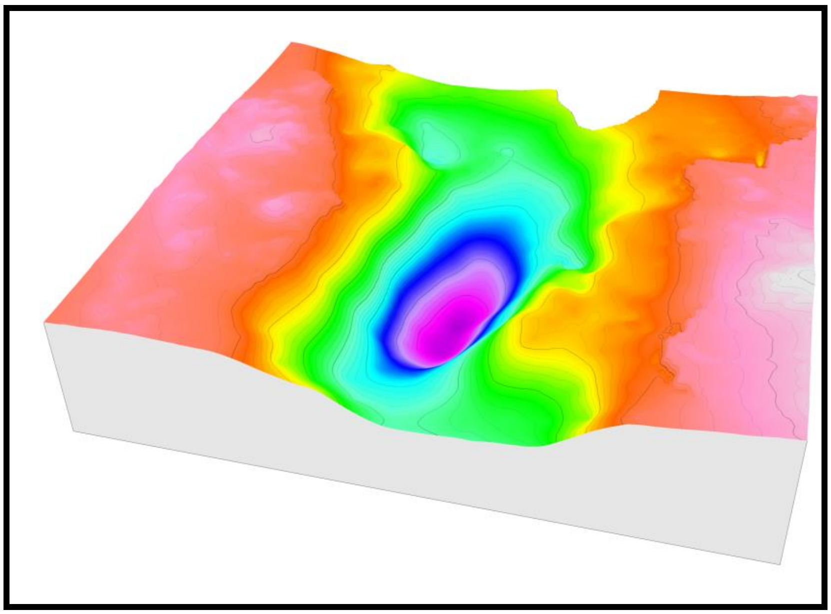
KIBBY BASIN PROPERTY
GRAVITY SURVEY
BASIN MODEL



Basin Removed Topography Looking South-southwest

James L. Wright M.Sc.

June 26, 2016

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INTRODUCTION

A gravity surveys was completed over the KIBBY BASIN property from June 13 – 19, 2016 with the objective of generating a model of the basin fill as an aid to lithium exploration. Results of the survey are integrated with an earlier airborne magnetic survey completed by the USGS and reported upon by Wright (2016). Supporting data such as topography and geology are also included in the review.

Figure 1 shows the property outline relative to roads, towns, county boundaries and topography in southwestern Nevada.

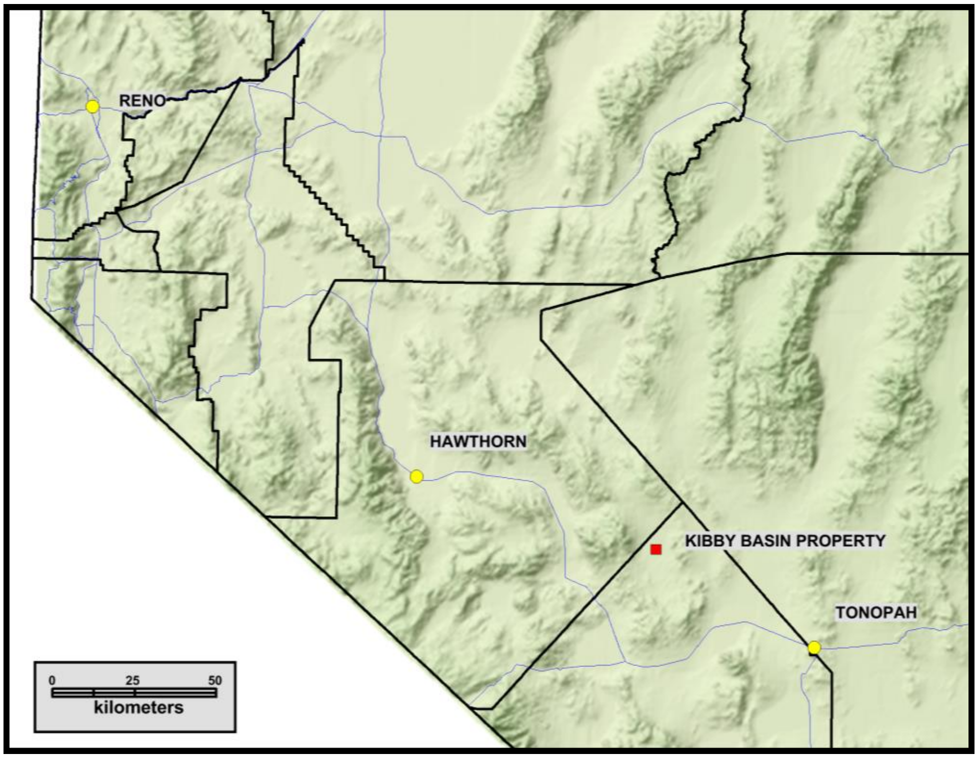


FIGURE 1: Kibby Basin Property Location

Results of the survey are provided in digital formats and paper map files suitable for printing. Digital products included all raw data and processed files, as well as MAPINFO and ARCGIS GIS files for all processed data and interpretations. In addition, topography, DEM and geology data sets are also includes. All files are contained on a DVD located in a sleeve at the rear of the report. A README file on the DVD explains the folder / file organization. Paper plot files at scales of 1:24000 and 1:50000 are also located on the DVD. The Table of Contents contains a listing of the maps.

Survey procedure and data processing are first reviewed followed by an interpretation of the gravity and generation of a basin model. Finally, recommendations and conclusions are presented.

SURVEY PROCEDURE

A total of 609 gravity stations comprise the data set. Stations were acquired on a 500 m grid as well as along surrounding public roads with approximately one kilometer spacing. In addition to the 439 surveyed stations, 170 public domain USGS station were merged into the database to provide regional coverage surround the property scale survey. Figure 2 shows the complete station posting over the 1:500k Nevada state geology of Stewart and Carlson (1978).

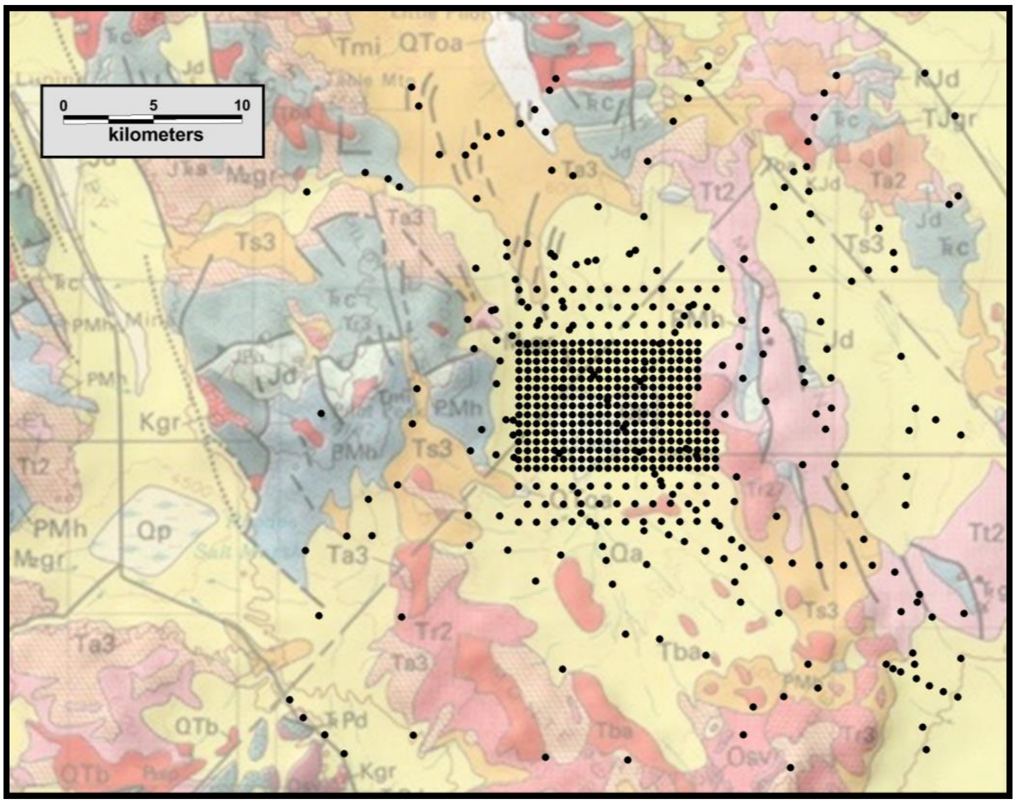


FIGURE 2: Gravity Stations Posting (●) over 1:500k Geology

Relative gravity measurements were made with LaCoste & Romberg Model-G gravity meters. Topographic surveying was performed with Trimble Real-Time Kinematic (RTK) and Fast-Static GPS. The gravity survey is tied to the US Department of Defense gravity base TONOPAH (DoD reference number 0455-2).

All gravity stations were surveyed using the Real-Time Kinematic (RTK) GPS method or, where it was not possible to receive GPS base information via radio modem, the Fast-Static method was used. A GPS base station, designated KIBBY, was used on the project. The coordinates and elevation of this base station location were determined by making simultaneous GPS occupations in the Fast Static mode with Continuously Operating Reference Stations (CORS). The topographic surveying was performed simultaneously with gravity data acquisition.

All gravity data processing was performed with the Xcelleration Gravity module of Oasis montaj (Version 7.0). The gravity data were processed to Complete Bouguer Gravity over a range of densities from 2.00 g/cc through 3.00 g/cc at steps of 0.05 g/cc using standard procedures and formulas.

Terrain Corrections were calculated to a distance of 167 km for each gravity station. Various procedures were used for three radii around each station: 0-10m, 10-200m, and 2-167 km. These include the triangle method, combination of a prism and a sectional ring method, and sectional ring method for the three zones respectively.

Gravity repeat statistics for the Kibby gravity survey follow.

Total number of stations:	439
Number of repeated stations:	36
% stations repeated :	8.2%
Total number of readings:	489
Number of repeat readings:	50
% readings repeated:	10.2%
Maximum repeat error:	0.0472 mGal
Mean repeat error:	0.0140 mGal
RMS error:	0.0237 mGal

The mean of the absolute value of all loop closure errors is 0.022 mGal. Such statistics indicate good data quality and the data fully support the interpretation set forth. Additional details concerning survey logistics are available in Appendix A.

DATA PROCESSING

Data provided by MaGee Geophysical Services LLC included the gravity data corrected to the complete Bouguer anomaly (CBA) stage for a number of densities. Determination of the most suitable Bouguer density is required for removal of topographic effects in the data. Ferguson et. al. (1953) mapped sediments and intrusive rocks in the Pilot Mountains flanking the basin to the west, as well as in the lesser terrain of the Cedar Mountains to the east. The most appropriate density of processing is that which minimizes the correlation of gravity with terrain. Figure 3 presents profiles of the complete Bouguer gravity (CBA) for densities ranging from 2.00 g/cc to 3.00 g/cc. The profile crosses rough terrain in the Pilot Mountains and extending into the Kibby Basin. The least correlation of CBA gravity with rough terrain in the Pilot Mountains occurs for a density of 2.60 g/cc. This is also a reasonable density for the rocks mapped in the mountains.

The 2.60 g/cc data were gridded with a Kriging algorithm using a spacing of 200 m, which is 40% of the detail grid and 20% of the road coverage spacing. This product is termed the CBA or GRAV. The CBA data were processed with a proprietary procedure to produce a smoothed regional grid (GRAV_UC), which subtracted from the CBA grid produced a residual (GRAV_RES) grid. Finally, the total horizontal derivative (GRAV_HG) was computed from the CBA. All four grids were mask to the data limits and imaged / contoured for import into MAPINFO and ARCGIS. The images and contours were imported into the GIS as separate files. Color bars for the four products follow. Contour intervals and units are as shown below the color bars. All data conform to the **NAD 27 / UTM 11N** coordinate system.

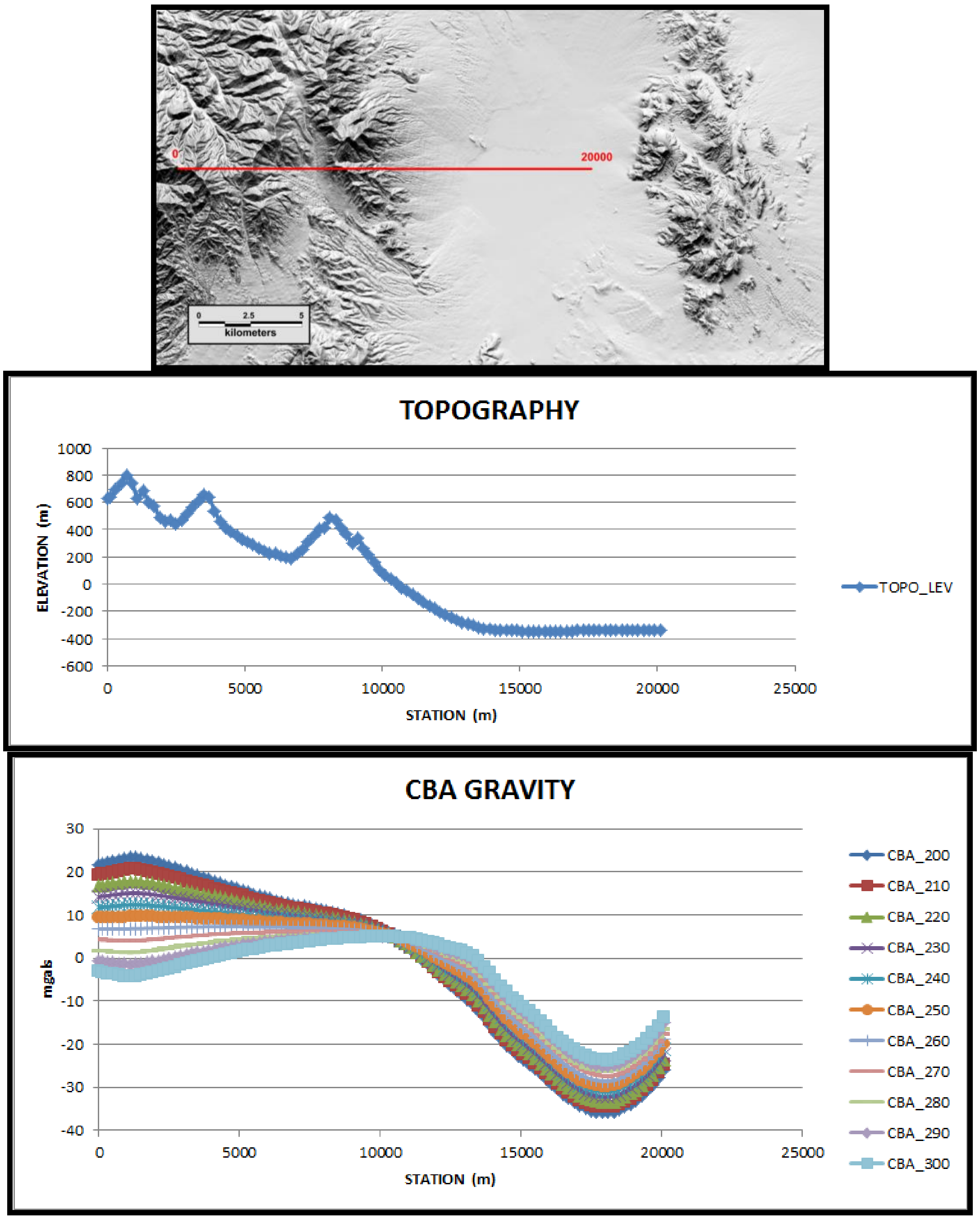
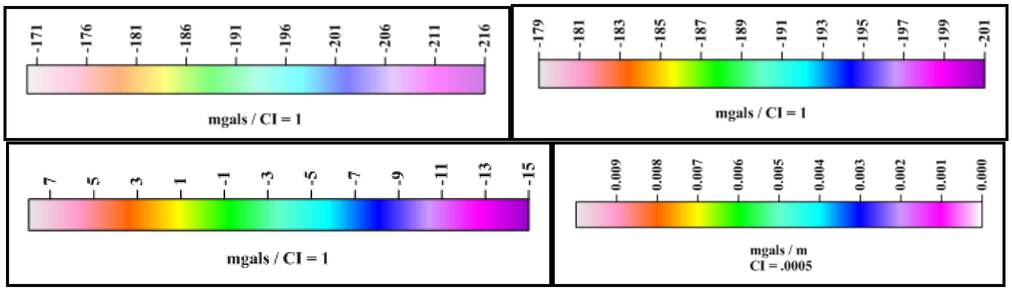


FIGURE 3: Density Profile



Gravity Survey Color Bars
(CBA-UL, REG-UR, RES-LL, HG-LR)

As noted previously, various map products are proved as Golden Software SRF files at scales of 1:24000 or 1:50000. Figure 4 shows an example plot for the gravity data. Groups of plot files for the gravity and basin model are located on the DVD and listed in the Table of Contents.

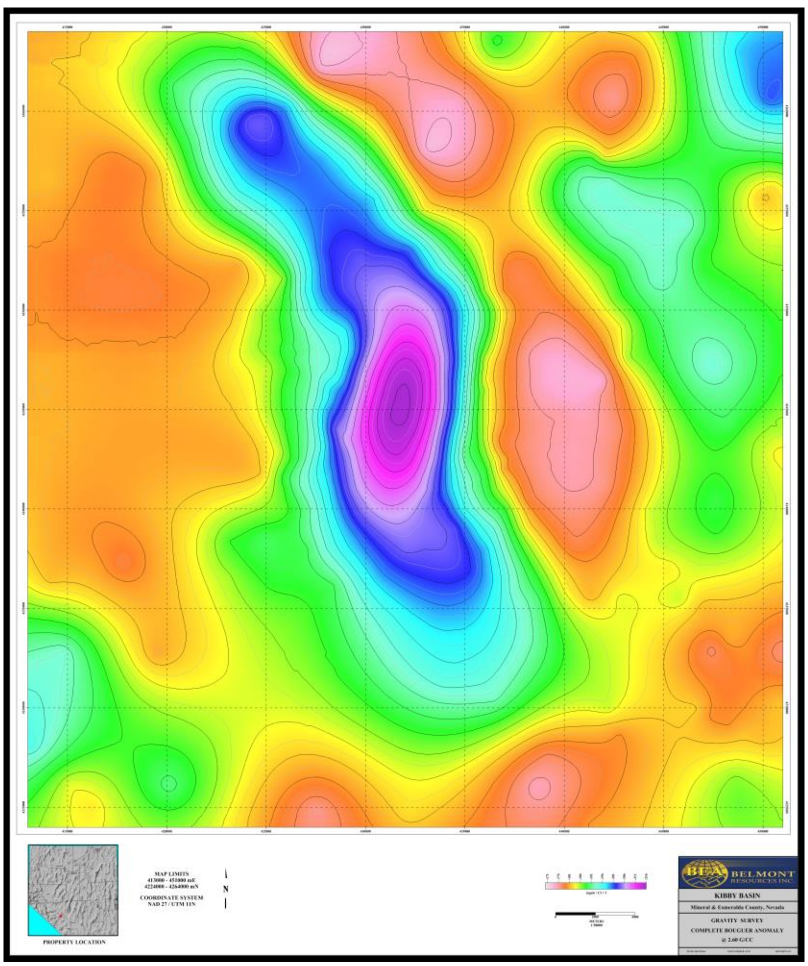


FIGURE 4: Gravity Survey Example Plot

BASIN MODEL

Figure 5 shows the model boundary over the topography with model prism centers (i.e. black dots) and the property outline in red. The model is anchored to bedrock along the west and east margins with the northern and southern boundaries still within the basin. Figure 6 shows the residual CBA gravity at 2.60 g/cc, which is the data to be modeled. The figure also confirms the residual data grades to zero or slightly positive around the edges of the basin. This is required for consistency with the bordering outcrop areas.

The gravity modeling procedure is based upon a concept first proposed by Cordell and Henderson (1968). This basic approach was specialized and optimized for basin modeling. The basin and surrounding area is discretized as a collection of vertical, square prisms with adjustable heights and densities. These parameters are adjusted to fit the observed gravity as shown in Figure 6. The model consists of 9216 square prisms 200 m on a side with Figure 5 showing the prism top centers over the topography. Limits for the model in NAD 27 / UTM 11N coordinates follow.

422000– 441000 mE
4234000 – 4253000 mN

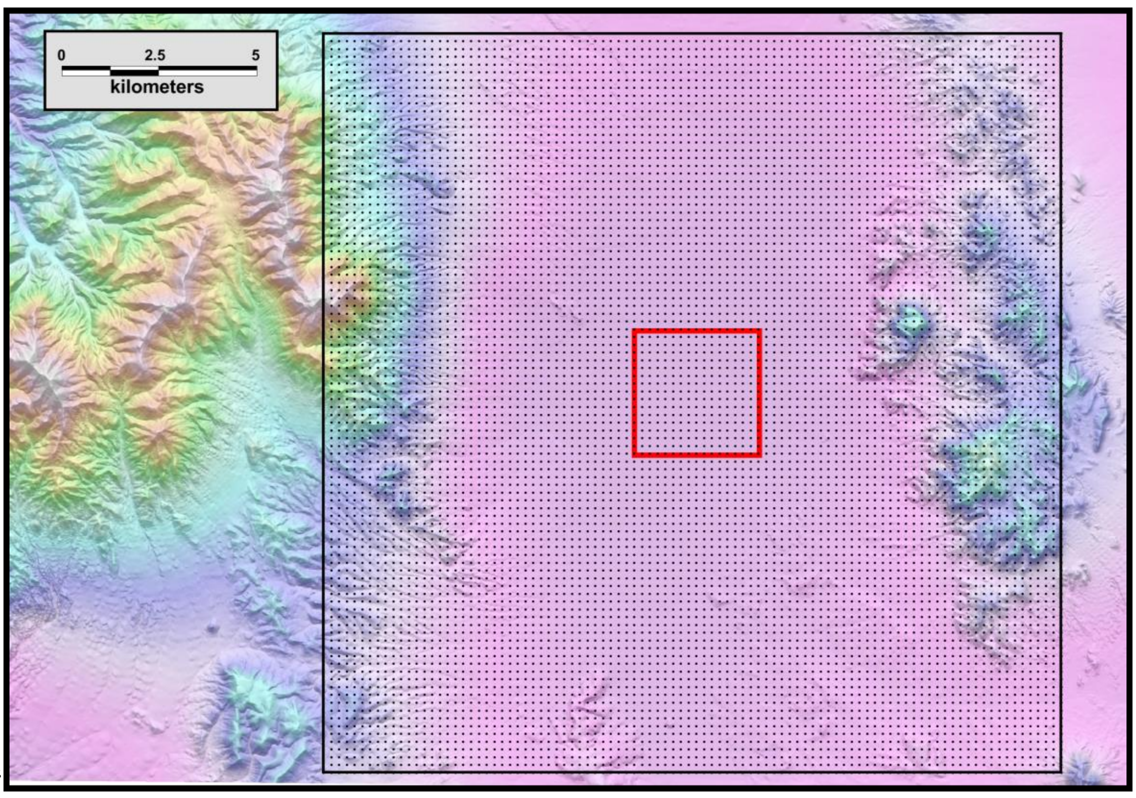


FIGURE 5: Model Limits, Prism Centers, Property over Topography

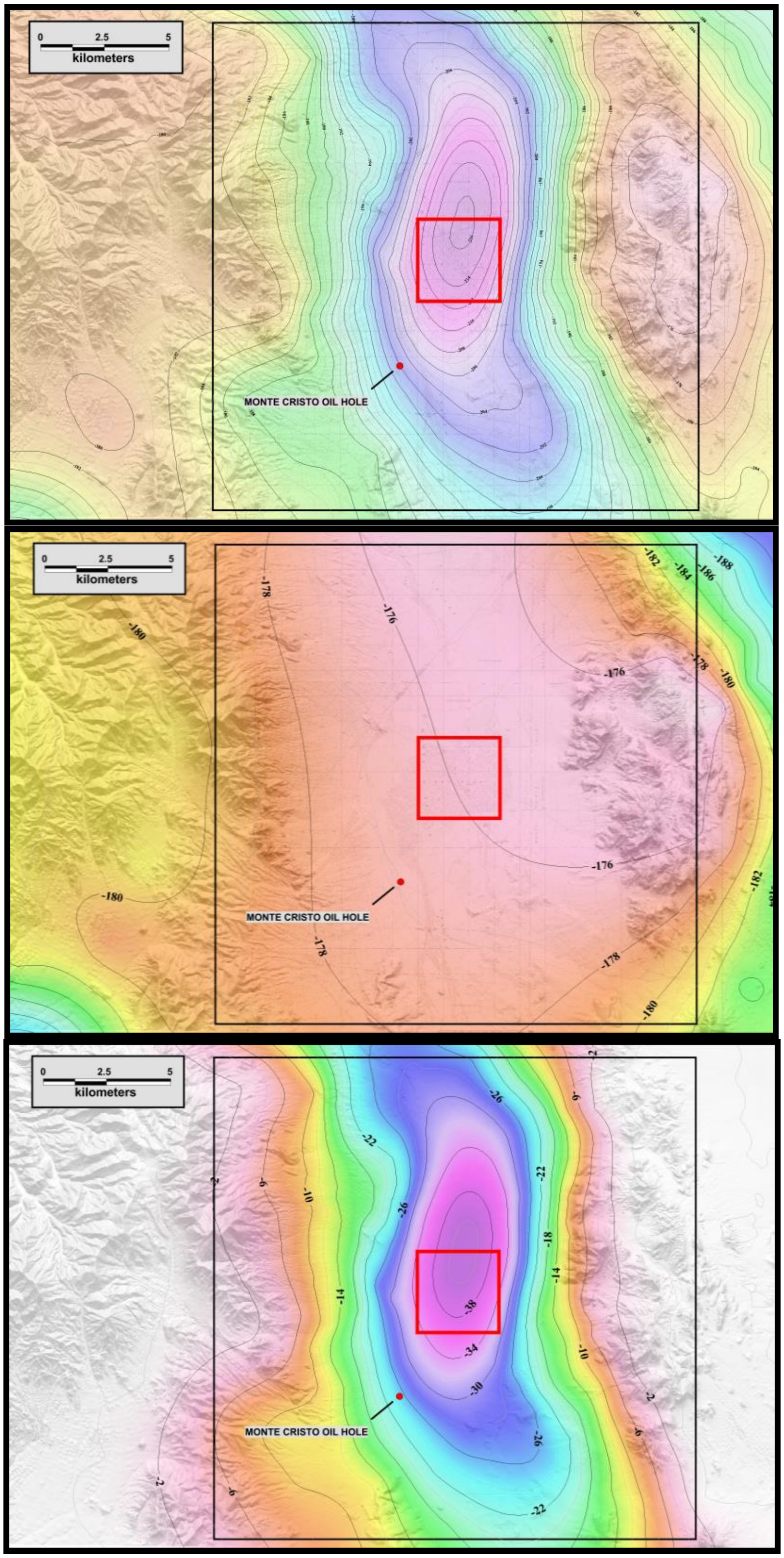
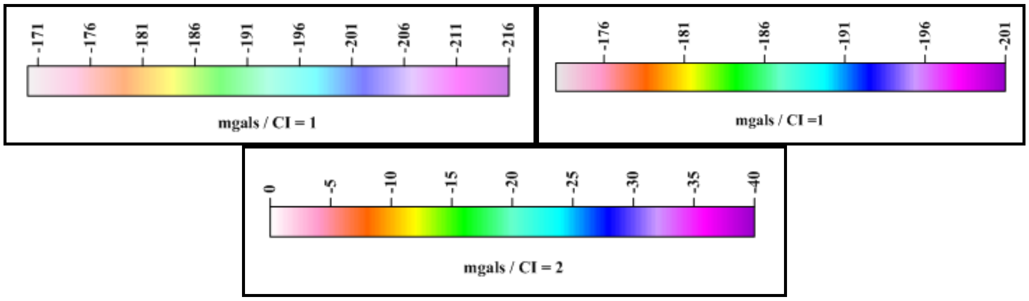


FIGURE 6: CBA, Regional and Final Gravity over Topography



Gravity Survey Color Bars
(CBA-UL, REG-UR, FINAL-BOTTOM)

Figure 6 shows the evolution of the gravity from the CBA, generation of a regional and subtraction of the regional to yield the final gravity suitable for modeling. Note the regional extends smoothly across the basin and does not reflect the gravity low associated with the lows density basin fill. When the regional is subtracted from the CBA to produce the final gravity, the final gravity only contains the basin fill gravity response. This is clearly evident by the final gravity grading to zero values in the surrounding terrain. **Application of the correct regional is a critical factor in producing a reasonable basin model.**

The second major factor controlling the viability of a given model is assigning the correct density for basin fill. A single drill hole is located within the basin as shown in Figure 6. This is an oil and gas exploration hole drilled in 1969 by Monte Cristo Oil Corporation. No lithologic logs are available; however, a down-hole density log is available via the Nevada Bureau of Mines. Examination of the log suggests an overall density of 2.1 g/cc is appropriate for the basin fill. This is a typical and reasonable value for basin fill. As noted in the data processing section, a density of 2.60 g/cc is assigned to the surround outcrop areas, thus yielding a density contrast between basin fill and bedrock of -0.5 g/cc.

Gravity responses calculated from the final model are compared with the observed gravity in Figures 7 and 8. A perfect model would produce a gravity response which exactly matches the observed data. The color images in Figure 7 place the calculated and observed gravity side-by-side using the same coloration and contour intervals for comparison. In Figure 8, contours for the two data sets are overlain. Generally good agreement is noted. The model response for the very bottom of the basin is not quite as low as the observed data due to lack of resolution at such extreme depths. Also finer detail around the margins of the basin due to the finite prism size (i.e. 200 m) exhibits a slight level shifts compared to the observed data. The model was constrained to zero depth along the margins of a prominent outcrop of **QTb** extending into the south edge of the basin. Clearly, this constraint does not agree with the observed gravity by producing an obvious shift between the model and observed gravity in this area. This confirms the observation by Wright (2016) that many of the mapped **QTb** outcrops sit atop basin fill and others are likely to occur within the basin fill. Overall, the model is a reasonable fit to the observed data.

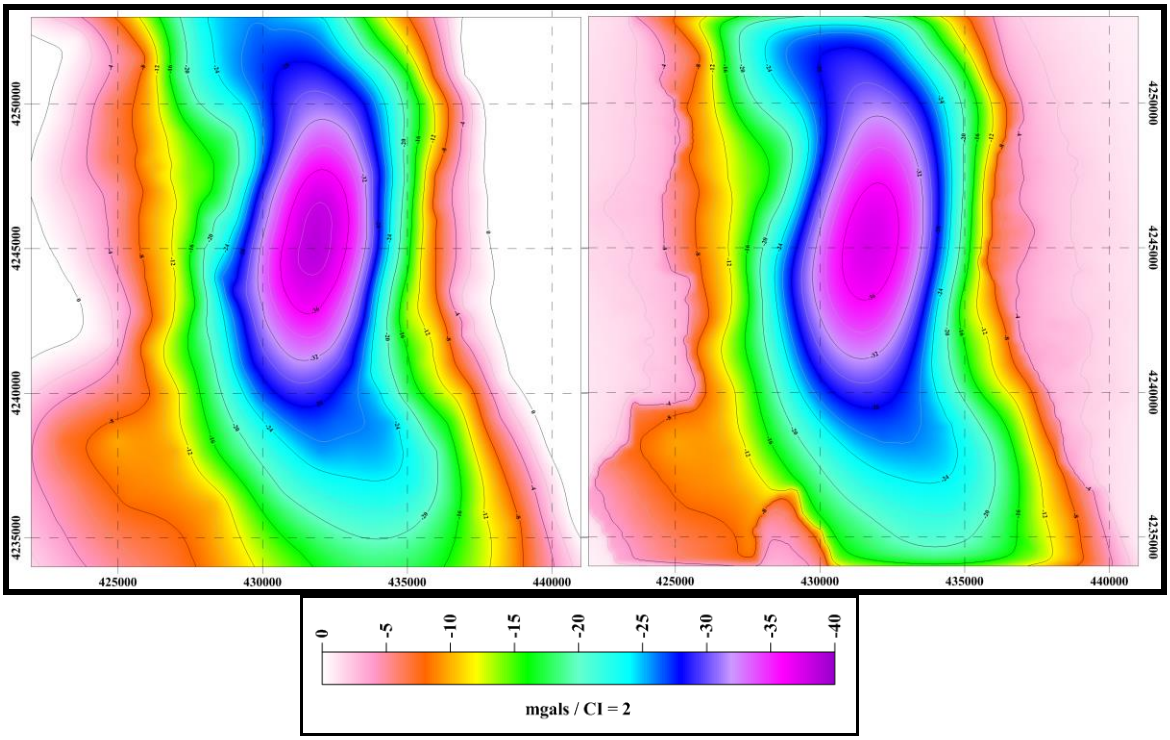


FIGURE 7: Observed (Left) and Model (Right) Gravity

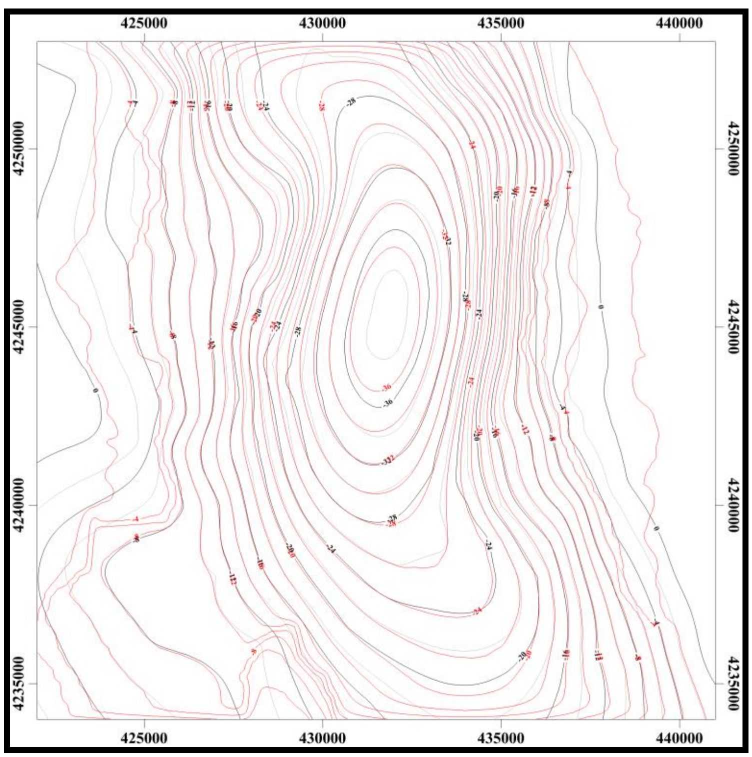


FIGURE 8: Observed (Black) and Model (Red) Gravity Contours

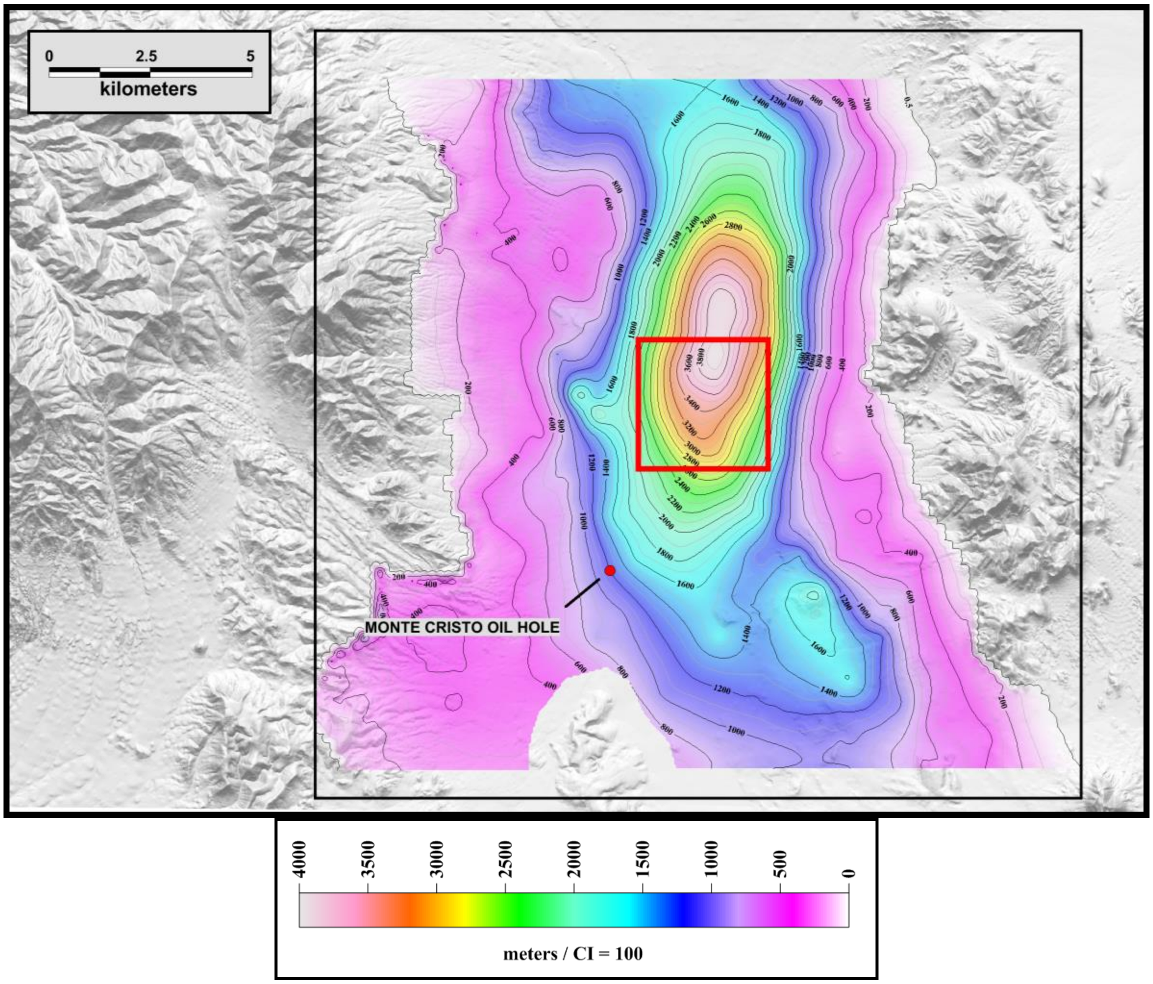


FIGURE 9: Modeled Basin Depth over Gray Shade Topography

Figure 9 shows the basin depth or thickness of basin fill beneath the surface. The basin reaches a maximum depth approaching 4000 m with a fair amount of complexity along the basin margins. The overall “Z” shape to the basin, observed by Wright (2016), is even more pronounced in the basin model. Strips of the model along the north and south margins are removed due to edge effect distortions produced by ending the model within the basin. In addition, the distortion around the aforementioned **QTb** body protruding into the southern margin is removed.

Subtraction of the basin depth model from the digital elevation model (DEM) yields the basement topography as presented in Figure 10. The surface smoothly transitions from the basin to surrounding topography and is termed the “basin removed topography”. Presumably this would be topography if the basin fill were removed, so the numerical values in the figure are elevations in meters.

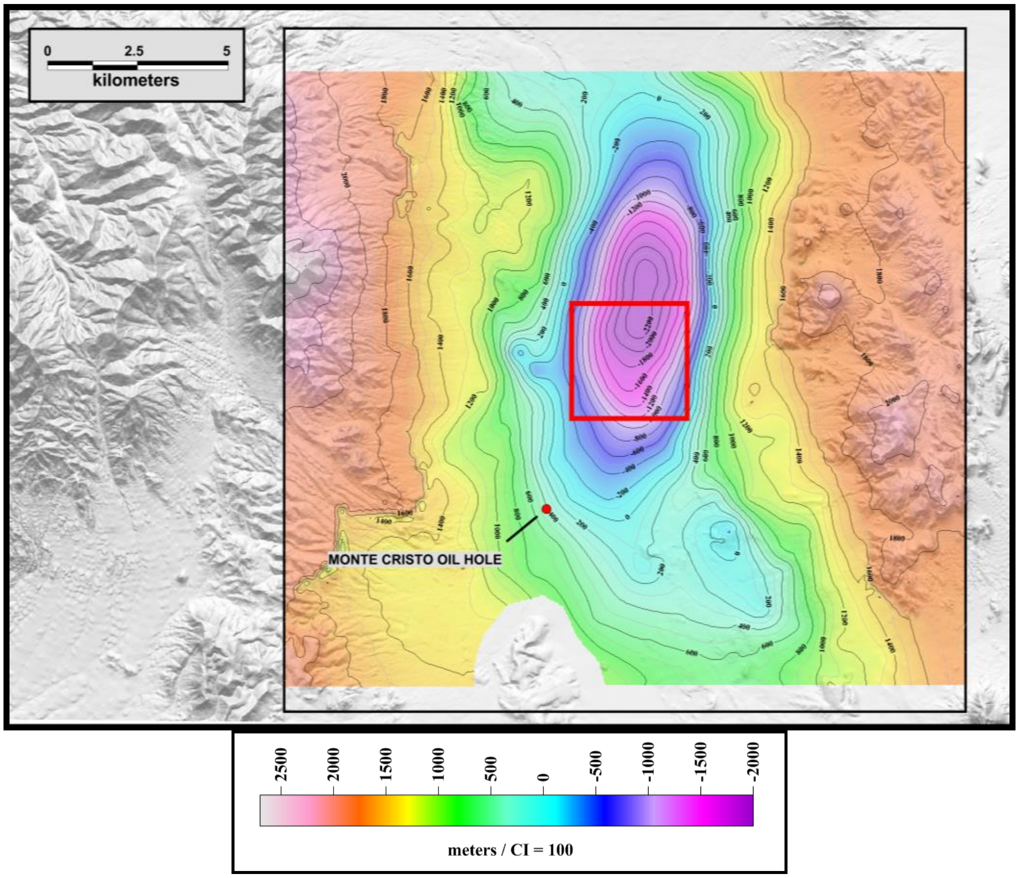


FIGURE 10: Basin Removed Topography

The Monte Cristo Oil (MCO) Company hole does provide some anecdotal information concerning the quality of the basin model. First, as noted previously, the down-hole density log does provide a reasonable control on the basin fill density (i.e. 2.1 g/cc). Also, an examination of the density log reveals the densities increase near the 1200 m depth and show a sustained average level of 2.3 g/cc to 2.4 g/cc to the bottom of the hole at 1455 m (4776'). This density is below of 2.6 g/cc estimated for the bedrock; however, it could well be indicating weathered bedrock or a basal unit in the fill material. Interestingly, the basin gravity model places the bedrock at a depth of 1200 m in the vicinity of the drill hole. The resistivity and caliper logs are inconclusive.

While the drill hole information is interesting, without a lithologic log the information is not sufficient as to verify the model. Therefor the basin model is an unconstrained model. That is, no drill or other controls are available to assist in establishing a firm depth reference. It is difficult to assess how well an unconstrained model matches reality without such controls. Certainly, the distribution of basin fill in the model produces a gravity response which reasonably matches the observed gravity. Unfortunately other reasonable density distributions / depths can also produce a gravity response which matches the observed data. **For this reason, the current model should be considered provisional and subject to revision when additional information is available**.

INTERPRETATION

Figure 11 presents the total gradient of the Bouguer gravity over the gray shade topography. The total gradient, often termed the structural mapper, places highs which extend along structures which offset rocks with contrasting densities. Structures which don't juxtapose densities; but terminate or offset other structures, are reflected in the gradient as discontinuities and / or offsets along the high trends.

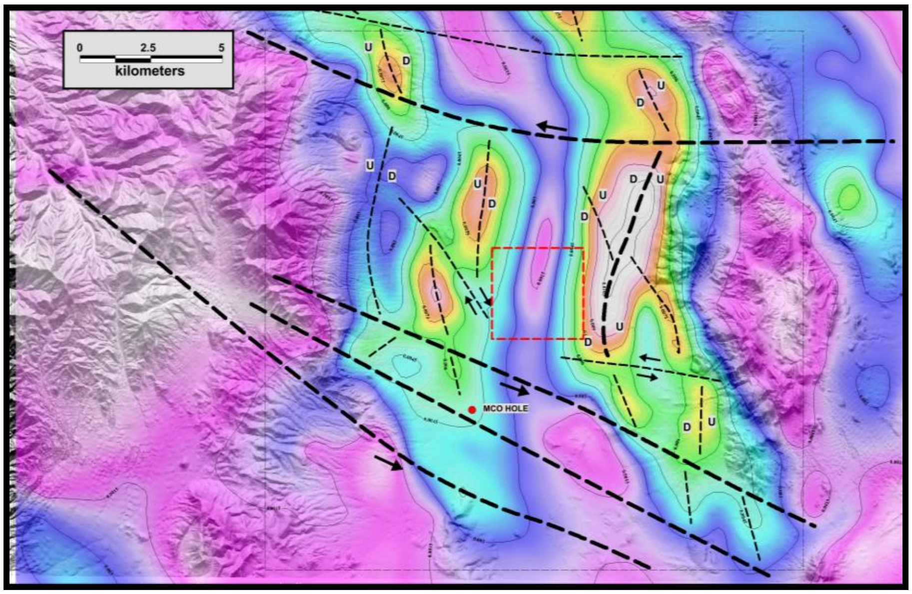


FIGURE 11: Gravity Total Gradient with Interpreted Structures

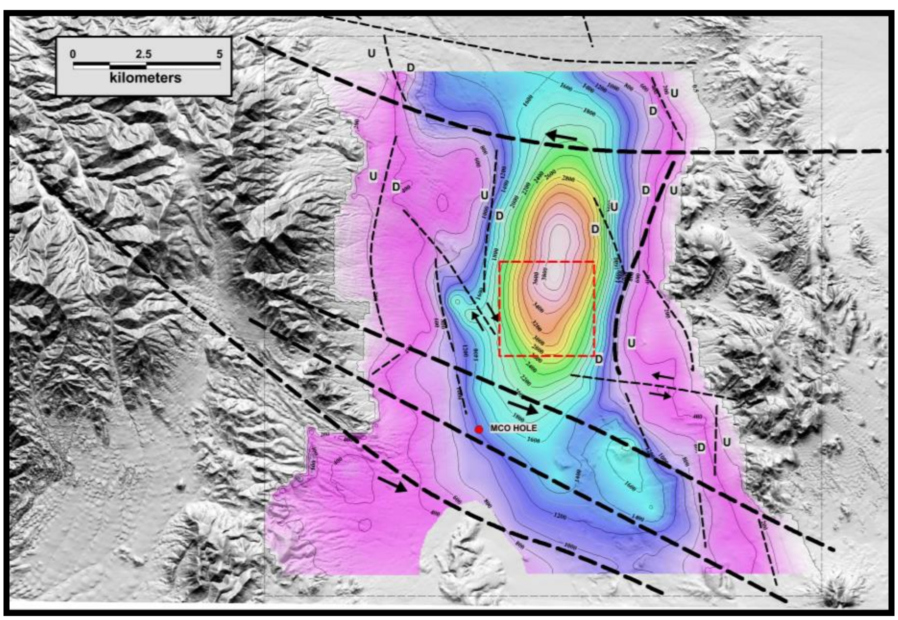


FIGURE 12: Basin Depth Model with Interpreted Structures

Dashed black lines mark structures interpreted from the gradient with magnitude denoted by line width. Two major orientations are evident: west-northwest and north-south. As hypothesized by Wright (2016), these are elements in a left lateral shear couple which formed a pull-apart basin. Sense of offset is labeled on the structures. Figure 12 shows the interpreted structures over the basin depth model.

The model reveals a north – south elongated basin with a depth approaching 4000 m, which is not unusual for basins in the Walker Lane. Of note is the asymmetry in the basin's east – west profile. Figure 13 shows a section across the basin model 600 m north of the property's north boundary. This section is typical for much of the length of the basin. The west side of the basin is typified by several smaller magnitude structures down-dropping the basin, while the east side is controlled by what appears to be one large magnitude structure. This structure is denoted in Figures 11 and 12 with a heavy dashed line. It is very prominent in the gradient (i.e. Figure 11). The basin is terminated and left laterally offset by major west-northwest structures to the north and south.

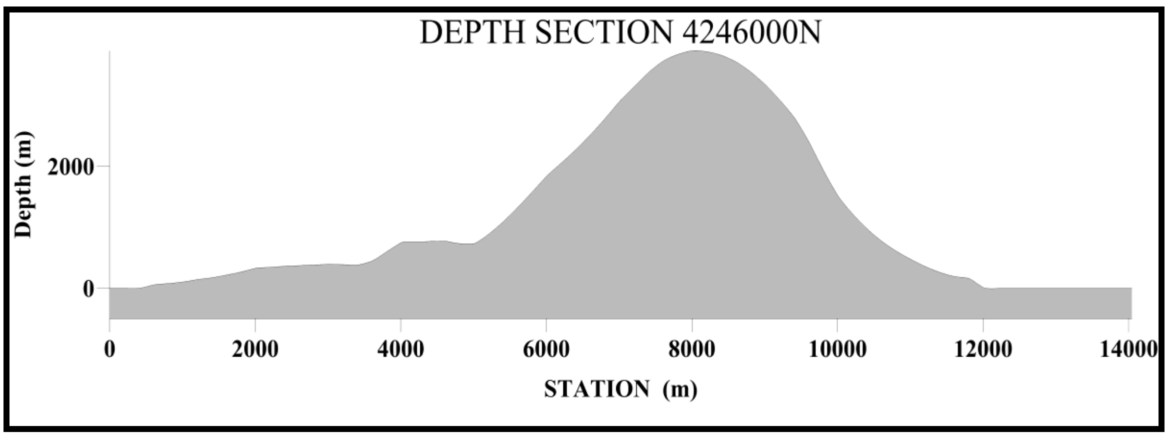


FIGURE 13: East-West Section Crossing the Basin Model (Looking North)

Figures 14 and 15 present the structural interpretation over the geology of Ferguson et. al. (1953) and the USGS reduced-to-pole (RTP) airborne magnetics. Wright (2016) reviewed these data sets as part of the regional analysis prior to the gravity survey. The interpreted structures are supported in large part by the geology, magnetics and topography.

Zampirro (2003) reviews the Lithium brine geology and geometries in the Clayton Valley deposit. Figure 16 presents a collection of partial figures from the report of Zampirro (2003). The brines are contained in several layers located along the south margin of Clayton Valley adjacent to the Cross Central and Paymaster Canyon faults, which form the south edge of the valley. Furthermore, the aquifers are controlled by porous layers dipping to the south into the structures and, in the case of the marginal gravel aquifer, ponded by the structures. **Clearly, dipping of porous basin sediments toward a major basin bounding structure is geometry conducive to brine containment.**

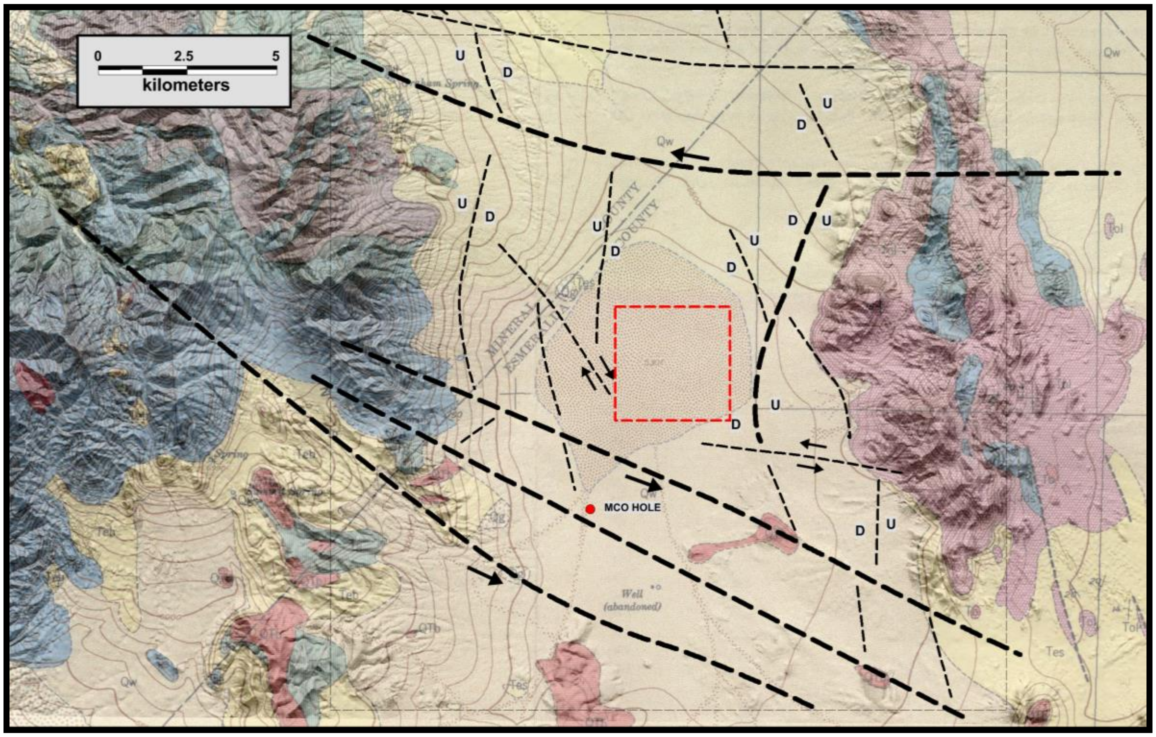


FIGURE 14: Structural Interpretation over Geology of Ferguson et. al. (1953)

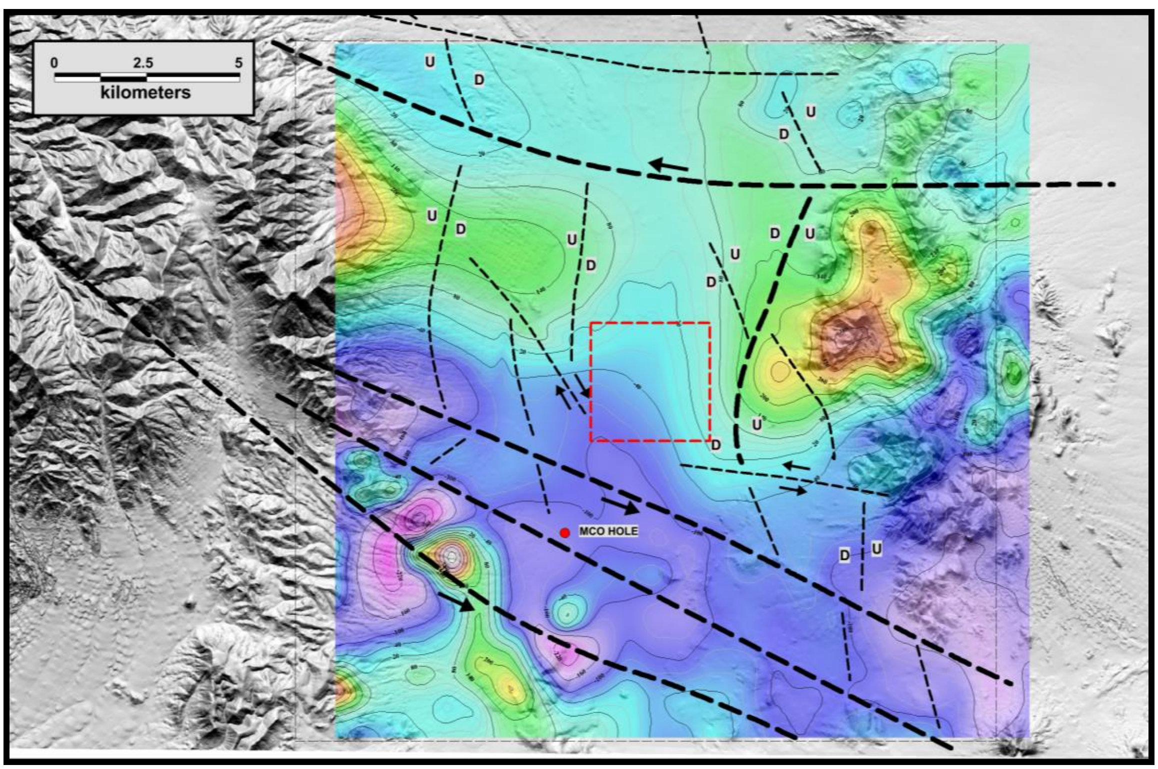


FIGURE 15: Structural Interpretation over USGS RTP Airborne Magnetics

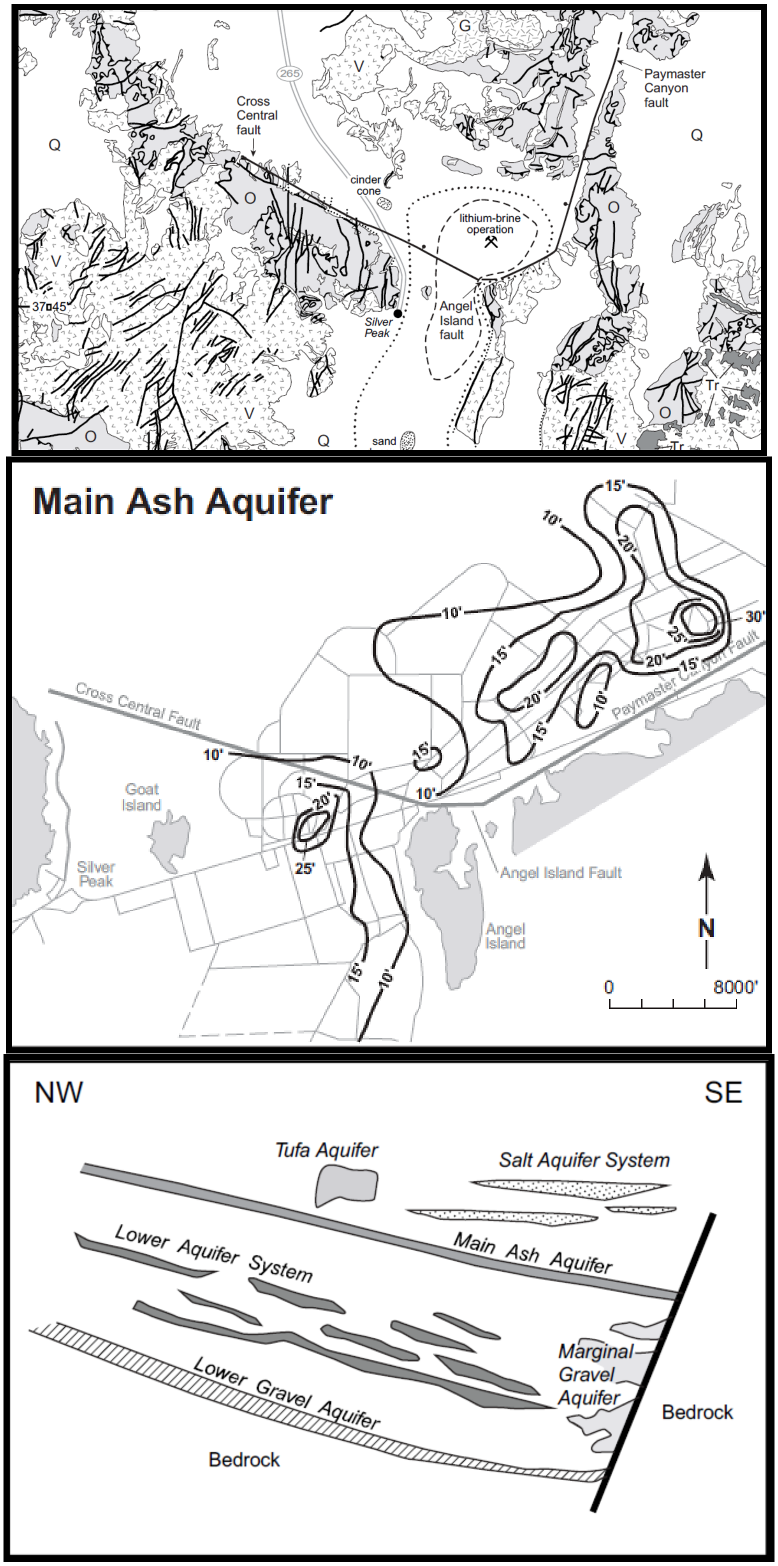


FIGURE 16: Zampirro (2003) Figures Depicting Brine Aquifers in Clayton Valley (Portions of Figures 1, 5 and 4 Top to Bottom)

A similar geometry is suggested by the basin model and associated structural interpretation for the Kibby Basin. **Of course, the model neither predicts the dip of basin sediments nor if the sediments contain Lithium brines**. Nevertheless, the basin geometry is sufficiently similar to the Clayton Valley deposit as to deserve additional exploration effort. At Kibby Basin the large structure along the east side of the basin would be analogous to the Cross Central and Paymaster Canyon faults in Clayton Valley. As Kibby Basin was pulled apart, one could imagine blocks of basin fill being rotated to the east as the large east bounding structure accommodated the majority of the extension.

Other structures and structural intersections bounding the main Kibby Basin should also be considered as possible targets for brine concentrations. Indeed, Zampirro (2003) notes structural intersections may have controlled brine concentration in Clayton Valley. As noted by Wright (2016), blocks of young basalt (**QTb**) are likely located within the basin fill and could well serve as traps or barriers to basin brine lateral movement. This type of brine trap is certainly unusual but should receive some consideration.

CONCLUSIONS AND RECOMMENDATIONS

The detailed gravity survey confirms the large scale structural hypothesis of a pull-apart basin and also added considerable structural detail. A basin model is generated which reveals the basin to be on the order of 4000 m deep with an east-west asymmetry, the east side being steeper than the west. This asymmetry is similar to the Clayton Valley basin as described by Zampirro (2003). In addition, the asymmetry appears to be an important control to brine entrapment at the Clayton Valley deposit. A 7.4 kilometer long structure is identified in Kibby Valley with characteristics interpreted to be skin to major structures bounding the south side of Clayton Valley. **It should be stressed the gravity can neither predict the dip of basin sediments nor if the sediments contain lithium brines**. Nevertheless, the gravity survey and derived basin model do fit the Clayton Valley model in sufficient detail as to certainly warrant further exploration effort.

Serious consideration should be given to extending the current land position east to cover the major structure bounding the basin’s east side. Complete coverage would require approximately a two to three kilometers wide swath along the east side of the current claim block and extending approximately five kilometers further north of the current claim block. The gravity reflects the point at which the structure offsets the basement rocks. Thus projecting the structure back to surface will shift the structure’s surface trace eastward from the interpreted location. A ground examination of the area could well provide evidence for the structure’s surface trace. This depends upon recent reactivation of the structure so as to offset the current basin topography. If the ground examination is inconclusive, consideration should be given to conducting a controlled source audio magneto-telluric (CSAMT) survey. CSAMT maps the earth’s resistivity and is well suited for delineation of basin fill bedding and, in turn, dip and offsets in the bedding.

REFERENCES

Cordell, L. and Henderson, R. G., 1968, Iterative three-dimensional solution of gravity anomaly data using a digital computer: Geophysics, v. 33, pp. 596-601.

Ferguson, H. G., Muller, S. W. and Gathcart, S. H., 1953, Geology of the Coaldale Quadrangle, Nevada: United States Geologic Survey Map GQ-23.

Stewart, J. H., and Carlson, J. E., 1978, Geologic Map of Nevada: USGS Map in cooperation with the Nevada Bureau of Mines.

Wright, J. L., 2016, Kibby Basin Property, Geophysical review, Work proposal: Belmont Resources Inc. company report.

Zampirro, D., 2003, Hydrogeology of Clayton valley brine deposits, Esmeralda County, Nevada in Nevada Bureau of Mines and Geology Special Publication 33.

APPENDIX A

GRAVITY SURVEY

over the

KIBBY PROSPECT

MINERAL, ESMERALDA, and NYE COUNTIES, NEVADA

for

BELMONT RESOURCES INC

June 2016

SUBMITTED BY

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Website: www.gravityandmag.com

INTRODUCTION

Gravity data were acquired at the Kibby Prospect in Mineral, Esmeralda, and Nye Counties, Nevada for Belmont Resources Inc. The gravity survey was conducted from June 13 through June 19, 2016. A total of 439 new gravity stations were acquired.

Relative gravity measurements were made with LaCoste & Romberg Model-G gravity meters. Topographic surveying was performed with Trimble Real-Time Kinematic (RTK) and Fast-Static GPS. Field operations were based out of Tonopah, Nevada.

Gravity data were processed to complete bouguer gravity, merged with public domain USGS data, and forwarded to Jim Wright for further processing and interpretation.

DATA ACQUISITION

Survey Personnel
Data acquisition and surveying were performed by Jack Magee and Brian Page. Christopher Magee supervised all operations and completed final data processing.

Gravity Meters
LaCoste & Romberg Model-G gravity meters, serial numbers G-059 and G-061, were used on the survey. Model-G gravity meters measure relative gravity changes with a resolution of 0.01 mGal. The manufacturer's calibration tables used to convert gravity meter counter units to milliGals are included with the delivered data.

Gravity Base
The gravity survey is tied to a single U.S. Department of Defense gravity base located in Tonopah (DoD reference number 0455-2). The information on this base is listed below.

Base	Absolute Gravity	Latitude	Longitude	Elevation
TONOPAH	979443.87	38.06833°	-117.23050°	1837.9 m

GPS Equipment
All gravity stations were surveyed using the Real-Time Kinematic (RTK) GPS method or, where it was not possible to receive GPS base information via radio modem, the Fast-Static method was used. The following GPS equipment was used on the project:

Trimble SPS880/R8/5700 receivers
Trimble Model TSC2 Data controllers
Trimble TrimMark III base radio
Trimble Zephyr GPS antennas
Trimble Business Center (Version 3.7) was used for GPS data processing.

Geodetic Survey Control

A single GPS base station, designated *KIBBY,* was used on this project. The coordinates and elevation of this base station location were determined by making simultaneous GPS occupations in the Fast Static mode with Continuously Operating Reference Stations (CORS). GPS data for this station was submitted to the National Geodetic Survey (NGS) OPUS service which is an automated system that uses the three closest CORS stations to determine coordinates and elevations for unknown stations. The coordinates and elevations of station *KIBBY* are listed below.

Station	WGS-84 Latitude	WGS-84 Longitude	WGS-84 Ellipsoid Ht.
KIBBY	N38º 18' 36.18434"	W 117º 45' 23.60743"	1610.131 m
	NAD27UTMNorthing	**NAD27UTMEasting**	**Elevation (NAVD29)**
	4240288.562 m	433936.837 m	1633.706 m

Topographic Surveying of Gravity Stations

All topographic surveying was performed simultaneously with gravity data acquisition. The gravity stations were surveyed in NAD27 UTM Zone 11 North coordinates in meters. The Datum Grid method (NADCON) was used to transform from the WGS-84 (NAD83) datum to the NAD27 datum and the GEOID12B geoid model was used to calculate NAVD88 elevations from ellipsoid heights. The elevations were then converted to North American Vertical Datum of 1929 (NAVD29) using the NGS program VERTCON. The coordinate system parameters used on this survey are summarized below.

<u>Datum</u>

Datum Name	NAD27
Ellipsoid	Clarke 1866
Semi-Major Axis	6378206.4 m
Eccentricity	0.082271854
Transformation	NADCON (CONUS)

<u>Projection</u>

Type	Universal Transverse Mercator
Zone	UTM 11 North
Origin Latitude	00º 00' 00.00000" N
Central Meridian	117º 00' 00.00000" W Scale Factor 0.9996
False Northing	0
False Easting	500000 m
Geoid Model	GEOID12B (CONUS)

Gravity Stations

A total of 439 new gravity stations were acquired. Stations were reached by ATV or on foot. A

DATA PROCESSING

Overview
Field data including station identifier, local time, gravity reading, measured slope, and operator remarks were recorded in the field in notebooks. The recorded data were then entered into a notebook computer in the form of GeoSoft RAW gravity files. Survey coordinates were transferred digitally.

All gravity data processing was performed with the Gravity and Terrain module of Oasis montaj (Version 8.5.2). Gravity data were processed to Complete Bouguer Gravity over a range of densities from 2.00 g/cc through 3.00 g/cc at steps of 0.05 g/cc using standard procedures and formulas.

Data Processing Parameters
The following parameters were used to reduce the gravity data:

GMT Offset	Gravity Formula	Gravity Datum
-7 hours	1967	ISGN-71

Terrain Corrections
Terrain corrections were calculated to a distance of 167 km for each gravity station. The terrain correction for the distance of 0 to 10 meters around each station was calculated using a sloped triangle method with the average slopes measured in the field. The terrain correction for the distance of 10 meters to 2000 meters around each station was calculated using a combination of a prism method and a sectional ring method with digital terrain from 10-meter Digital Elevation Models (DEM). The terrain correction for the distance of 2 to 167 kilometers around each station was calculated using the sectional ring method and digital terrain from 90-meter DEMs.

Gravity Repeats and Loop Closures

Total number of stations:	439
Number of repeated stations:	36
% stations repeated :	8.2%
Total number of readings:	489
Number of repeat readings:	50
% readings repeated:	10.2%
Maximum repeat error:	0.0472 mGal
Mean repeat error:	0.0140 mGal
RMS error:	0.0237 mGal

The mean of the absolute value of all loop closure errors is 0.022 mGal.

DATA FILES

Raw Data Files

The raw data files are named with the gravity meter serial number, date, and operators initials. The format is *gnnn_mmm_dd_2016_iii.txt* where *gnnn* is the serial number of the gravity meter, *mmm* is the month, *dd* is the date on which the gravity loop was acquired, and *iii* are the operator's initials. The raw data file and GeoSoft database file (.gdb) for each day's data are included with the delivered data.

Final Gravity XYZ File

The final GDB file with all principle facts for the Kibby Gravity Survey is named *Kibby_Master.gdb* with a corresponding XYZ file named *Kibby_Master.xlsx*. The merged GDB is named *Kibby_Master_merge.gdb* with a corresponding XYZ file named *Kibby_Master_merge.xlsx.* The data columns in the file include headers identifying the value of each column.

Grid and Terrain Files

The file names for the grid files used to create the images in this report and to calculate the terrain corrections are as follows and are included with the delivered data.

Complete Bouguer Gravity grid
cbg235.grd cbg235_merge.grd
Local terrain files
Kibby_10m_DEM_expand.grd
Regional terrain files *Nevada_90m_NAD27UTM11.grd* Regional terrain correction output file
Kibby_167km_tc_expand.grd

GeoSoft Database Files

All of the additional GeoSoft database (.gdb) files associated with the data processing are also included with the delivered data, these are:

Final coordinate and elevation listing *Kibby_coords_thru_jun18_NAVD29.gdb* Master gravity database
Kibby_Master.gdb Kibby_Master_merge.gdb
Gravity Base Station database
Kibby_Grav_Base.gdb

GPS Data Files

The raw and processed GPS data are included with the delivered data as Trimble Business Center projects and/or included in folders organized by date.