

Anatolij M. Gajdin, Jadwiga Maciaszek, Jacek Szewczyk: **The Influence of the Inundation of the Potassium Open Pit in Kalush on the Environment – Predictions and Facts** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 4

Factors generated chemical composition of water during the influence of the potassium open pit near the city of Kalush, Ivano-Frankiv region were investigated. It was stated that the destruction of the open pit edges, the beach and the bottom of the lake are isolated from salt deposition. The elimination of water mineralization takes place.

Keywords: open pit in Kalush (Ukraine), brine water, deformation

Robert Oleniacz: **Impact of the Municipal Solid Waste Incineration Plant in Warsaw on Air Quality** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 4

The only Polish municipal solid waste (MSW) incinerator has been operating within the Municipal Solid Waste Disposal Plant in Warsaw since 2000. In the paper selected results of the air quality impact assessment for this incinerator during an operating period of one year (2008) are presented. With respect to the incinerated waste amounts and emission levels, the analysed period can be considered typical for this facility. Assessment of the air quality impact was carried out by assessing air pollutant emissions in reference to the applicable emission limit values and by modeling atmospheric dispersion of these pollutants. It has been found that the MSW incineration plant in Warsaw is an insignificant air pollutant source and causes slight air pollution within its impact range. Pollutant concentrations caused in the atmosphere are many times lower than the permissible substance levels and reference values valid for a given substance. Planned as a result of the expansion of the incineration plant, the increase in its processing capacity while continuing to meet the

emission standards should also not cause a significant impact on air quality.

Keywords: municipal solid waste, incineration, MSWI, full-scale incinerator, grate furnace, air pollutant emissions, air quality, impact assessment, atmospheric dispersion modeling

Lesław Polny: **Prediction Cadastral Tax Implementation in the Aspect of Experience Other Countries** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 4

In Polish tax system higher tribute of property is dependent on parcel area or on usable surface of building (premises). This elaboration so is exploration a alternative fiscal solution, worthy implementation in current national socio-economic conditions. Exploration the possibilities of implementation cadastral tax in Poland based on review Polish legal conditions and on empirical data from countries, which have already been implemented effectively working tax of property values. This data acquired from European Statistical Office. Based on this, estimated base of cadastral tax. Based while on estimated cadastral values of parcels built single-family houses from cadastral district Wilkowyja, calculated tax rate on a regional basis. The estimation was performed using proprietary methodology that reflects fiscal capabilities of Polish society.

Keywords: mass appraisal, cadastral tax in Europe, cadastral tax in Poland, tax of properties, rate ad valorem tax

Barbara Prus, Tomasz Salata: **Influence of Physiographic Conditions on the Quality of Agricultural Production Area** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 4

The paper presents results of the analysis of the influence of physiographic conditions on the quality of agricultural production area. The research was based on the substantive and measurable aspect of agricultural production area. The purpose of the article was to analyze and evaluate resources of the agricultural production area for their suitability in agriculture. The paper analyzes the difficulty of cultivation due to declines in land and risk of soil erosion by surface water. These issues required taking into account land relief configuration. For this purpose, a digital terrain model was generated. The study was performed for the area of Tomice commune. The analysis of selected environmental elements of the agricultural production area was performed with the help of basic geoprocessing techniques. The article is

a continuation of previous analyses of the quality and usefulness of agricultural soils conducted by the authors. The first part includes an analysis of soil quality and agricultural utility. The paper also evaluates categories for soil protection and degrees of water logging.

Keywords: agricultural production area, difficulty of cultivation, soil erosion, geoprocessing

Tadeusz Szczutko: **Technology of Precision Calibration of Electro-Optical Rangefinders Using Laboratory Methods and Field Test Baseline** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 4

Rangefinders to obtain a length measurement error standard error determined the order of $m_D = \pm(1 \text{ mm} + 1 \text{ ppm})$ or less are in the group precision rangefinders. Rangefinders are applicable in the measurement of displacement, in the industrial measurement of short-range models, and as the length of the measuring equipment service points. Full use of this equipment requires a comprehensive examination. The paper gives examples of precision rangefinders research different companies: Leica, Trimble and Sokkia. Rangefinders Laboratory tests were performed in Metrologic Geodetic Laboratory of the Faculty of Mining Surveying and Environmental Engineering of AGH UST in Krakow. These measurements included the determination of cyclic errors in the 30 m based on the HP5529A laser interferometer. Field pattern of the length of a test baseline "Wisła" with a length of 1230 m is located on a stretch of the flood embankment of the river Vistula. It consists of 20 columns with heads measuring Kern enable forced centering. On the basis of measurements to determine the constant addition of the total set of EDM-reflector and rangefinder patch scale. Proposed the use of low-pass filter to optimize the calculation of atmospheric corrections to the measured length.

Keywords: test baseline, precision rangefinder, laser interferometer, calibration

Tomasz Świątoń: **Processing of Flange Measurements in Dimensional Control Tasks** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 4

In this paper, term "Dimensional Control" means collection of tasks performed by surveyors working for petroleum industry. It provides precise position and dimensions for various installations which are being measured. Dimensional Control

includes accurate determination of flange size and its deflections. Such analysis is an engineering tool that was commonly applied to numerous engineering problems for the last twenty years, but methodology itself has not been widely discussed and published so far.

This paper describes the characteristics of the method, where there is a proposed algorithm, allowing to calculate all necessary flange parameters. Flange position (Tie Point), deflection, bolts position and bolt bearing is here determined. Method is implemented and tested in GEONET DC software.

Keywords: dimensional control, horizontal bearing, vertical bearing, flange fit, flange deflection, flange measurement, bolt hole, flange face

Jerzy Wójcik, Stanisław Kowalik: **The Content of the Organic Carbon and Total Nitrogen in the Soil of the Reclaimed Repository of the Sulphur Mine “Machów” after Many Years of Agricultural and Forestry Management** • Geomatics and Environmental Engineering 2014, Vol. 8, No. 4

The paper presents the results of the studies over the formation of the content of organic carbon and total nitrogen in the profile of initial soil of forested and agriculturally managed areas of the repository “Machów”, after 30 years from carrying out reclamation measures.

The grounds making the external repository Sulphur Mine “Machów” are very heavy (domination of Krakowiec loam), have several per cent content of CaCO_3 and neutral or slightly alkaline reaction. Before starting the reclamation they were, like all the “raw” grounds poor in two basic elements constituting the soil fertility, and carbon (organic) and nitrogen (total). Thirty years old period of forest and agricultural management caused a significant increase of such components in the surface layers. There were also difference in the accumulation of C_{org} and N_{tot} depending on the way of the management of the reclaimed areas.

Keywords: repository, reclamation, organic carbon, total nitrogen