

SUBSIDENCE SURVEY FOR TEXAS BRINE COMPANY, LLC IN THE BAYOU CORNE AREA

July 2013

Fenstermaker Job. No. 2139115.00C

In February of 2013 Texas Brine Company, LLC retained C. H. Fenstermaker & Associates, LLC to perform surveying services in the Bayou Corne area of the Napoleonville Salt Dome Complex. The first survey was performed in February of 2013. This is the fourth survey in a series to be performed over the next year, if needed.

A Subsidence Survey (Vertical) began on July 22, 2013. The same two Sokkia SDL 1X Digital Levels with 3 meter Invar rods Model BIS30A were used in this survey as in the previous survey. Level Loops began on GPS 1, an existing NGS-style monument. The starting elevation for the Subsidence Survey at monument GPS 1 is 5.906. This elevation was held on the original survey in February and for previous historical surveys.

In all, 37 Level Loops were run all closing within 0.01 of a foot. Raw level data was processed using Foresite DXM software and adjusted using NGS Standards in an Excel Spreadsheet. A total of 88 features were surveyed during this session.

Several issues need to be explained with this Subsidence Survey session. Several features in the Oxy Geismer 3 pad area were destroyed or marked off limits, TBM 30 (Destroyed in May Survey), TBC No. 2 Relief Well (Well was being worked on), ORW 12 Relief Well (Has been Plugged and Abandoned) and InSAR ARV Antenna No. 1 (Has been knocked over). InSAR ARV Antenna appears to be the same feature. On Monument BM 5, a datum point has been added that was not present on the past surveys. Relief Well No. 1 was being worked on during this survey. Oxy Monument 3 is incased in a 6" PVC pipe and the datum point cannot be seen. The crew must feel for the datum point. The crew believes previous surveys have been on the lip of the monument and not on the datum point. This may account for the rise of 0.08' in the monuments elevation. NSDORW003 appears to have been worked on all valves are missing and a plate is bolted to the top.

Individual level runs can be found in Appendix A document entitled "Digital Level Adjustment Report July 2013".

A summary of final elevation data and a comparison to the previous survey in February and March of 2013 can be found in Appendix B in a document entitled "Vertical Survey of Wells, Monuments, LADOTD Nails, Geoprobe Wells and InSAR Reflectors July 2013"

A static survey was completed on three existing NGS Style monuments GPS 1, GPS 3 and GPS 4. In this survey a Trimble GPS receiver was set up over each monument on a 2 meter fixed height tripod. Data was logged for six to ten hours. The raw data was sent to the NGS OPUS website for processing of horizontal and vertical positions. A summary of the static logging sessions can be found in Appendix C entitled "OPUS Solution Report July 2013 Bayou Corne".

Measurments to InSAR Reflector Antennas were also made during this survey. Results can be found in the report entitled "InSAR Swamp Based Reflectors Elevations" and also a separate report titled "InSAR Swamp Based Reflector Survey July 2013".

A follow up survey may be scheduled for September of 2013.