborne magnetics geophysics should be completed to look for subtle features. If additional targets are chosen these would be targeted for spring ground checking and ground geophysical surveying. The estimated cost for the drilling would be $175,000 and $15,000 for the geophysical interpretation (excluding GST).

Shear Minerals Ltd.

Pamela Strand

Pamela Strand, M. Sc., P. Geol.

Edmonton, Alberta
June 27, 2008

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CERTIFICATE OF AUTHOR

I, Pamela D. Strand, Residing at 10828-126 Street, Edmonton, Alberta, Canada do hereby certify that:

1. I am the President and CEO and Director of Shear Minerals Ltd, Suite 100 ,9797-45 Ave, Edmonton, Alberta, Canada.

2. I am a graduate of the University of Toronto with a B.Sc. Degree in Geology (1988) and a graduate of the University of Western Ontario, London, Ontario with a M.Sc. in Geology (1993) and have practiced my profession continuously since 1986.

3. I am a Professional Geologist registered with APEGGA (Association of Professional Engineers, Geologists and Geophysicists), and NAPEGG and a 'Qualified Person' in relation to the subject matter of this report. I am also the Responsible Member under Shear's Permit to Practice and Professional Practice Management Plan.

4. I have not received, nor do I expect to receive, any interest directly or indirectly, in the Liege West Diamond Property, Alberta.

5. I currently have an interest in Shear Minerals Ltd in the form of securities.

6. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report of the omission to disclose which makes the Report misleading.

7. I have not visited the property that is the subject of this report.

8. I hereby consent to the use of this Report and my name in the preparation of a prospectus for the submission to any Provincial or Federal regulatory authority and for assessment reporting purposes.

Pamela Strand

Pamela Strand, M.Sc., P. Geol.
Edmonton, Alberta
June 27,2008

CERTIFICATE OF AUTHOR

I, Anetta Banas, residing at apt. # 301, 10635, 80th Ave, Edmonton, Alberta, Canada do hereby certify that:

1. I am a graduate of the University of Alberta with a BSc Degree in Geology (2002) and a MSc degree in Earth and Atmospheric Sciences (2005) and have practiced my profession continuously since 2006.

2. I am a Geologist-in-Training registered with APEGGA (Association of Professional Engineers, Geologists and Geophysicists).

3. I have not received, nor do I expect to receive, any interest directly or indirectly, in the Liege West Diamond Property, Alberta.

4. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report of the omission to disclose which makes the Report misleading.

5. I have not visited the properties that are the subject of this Report.

6. I hereby consent to the use of this Report and my name in the preparation of a prospectus for the submission to any Provincial or Federal regulatory authority and for assessment reporting purposes.

[redacted]

Anetta Banas, MSc., G.I.T.
Edmonton, Alberta
February 27, 2008

APPENDIX 1

METALLIC MINERAL AGREEMENTS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: June 10, 2008 2:47:05 PM

Agreement Number: 093 9302050133

Status: ACTIVE
Term Date: 2002-05-24
Agreement Area: 4352
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8065185
Client Name: 977554 ALBERTA LTD.
Address: 888 3 ST SW SUITE 4700
CALGARY, AB
CANADA T2P 5C5

LAND / ZONE DESCRIPTION

4-23-090: 28-33
4-23-091: 04-06
4-24-090: 25-27;34-36
4-24-091: 01;02

METALLIC AND INDUSTRIAL MINERALS

Alberta

MINERAL AGREEMENT DETAIL REPORT

Report Date: June 10, 2008 2:42:15 PM

Agreement Number: 093 9302050134

Status: ACTIVE
Agreement Area: 2304

Term Date: 2002-05-24
Continuation Date:

DESIGNATED REPRESENTATIVE

Client Id: 8065185
Client Name: 977554 ALBERTA LTD.
Address: 888 3 ST SW SUITE 4700
CALGARY, AB
CANADA T2P 5C5

LAND / ZONE DESCRIPTION

4-24-090: 31-33
4-24-091: 03-05;08;09
4-25-090: 36

METALLIC AND INDUSTRIAL MINERALS

APPENDIX 2

GEOPHYSICAL TARGET CHECKS

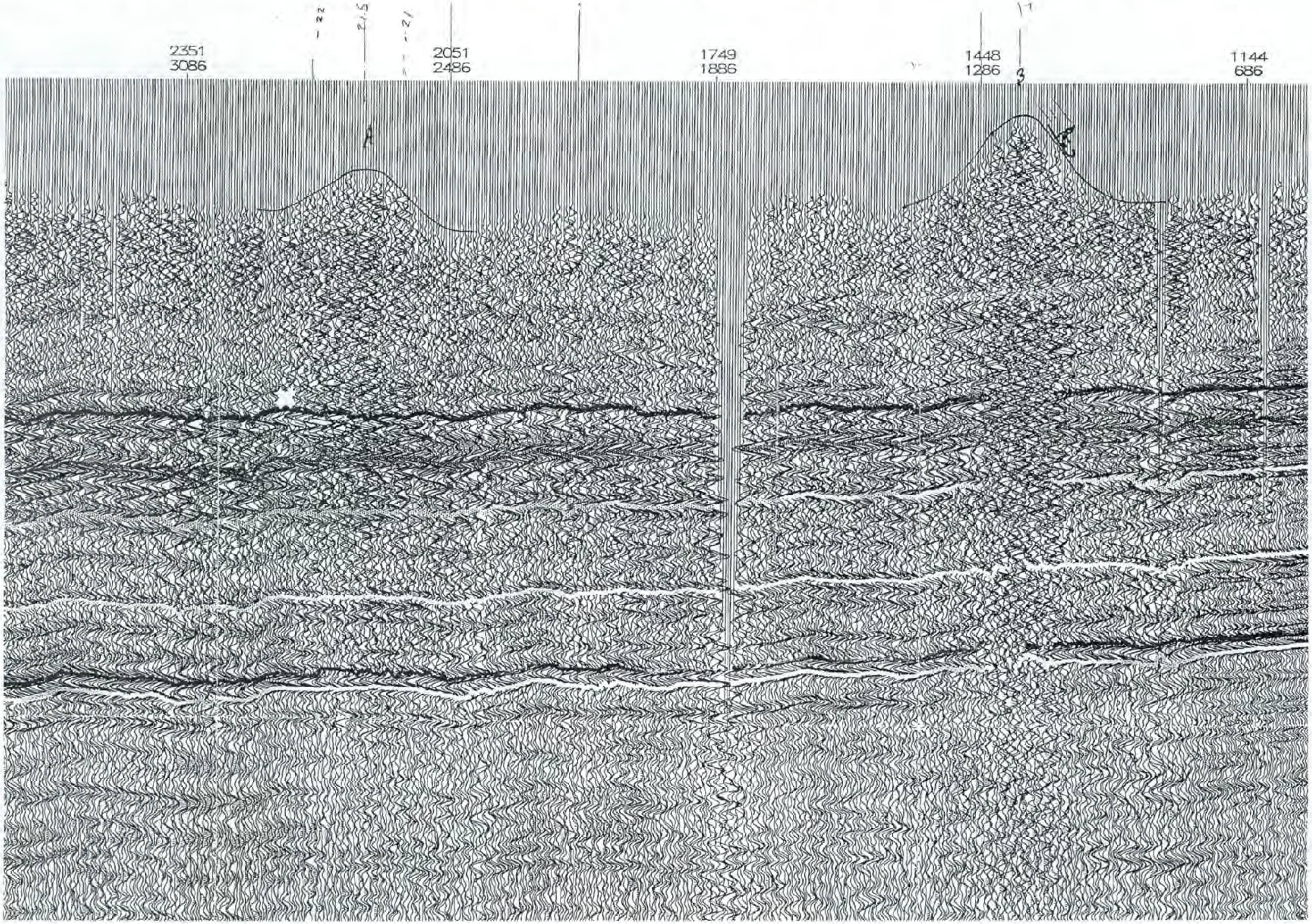
Observations of Liege West Anomalies		Vegetation Anomaly	Ranking	Date
Site	**Observation**			
Target A	Moderately treed muskeg	no	Drill Target (2)	September-07
Target B	Moderately treed muskeg with partial clearing	no	Drill Target (2)	September-07

Seismic Target A: area with tree coverage, no visible culture

Seismic Target b: area with tree coverage, no visible culture

APPENDIX 3

SEISMIC AND MAGNETIC GEOPHYSICAL MAPS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1448
1286
1144
686
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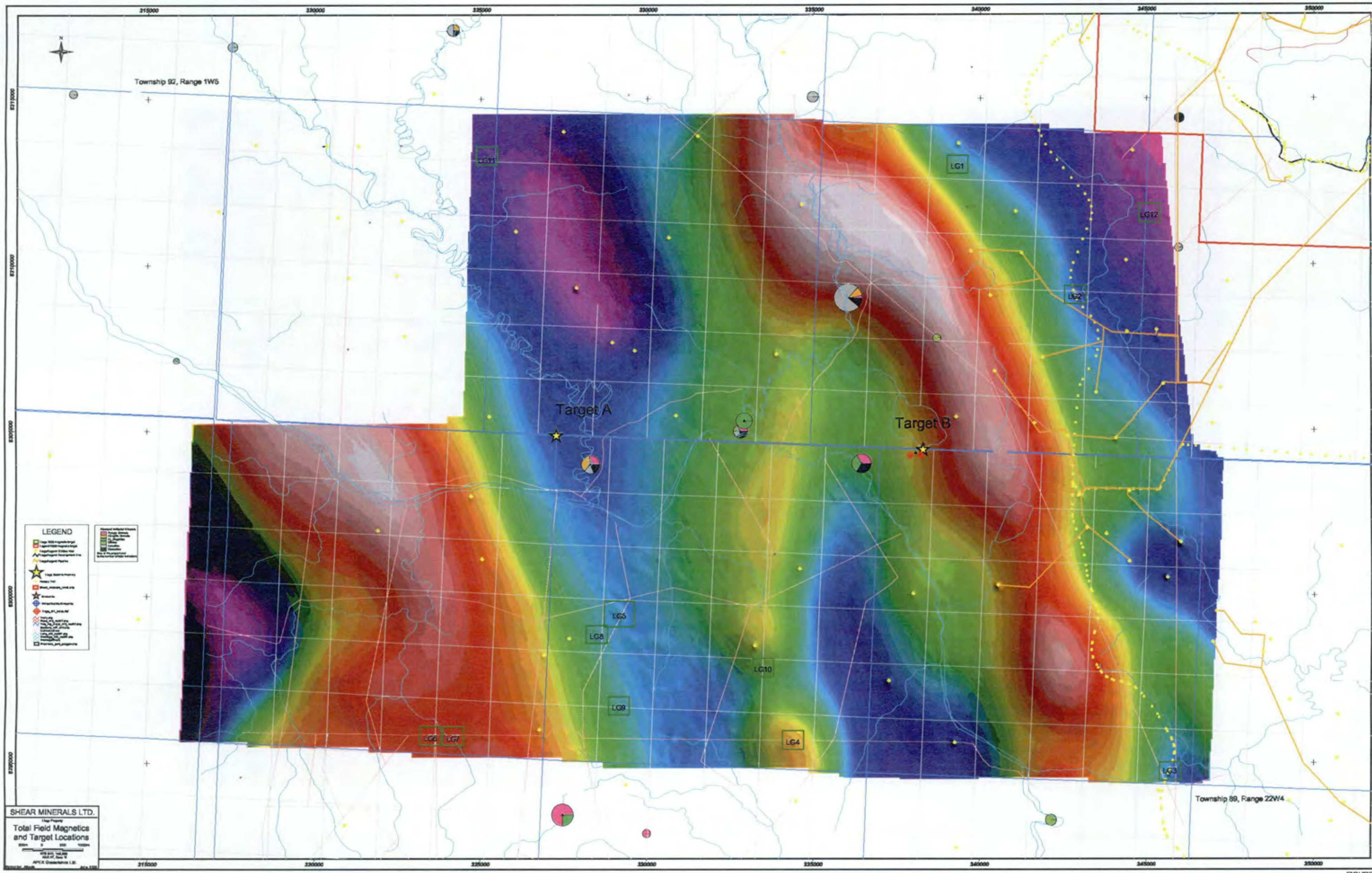
315000
320000
325000
330000
335000
340000
345000
350000
Township 92, Range 1W5
Target A
Target B
LG1
LG2
LG3
LG4
LG5
LG6
LG7
LG8
LG9
LG10
LG11
LG12
LEGEND
Township 89, Range 22W4
SHEAR MINERALS LTD.
Total Field Magnetics
and Target Locations

FIGURE 6

APPENDIX 4

EXPENDITURES

Liege West expenditures	Fall 2006-Spring 2008
Exploration Salaries	$1,945.19
Field Travel Costs	$780.74
Consultant Fees	$1,405.34
Field Supplies	$31.00
Helicopter	$3,513.15
Office support and communications	$132.00
Total including 10% administration cost	**$7,807.42**