REPORT

On completed geological and geophysical work on the site

№ ID01130, California creek, mapsheet number 116C01

16.06.2014 – 26.06.2014

Dawson District

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Preliminary geological and geophysical work to assess on the site № ID01130, California creek, mapsheet number 116C01, executed in 06. 2014.

Dawson District.

Goals and objectives of the preliminary geological and geophysical work:

The goal - preparation of materials for further implementation of mining and drilling operations.

The main tasks of geological work is to determine the depth and conditions of occurrence of deposits, the determination of its shape, size, depth of overburden and gold-bearing sands.

To refine placers this year were conducted electromagnetic geophysical survey method (radar probing) with the distance between geophysical lines 200-400 m Total 3,000 meters was performed geophysical lines.

Hand held shafts were made in the sides of alluvial deposits unaffected by permafrost.

Geophysical work was carried out by the electromagnetic method (radar sounding) geophysical equipment «PYTON» with two antennas at 50 MHz and 100 MHz.

The operating principle of GPR

Work unit subsurface sounding radar (in the usual terminology - GPR) is based on the classical principles of radar. Transmitting antenna devices emit ultrashort electromagnetic pulses (units and fraction of a nanosecond) with 1.0-1.5 period of quasi-harmonic signal and wide enough spectrum of radiation. The center frequency of the signal is determined by the type of antenna. Select pulse determined by the necessary probing depth and resolution of the instrument. For the formation the probing pulses used broadband excitation of the transmitting antenna by voltage change (shock excitation method).

Emitted from the medium, the pulse is reflected from being stored in objects or inhomogeneities in the medium, the medium has a different dielectric constant or conductivity is adopted receiving antenna is amplified in a broadband amplifier is digitized by an analog-to-digital converter and stored for further processing. The delay of the reflected signal is directly related to depth of objects and the speed of propagation of waves in a medium, which depends on its dielectric constant. To obtain radarogram necessary to record the reflected signals, consistently moving over the surface of the medium under study in a continuous or dot by dot mode.

After processing, the resulting information is displayed on the display in the form of the wave profile (number of equally spaced waveforms) or in the form of the density profile in black and white. It is also possible color rendering profiles.

Computer data processing system includes a hard "input" control of the measured values, the identification and elimination of write errors.

The basic version of the software package provides control GeoScan GPR in all modes and processing of information using the most universal methods of treatment without the use of three-dimensional graphics.

The professional version of the package provides control GeoScan GPR and provides the opportunity to spend almost all known methods of processing GPR data, including three-dimensional visualization.

Results represent the results of sensing multiple parallel profiles can be displayed on the monitor screen as three-dimensional image or a three orthogonal projections of any predetermined volume (Fig 1).

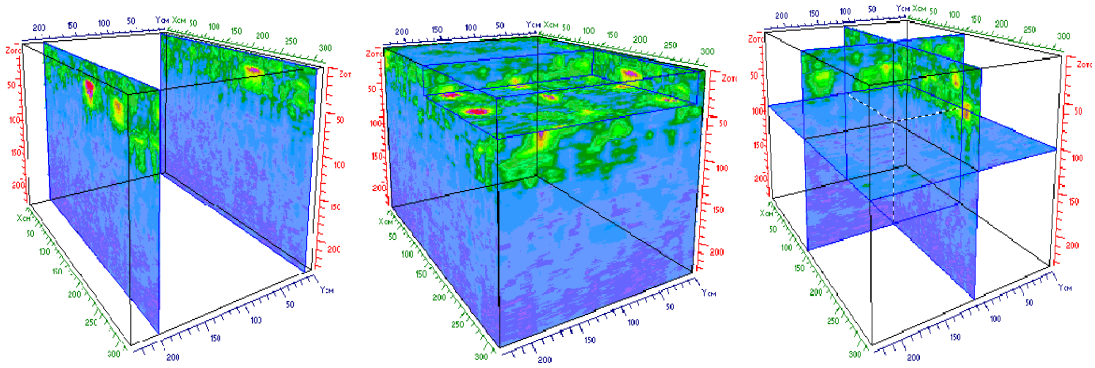

Fig. 2 Three-dimensional visualization

Different frequencies were used to achieve different effective probing depth.

In the data processing of field work to use specialized software.

This resulted in the radarogram (primary materials), which are subject to further interpretation as part of the subsequent cameral works.

According to the preliminary results of the geophysical survey, we can conclude about the extremely uneven dissemination of alluvial sediments and large variations in their capacity (from 1.0 to 4.0 m).

Border bedrock were traced according to preliminary results. Bedrock differ from alluvial sediments on the physical properties (dielectric constant) and, as a consequence - the nature of the wave pattern and a clear boundary of reflected electromagnetic waves.

For the purpose of verify the results geophysical surveys is supposed drilling.

At this stage, only made the field work, analysis of the results of field work scheduled to be completed end of 2014.

Preliminary results of geomorphological analysis (border terraces) are shown in Figure 2

Preliminary results for to some of geophysical lines shown in Figure 3 (Fig 3).

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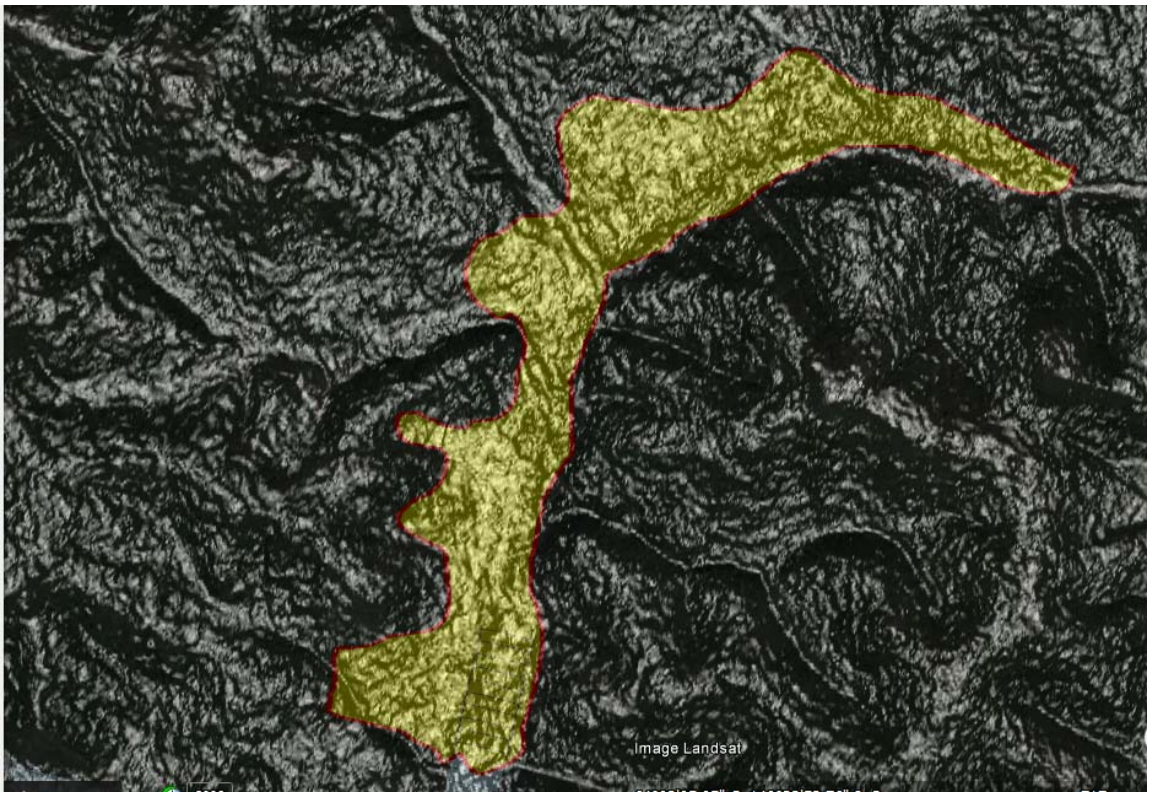
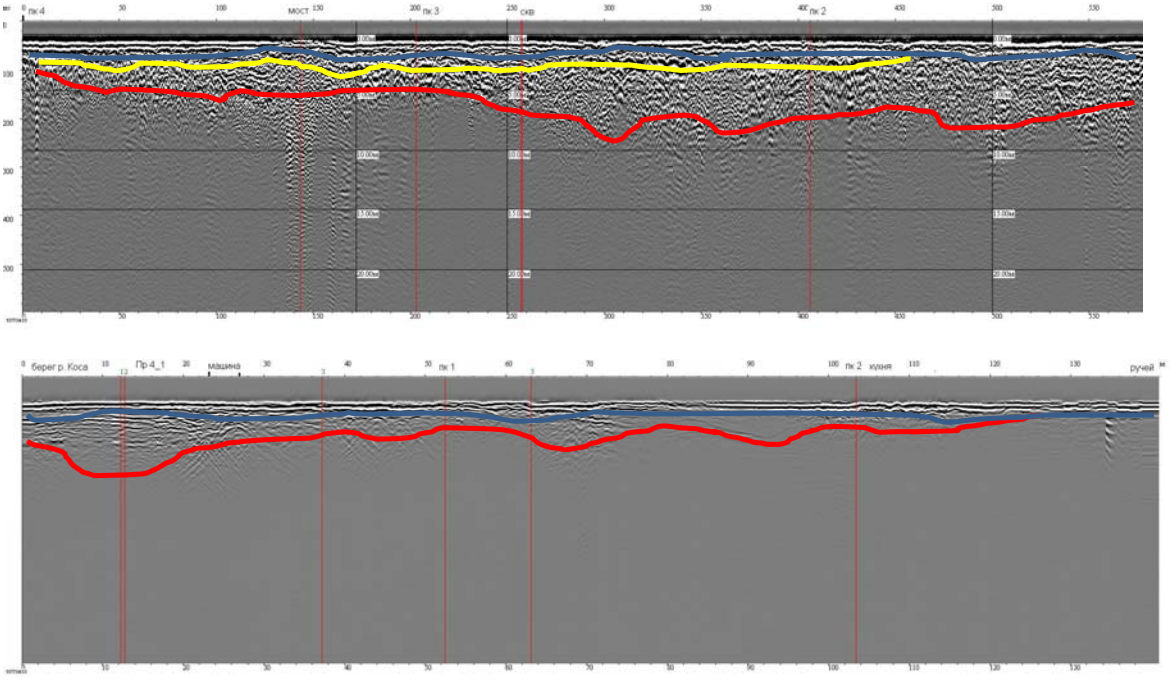
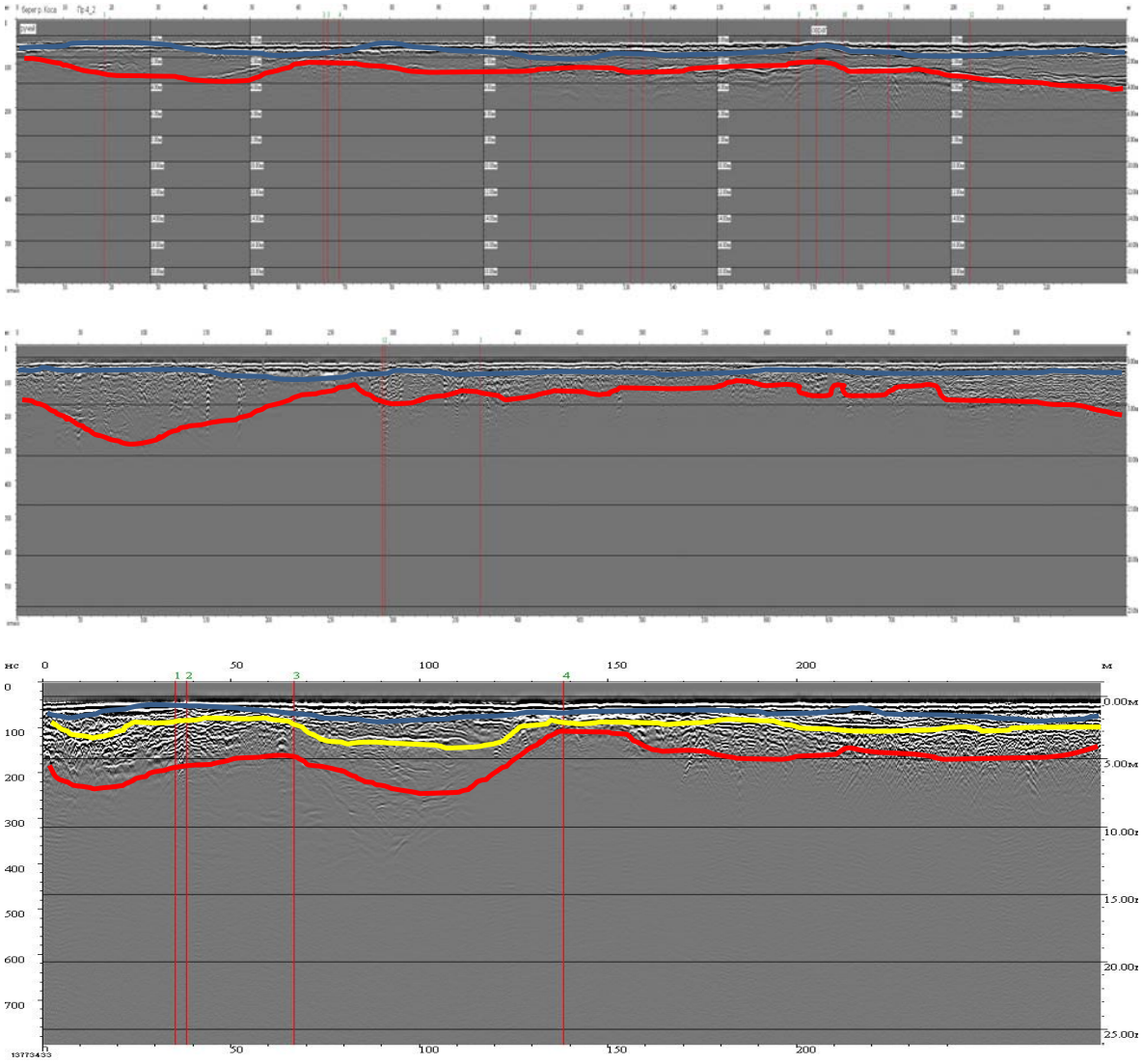
Figure 1



- border terraces?

Fig. 2 Preliminary results of geomorphological analysis (border terraces)





presumably permafrost

the upper limit of the producing formation

bedrock

Fig. 3 Examples of radiograms

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Summary of Boris Logutov

Perm State University, Department of Geophysics, 1984-1989 year,

Specialty - engineer geologist-geophysicist;

Perm Polytechnic Institute, Department of Economics and Management, 1991-1993 g,

Specialty - economist-manager;

Work as an engineer geologist-geophysicist - from 1988 to the present.

Explored deposits of (experience of work):

Chrome ore (Perm, Russia);

Placer gold (Perm Territory, Russia, Yukon, Canada);

Gold ore (Perm, Orenburg region, Russia);

Placers diamonds (Perm, Russia);

Ore diamonds (Arkhangelsk Region, Russia, Northwest Territories, Canada);

Copper ore (Orenburg region, Russia).

Boris Logutov

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