

MICHAEL PISANI & ASSOCIATES, INC.

Environmental Consulting Services

13313 Southwest Freeway
Suite 221
Sugar Land, Texas 77478
Telephone (281) 242-5700
Facsimile (281) 242-1737
dangle@mpisani.com

1100 Poydras Street
1430 Energy Centre
New Orleans, Louisiana 70163
Telephone (504) 582-2468
Facsimile (504) 582-2470
mpisani@mpisani.com

11409 Pennywood Avenue
Baton Rouge, Louisiana 70809
Telephone (225) 755-2250
Facsimile (225) 755-2259
afix@mpisani.com

VIA EMAIL

November 9, 2012

Mr. Gary Snellgrove
Louisiana Department of Natural Resources
617 North Third Street, LaSalle Building
Baton Rouge, Louisiana 70802-5431

RE: REVISED Work Plan in Response to Directive Item #7 in Third Amendment to Declaration of Emergency and Directive, dated October 11, 2012
Assumption Parish Sinkhole
Texas Brine Company, L.L.C.

Dear Mr. Snellgrove:

Michael Pisani & Associates, Inc. (MP&A) has been retained by Texas Brine Company, L.L.C. (TBC) to provide a Work Plan in response to Directive Item #7 in the Third Amendment to Declaration of Emergency and Directive issued to TBC by the Louisiana Department of Natural Resources (LDNR) Office of Conservation on October 11, 2012.

Directive #7 states:

Cease water production from the Oxy #3 water well and begin use of this well for periodic water level determination and water quality sample and testing. On or before Friday, October 19, 2012, provide Conservation a plan to evaluate alluvial aquifer water production, groundwater flow, sinkhole chlorides, TDS and hydrocarbon migration and to mitigate adverse impacts to aquifer sustainability from use of Texas Brine Company LLC's water wells.

Background

MP&A and others were retained to investigate the occurrence of a sinkhole located within a cypress-tupelo swamp that developed at the TBC facility near Bayou Corne on August 3, 2012. As part of the investigation of the sinkhole, MP&A began monitoring the three active water wells (Oxy #1, Oxy #2, and Oxy #3) located on the TBC facility and in close proximity to the sinkhole (Figure 1) and three other active water wells located on the Georgia Gulf facility and operated by TBC on August 8, 2012. Each of these water wells is screened in the Mississippi River Alluvial Aquifer (MRVA) and has historically been, and is currently, actively pumped to supply large quantities of water for solution brine mining.

MP&A submitted a Groundwater Monitoring Work Plan to the LDNR on September 14, 2012 that described a groundwater monitoring and sampling program that MP&A has conducted to date. The groundwater sampling program includes the collection and analysis of groundwater samples from Oxy#1-3 on an every other week basis. The data from these wells have been previously submitted to the LDNR. The LDNR has also sampled these wells multiple times.

MP&A submitted the original version of this Work Plan to the LDNR on October 19, 2012. This Revised Work Plan incorporates the additions and revisions discussed with the LDNR during a November 1, 2012 meeting and subsequent correspondence.

Response to LDNR's Request to Cease Water Production from Oxy #3

TBC ceased water production from Oxy #3 so the pump could be removed (pump removed on September 29, 2012) to conduct electric logging in the well. The pump is currently scheduled to be reinstalled sometime the week of November 12, 2012, if possible, so the well can be returned to service. The location of Oxy #3 is best situated (i.e., located closest to sinkhole) to capture potential leakage from the sinkhole into the MRVA; therefore, we request that Oxy #3 be allowed to be returned to service, initially, for the collection of representative water samples. The well can be, and has been utilized for groundwater monitoring and sampling as outlined in the previously submitted Groundwater Monitoring Work Plan. Oxy #1 and Oxy #2 continue to be used for water production for solution brine mining.

We understand that the LDNR will allow reinstallation of the pump and utilization of the well to collect water samples per discussions at the November 1, 2012 meeting. We further understand that TBC will be allowed to run Oxy#3 for 12 hours prior to the collection of each water sample so a representative sample can be obtained.

Finally, we recommend returning Oxy#3 to full-time service pending acquisition of acceptable sampling results (that document the absence of petroleum hydrocarbons) from Oxy#3 and the proposed monitoring wells to be screened into the top of the MRVA. The TBC water wells essentially serve as recovery wells, especially Oxy#3 since it is located the closest to the sinkhole, to recover any water that could potentially leak from the sinkhole into the MRVA. TBC's ability to continuously pump naturally saline groundwater from the MRVA at high rates on a 24-hour per day and 7-day a week basis and turn it into a product on a continuous basis is paramount to maintaining groundwater capture, if needed.

Scope of Work

The purpose of the proposed Scope of Work (SOW) outlined below is to gather data as requested by Directive #7.

1. Evaluate Alluvial Aquifer Water Production

TBC collects and maintains water production data for Oxy#1-3 wells. These records will be compiled and evaluated to determine historical and current groundwater production rates. A summary of the information gathered, as well as copies of the well production records, will be provided to the LDNR.

2. Evaluate MRVA Groundwater Flow and Quality

The groundwater flow direction within the MRVA in the vicinity of the sinkhole is believed to be towards the east due to the active TBC pumping, as well as additional pumping for solution brine mining that is also occurring to the east of the TBC property. However, to further evaluate the groundwater flow direction within the MRVA in the vicinity of the sinkhole we propose to compile and evaluate any existing available water level data from TBC. In addition, we recommend that two additional shallow aquifer monitoring wells (MW-1 and MW-2 screened in the upper portion of the MRVA) be installed to the west of sinkhole at the approximate locations shown on Figure 1 to collect water level and water quality data. The proposed well installation activities will be conducted by Walker-Hill Environmental, Inc.

We also propose to install one deep monitoring well into the lower portion of the MRVA with a 20-foot screen to depths of approximately 200 to 220-feet below the ground surface (See Figure 1). The proposed 20-foot screen interval would fall within the screen intervals of the three existing Oxy wells (Oxy#1 202-263'bgs, Oxy#2 157 to 220'bgs and Oxy#3 180-280'bgs). We propose to utilize this monitoring well for collecting groundwater samples for comparison to groundwater data collected from the existing Oxy water production wells located on the east side of the sinkhole.

Due to access limitations as a result of the presence of the natural swamp located to the west of the sinkhole, the proposed monitoring wells are located along an old oilfield road. We understand that a short portion of this road is currently under water. Therefore, the proposed monitoring well locations are contingent upon being able to access them with truck-mounted drilling equipment and securing landowner approval for their installation and access. The number and locations of these wells may be modified based upon access and field conditions.

It is our understanding that Shaw is currently in the process of installing an observation/gas pressure monitoring/relief well (OW-4) on the northwest side of the sinkhole. We propose to utilize any available aquifer gas pressure and MRVA aquifer top depth information from this location to design the proposed monitoring wells. If these data are not available and/or not reliable then Walker-Hill proposes to utilize a hydraulic, direct push Geoprobe drill rig equipped with steel, dual tube sampling equipment to define the depth and pressure of any gas zones at the monitoring well locations.

Each approximately 2 ¼-inch diameter Geoprobe soil boring will be advanced slowly and monitored for gas at each sample interval. When gas pressure is encountered or the desired depth is reached a specially fabricated injection cap with pressure gauge and relief valve will be threaded on the drill casing. The injection cap will allow the driller to screw the cap onto the outer Geoprobe steel casing and shut off any gas flow from the borehole. The cap will also allow the borehole to be pressure grouted without removing the cap.

Once the gas zones, if encountered, have been defined a mud rotary drill rig and fresh water based 10-plus pound drilling mud will be utilized to install an approximate eight inch diameter borehole to the appropriate depth (roughly estimated to range from approximately 60 to 80-feet below the ground surface) determined by available information and/or the Geoprobe borehole(s).

A four-inch diameter carbon steel casing will then be installed to the bottom of the 8-inch diameter borehole and cemented in place with a Portland cement/bentonite grout mixture. After a minimum 24-hour cement cure time a Skinner-type, steel wellhead (rated at 1,500 psi) will be installed on the four-inch casing. The Skinner wellhead will be equipped with a stripper rubber and side discharge port below the rubber. The top of the unit will contain compression rubber to seal the outside diameter of the proposed 2-inch diameter well string at the surface.

The cased hole will then be re-entered through the Skinner wellhead with 2-inch diameter carbon steel casing equipped with a 5 or 10-foot long stainless steel screen and a sand shark wash down valve installed at the bottom of the screen. A top head drive drill rig will be utilized to slowly advance the well screen and sand shark into the MRVA and test for the presence of gas at each interval until the desired total depth is reached. Once the well screen is driven to the desired depth the remaining portion of the cased borehole will be tremie grouted from the bottom up with a Portland cement/bentonite grout mixture.

If no gas zones are encountered during the completion of the Geoprobe borehole into the top of the MRVA then the Geoprobe may be utilized to install a one-inch diameter PVC or stainless steel well casing equipped with a 5-or 10-foot long well screen in the top portion of the MRVA.

The proposed monitoring wells will be constructed of 2-inch diameter carbon steel well casing equipped with 5- or 10-foot long well stainless steel well screens installed in the top (MW-1 and MW-2) and lower (DMW-1) portions of the MRVA. Each monitoring well will be completed at the ground surface with a protective casing installed in a 2-foot by 2-foot concrete pad. A Louisiana licensed professional surveyor will survey the location and top-of-casing (TOC) and ground surface elevation of each monitoring well. Each of the wells will be developed using a submersible pump to remove three or more well volumes of water and fine particulate matter.

The wells will be used to measure water levels to evaluate groundwater flow both during pumping and when Oxy #3 is down, i.e., “static” conditions. In addition, we plan on utilizing the three proposed shallow aquifer pressure monitoring wells to be located near the sinkhole (Figure 1) and screened in the top of the MRVA that are to be installed as part of LDNR Directive Item #2 of the same Order for groundwater flow and quality monitoring purposes.

The groundwater level and water well pumping data will be utilized to evaluate the capture zone of Oxy#1-3. A summary of the groundwater flow conditions and capture zone analysis and the supporting data will be provided to the LDNR.

3. Evaluate Potential Migration of Chloride, Total Dissolved Solids (TDS), and Hydrocarbons

Groundwater samples have been collected from Oxy #1-3 since August 8, 2012, following the development of the sinkhole on August 3, 2012. MP&A proposes to continue to collect and analyze groundwater samples from Oxy #1-3 every other week to further evaluate constituent concentration trends over time. MP&A also plans on sampling the three proposed monitoring wells, MW-1, MW-2, and DMW-1, described above, on an every other week basis.

Field parameter measurements will be collected during well purging/sampling using a multiparameter meter (Insitu 9500 Troll or equivalent) equipped with a flow-through cell to measure pH, temperature, conductivity, oxygen reduction potential (ORP), dissolved oxygen and turbidity.

Each groundwater sample will be analyzed for the following parameters: benzene, toluene, ethylbenzene and xylenes (BTEX), total petroleum hydrocarbons (TPH) fractions, calcium, iron, manganese, magnesium, potassium, sodium, chloride, specific conductance, sulfate, carbonate and bicarbonate alkalinity, bromide, TDS and dissolved gases (methane, ethane, ethane, propane and butane). The samples will be analyzed by Gulf Coast Analytical Laboratories, Inc. (GCAL).

The sampling data gathered to date plus the data to be gathered as outlined above will be tabulated and utilized to evaluate the potential migration of chlorides, TDS and hydrocarbons/dissolved gases in the MRVA in the vicinity of the sinkhole. A tabulated summary of the data will be provided to the LDNR.

4. Evaluate Need for Groundwater Mitigation

Historical sampling data from water wells (used for solution mining purposes) located in the area indicates that the water quality in the MRVA is naturally poor and saline. Chloride concentrations can exceed 2,000 mg/L, or approximately ten times the EPA Secondary Maximum Contaminant Level (SMCL) of 250 mg/L. Adverse impacts that would make the MRVA water unfit for use for solution brine mining have not been observed in the data gathered to date from Oxy #1-3 since the formation of the sinkhole.

A comprehensive plan for groundwater mitigation will be prepared, if necessary, at a later date when the nature of any potential impacts to the MRVA are determined. In the meantime, groundwater data will continue to be gathered. A path forward will be discussed with and approved by the LDNR once a sufficient amount of data has been received and evaluated to determine constituent concentration trends over time.

5. Schedule and Reporting

Initially, groundwater levels will be measured once or twice weekly, and groundwater quality samples from the production wells and monitoring wells (when installed) will be collected every other week. After sufficient time, the monitoring and sampling schedule may need to be revised based on the data gathered following discussions with the LDNR. The schedule for the installation of the new monitoring wells may also be dependent on the installation and successful operation of the gas vent wells.

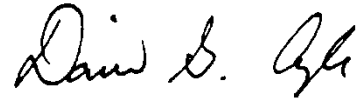
A letter report documenting the results of data gathered during the implementation of Tasks 1 through 3 will be submitted within two weeks following the installation of the proposed monitoring wells and receipt of the final laboratory report containing the sampling results from the new monitoring wells.

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Mr. Gary Snellgrove

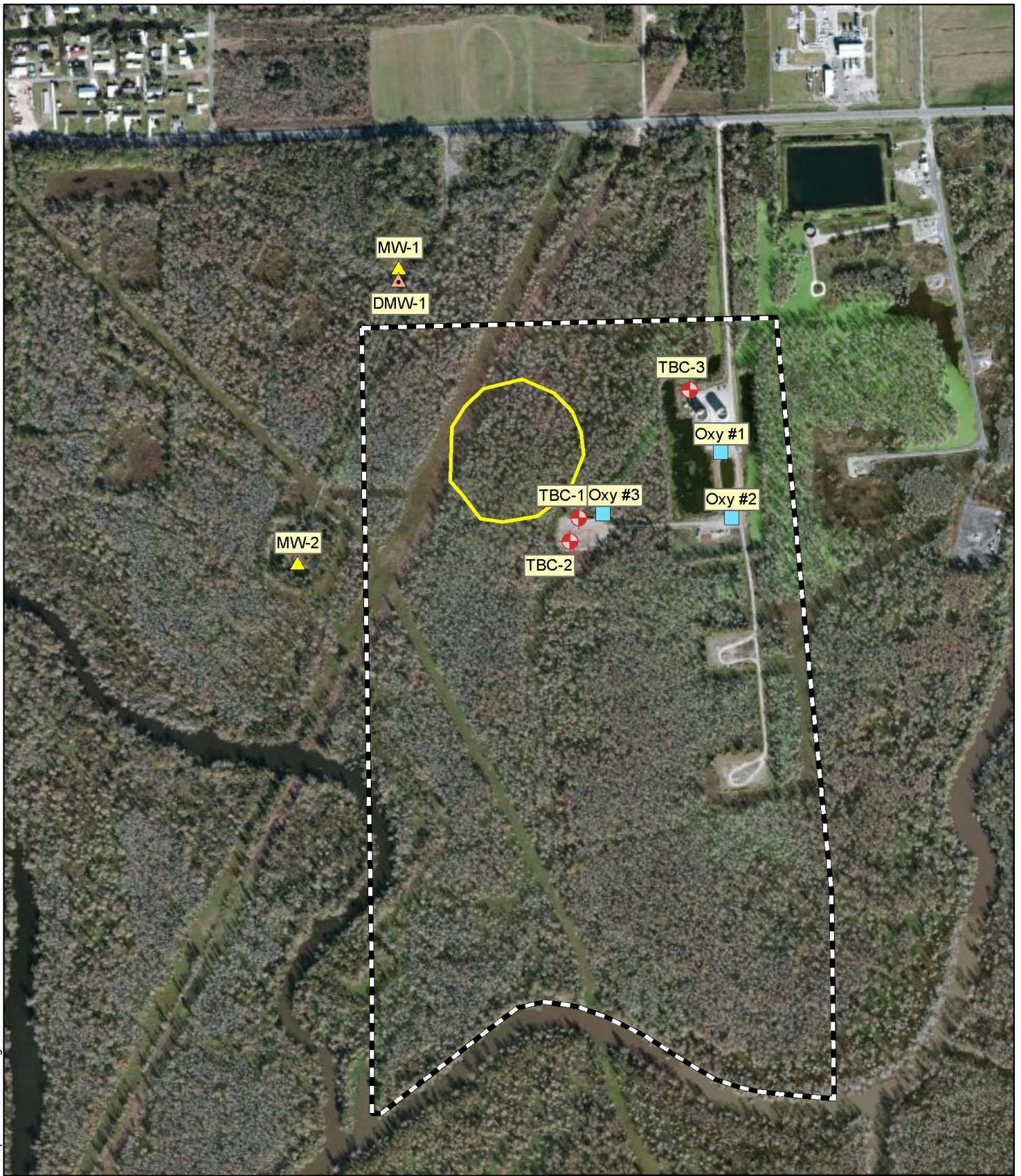
Please contact us if you have any questions.

Sincerely,

MICHAEL PISANI AND ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "David G. Angle". The signature is written in a cursive style with a large initial "D" and "A".







David G. Angle, P.G., CGWP



Path: D:\80-05_Sinkhole\maps\03_Report\01 - Proposed GW Monitoring Locations.mxd

Final locations will be dependent on field access.
 Bing Maps imagery basemap via ArcGIS Online.

Legend

-  Proposed Shallow MRVA Monitoring Well Location
-  Proposed Deep MRVA Monitoring Well Location
-  RESPEC Pressure Monitoring Well
-  Water Supply Well Monitoring Location - MRVA
-  Approximate Property
-  Sinkhole Extent as of 10-4-12

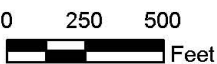


Figure 1
 Proposed Ground Water Monitoring Well Locations
 Assumption Parish, Louisiana

MICHAEL PISANI & ASSOCIATES, INC.

Environmental Consulting Services
 Houston, Texas New Orleans, Louisiana Baton Rouge, Louisiana

Designed: JRB	Drawn: JRB	Checked: DGA	Date: 11/7/2012	Project 80-05
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