## 12 Data Verification (Item 16)

Section 12 is extracted in-part from Powertech's Technical Report titled "Updated Technical Report on the Centennial Uranium Project, Weld County, Colorado", dated February 25, 2010. Changes to standardizations, sub-titles, and organization have been made to suit the format of this Technical Report. SRK comments and opinions, where present, contain "SRK" in the pertinent sentences and paragraphs.

The historical database contains most of the data used to calculate resources for the project. This database consists of over 3,500 drillholes, which includes down-hole assay logs for 799 drillholes and 124 core holes, with supporting electric logs, lithology logs, assay reports and resource calculations. Numerous reports written by various departments within RME are also present. All drillholes were surveyed by a Registered Professional Land Surveyor, resulting in collar elevations and survey coordinates (Colorado Northern State Plane System) for each drillhole. A computer-generated listing of this survey information is part of the database.

RME utilized a Princeton Gamma-Tech (PGT) down-hole logging system to obtain in-situ chemical assays within the shallow resource areas in the southern portion of the Centennial Project. PGT had been used successfully on South Texas roll front deposits and RME was the first company to employ this technology to roll front deposits in Colorado. The PGT probe is a high-resolution gamma ray spectrometer that is capable of separating and identifying all of the gamma ray emitters present in a uranium deposit. It measures a 1 MeV (million electron volt) gamma ray from Protactinium-234 (a 24.1-day half-life), very promptly after the decay of Uranium-238. Since there can be virtually no geochemical mobilization in such a short time, the 1 MeV gamma ray is an excellent measure of the concentration of uranium, unaffected by disequilibrium. The PGT system was determined to be quite reliable for the in situ measurement of uranium, although when this technology was compared to the results of chemical analyses of core holes, it was determined that this logging technique was conservative, underestimating mineable resources by approximately 6%.

All historical drillhole intercept data from gamma logs were digitized by RME and converted to 0.5ft printouts. In addition, 1ft digital printouts are also available for the 799 down-hole PGT logs and the assay data of the 124 core holes. Individual databases for each resource area were developed using this digital data, along with recent intercept data from confirmation drilling.

## **12.1 Data Verification Procedures**

An overall assessment of the data used for the classification of resources into various categories is required by the CIM Definition Standards for Mineral Resources and Mineral Reserves. This assessment showed that historical data gathering and interpretation of the data was conducted by a well-respected and major uranium exploration company, with a highly qualified uranium exploration staff. The assessment also showed that at key points, professional geologic consultants reviewed and verified the results of the historical exploration programs. Numerous academic reports have also been published on geologic settings and uranium mineralization in and around the project area. Current interpretive work has been completed under the direction of Powertech's senior geologic staff. Powertech's Chief Geologist alone has over 40 years of uranium experience, including well field development assignments at several South Texas ISR facilities. All these factors provide a high level of confidence in the geological information

available on the mineral deposit and that historical drillhole data on the Centennial Project is accurate and useable for continued evaluation of the Project.

The author of the Powertech's resource NI 43-101 reports (Cary Voss) is in a unique position to verify that the historical data is valid and can be relied upon. Mr. Voss was the Exploration Manager for RME, which had a reputation in the uranium industry as a reliable and knowledgeable uranium operating company. He spent considerable time in the field overseeing RME operations and procedures. With respect to all data used in this resource evaluation, the author examined geologic data located in Powertech's Denver office; performed quality assurance checks of gamma logging data contained in resource databases/maps and prepared or reviewed geologic cross sections to assure continuity of geology and grade throughout the resource areas.

## **12.2 Data Confirmation**

Geological information and evidence used to support an assessment of the geologic and grade continuity of the uranium resources at the Centennial Project is derived from the interpretation and analyses of the results of historical and recent drilling and coring programs. This drillhole information is used to define both uranium resource areas and the geologic setting that contains these resources.

<u>**Confirmation Drilling**</u> - Powertech's confirmation drilling programs were successful in verifying RME's geologic and geochemical controls on the deposition of uranium mineralization within the Centennial Project. This drilling demonstrated that the uranium mineralization within the project area fits into a sandstone roll-front deposit model. Accordingly, the oxidized host sandstone encounters strong reducing conditions at depth and there is a consistent and predicable precipitation of uranium at the oxidation/reduction (redox) boundary.

Figure 12-1 is a cross section of Powertech confirmation holes located in Section 33, T10N, R67W in a northern resource area of the Centennial Project. This section illustrates the geochemical system associated with a sandstone roll-front uranium deposit and the concentration of uranium resources at the redox boundary. It also shows the location of this concentrated uranium mineralization with respect to a GT contour map of the resource area. The high-grade uranium encountered in the confirmation drilling corresponds to the higher GT contours based on historical drilling, thus demonstrating continuity of grade within this resource area.

Figure 12-2 is a frequency distribution plot from the same northern resource area, utilizing 230.5ft uranium intercepts from confirmation drillholes compared to an equal number of 0.5ft uranium intercepts from historical drillholes in the immediate area. The similar nature of the distribution curves indicate that the grades of uranium encountered in the Powertech drilling were comparable to the grades of the historical drilling. The slightly higher average grade of the confirmation drilling is due to the fact that these holes were located on a previously identified roll-front.

**Equilibrium Analyses** – Naturally occurring uranium  $(U_{238})$  is detected in the subsurface by gamma ray emissions from its radioactive daughter products. Uranium is in a state of equilibrium when these gamma ray emissions are equal to its chemical uranium values. It has been calculated that uranium and the gamma ray signature of its daughters are in equilibrium when the uranium remains stationary for approximately one million years. Along the oxidation/reduction boundary associated with a typical "roll front" uranium deposit, there is a natural and expected change in

the equilibrium state of uranium. Because these uranium deposits are dynamic, there is continual accretion of uranium under oxidizing conditions. This results in roll fronts exhibiting chemical depletion at the oxidized boundary and chemical enrichment further down gradient. These values can be graphed on an equilibrium plot to indicate if the subsurface uranium is in equilibrium or if there has been separation (mobilization) of the chemical uranium from the daughter products.

Figure 12-3 shows an equilibrium plot of  $U_{Gamma}$  and  $U_{Chemical}$  values of the mineralized intercepts of 0.02% U<sub>3</sub>O<sub>8</sub> or greater from four core holes in the northern Section 33 resource area. Overall, the character of the plot demonstrates a state of equilibrium – with some chemical enrichment. This is to be expected when the location of the core holes are reviewed. They were all located to retrieve reduced core from the center or adjacent to the "roll front". Accordingly, the chemical assays showed equivalent to positive chemical:gamma uranium ratios, with an average ratio of 1.1:1. This is a typical equilibrium ratio for this portion of a sandstone roll-front deposit and demonstrates that conventional down-hole gamma ray logging in this area provides a valid representation of in-place uranium resources.

In the southern portion of the Centennial Project, the resources are shallow, ranging from 60-260ft below surface. Because of these shallow depths, approximately only 26% of these resources are located below the zone of saturation, with the remainder at or above the water table. Historical drilling and coring, along with confirmation coring by Powertech, has demonstrated that there has been some recent mobilization of chemical uranium from its daughter products in this area. For this reason, conventional gamma logging is not sufficient to characterize these shallow resource areas. Historically, RME utilized 799 previously described PGT drillholes and 124 core holes to delineate the shallow, southern resource areas. Figure 12-3 also shows an equilibrium plot of U<sub>Gamma</sub> and U<sub>Chemical</sub> values of mineralized intercepts of 0.02% U<sub>3</sub>O<sub>8</sub> or greater from the Section 34/35 Resource Area. Over 1,900 PGT log data points from this resource area were used in this analysis. Even though there has been some recent minor mobilization of uranium within the roll fronts, by using the down-hole assays, it can be demonstrated that uranium was mobilized only a short distance and that an overall state of equilibrium exists within the deposit. This equilibrium analysis showed chemical:gamma uranium ratios averaging 1.58:1. This equilibrium ratio is much higher than that associated with deeper resources in the northern portion of the project and is indicative of recent uranium mobilization. Similar results were obtained from equilibrium plots for the other southern resource areas.

For this reason, only chemical uranium values were used in the GT contouring of these resource areas for this updated report. These chemical values were derived from downhole assays from 799 PGT drillholes and from laboratory analyses of core from 124 historical and 5 confirmation core holes. Powertech recognizes that future work on the Centennial Project will involve continuously monitoring the equilibrium state of uranium within its resource areas. In addition to collecting core samples, Powertech has the capability of performing down-hole chemical logging with its Prompt Fission Neutron (PFN) logging tool. This tool overcomes the issue of disequilibrium of  $U_{238}$  by measuring  $U_{235}$  directly, then back-calculating to  $U_{238}$ . This sophisticated technique involves generating pulsed neutrons down-hole and measuring the response returning to the tool. Future delineation drilling using this logging technique will provide accurate measurements of uranium resources.

## 12.3 Conclusion

SRK concludes the work done by Powertech to verify the historical records has validated the project information. SRK visited the site and noted the location of current Powertech drillhole sites and water well and monitor well above-ground casings. There is a limitation in defining the historical drilling in that most if not all historical drillholes are no longer identifiable as to collar location. This is due in part because the holes were collared in soil/alluvium/shale, which would not visibly retain evidence of the drillhole collars unless the holes were abandoned with steel casing protruding from the ground surface. This is not the case as much of the land surface is farmland that has been cultivated for dry-land farming or irrigated farming (alfalfa) in some areas. SRK notes that the drilling by Powertech has verified the location and grade of uranium mineralization. There are no known discrepancies in locations, depths, thicknesses, or grades that would render the project data questionable. It is SRK's opinion that Powertech has adequately verified the historical data.

While portions of the Centennial Project uranium deposits are above the water table and oxidation has occurred, disequilibrium has also occurred. As noted above, Powertech used PGT data to determine in-situ uranium grades; thus, avoiding the need to use disequilibrium corrections to total gamma count  $eU_3O_8$  determinations, in the same way that RME conducted similar logging historically. SRK concurs that this approach provides for a more accurate representation of true uranium grades for the southern portion of the Centennial Project.





