

GW-243

**Regency Energy Services
House Compressor**

**Workplan for Well
Installation and Excavation
9/23/13**

Griswold, Jim, EMNRD

From: Griswold, Jim, EMNRD
Sent: Friday, November 08, 2013 2:41 PM
To: Rachel Johnson
Cc: 'Bockisch, Bernie'
Subject: RE: House Compressor Station Workplan (GW-243)

Ms. Johnson,

I have reviewed the workplan for monitoring well installation and excavation backfilling submitted on Regency's behalf by CRA and dated 9/23/13 for the House CS. This workplan is approved and the described activities can commence as soon as practicable. Please retain a copy of this email for your files as no hardcopy will be sent. Thank you.

Jim Griswold

Senior Hydrologist

EMNRD/Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505.476.3465
email: jim.griswold@state.nm.us

From: Bockisch, Bernie [<mailto:bbockisch@croworld.com>]
Sent: Wednesday, September 25, 2013 4:16 PM
To: Griswold, Jim, EMNRD
Cc: Rachel Johnson
Subject: House Compressor Station Workplan (GW-243)

Mr. Griswold,

On behalf of Regency Energy Field Services, Conestoga Rovers and Associates is submitting this workplan at the House Compressor Station under Discharge Permit GW-243. The site is located at Unit O, Section 11, Township 20 South, Range 38 East in Lea County, New Mexico. The workplan is to perform additional assessment activities and backfill an open excavation at the facility. Feel free to contact me should you have any questions or comments.

Bernard Bockisch, PMP

Conestoga-Rovers & Associates (CRA)

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September 23, 2013

Reference No. 082151

Mr. Jim Griswold
New Mexico Oil Conservation Division
District 1
1220 South St. Francis Dr.
Santa Fe, NM 87505

Dear Mr. Griswold:

Re: Work Plan for Well Installation and Remedial
Excavation Restoration Activities
House Compressor Station
Discharge Permit GW-243
Unit O, Section 11, Township 20 South, Range 38 East
Lea County, New Mexico

Conestoga-Rovers and Associates (CRA) is pleased to present this work plan on behalf of Regency Energy Field Services (Regency). The work plan describes the tasks that will be performed to:

- Install a groundwater monitoring well to assist with collecting background groundwater quality data;
- Install an additional monitoring well down-gradient of the excavation to further assess site conditions;
- Replace a monitoring well that has been obstructed; and
- Backfill the existing open excavation.

This proposal is being presented based on our conversation held on May 28, 2013.

The House Compressor Station (Site) is located approximately 10 miles northeast of Eunice, New Mexico. The legal description is unit Letter "J" (NW/SE), Section 11, Township 20 South, Range 38 East in Lea County, New Mexico (Figure 1). The groundwater assessment activities being performed at this facility are currently covered by an active New Mexico Discharge Plan & Permit (GW-243).

The predominant land use in the area is oil and gas, ranching, and other commercial uses. The site is surrounded by vacant land to the north, east, and south. A landfarm is located immediately adjacent to the west of the Site.

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PROJECT HISTORY

The removal of two above ground storage tanks and a below grade sump from the site was performed in October 2008. The removal was requested by the New Mexico Oil Conservation Division (NMOCD) based on a facilities inspection of the House Compressor Station. This equipment was located on the northwest and north sides of the House Compressor Station (see Figure 2).

Soil samples collected from beneath the tanks and soil borings drilled at the Site indicated the presence of petroleum hydrocarbons in the soil. The analytical results indentified the presence of petroleum hydrocarbon concentrations above regulatory limits in the soil beneath the tanks. A water sample collected from one of the open boreholes indicated that concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) were below regulatory limits. However, elevated chloride concentrations were observed.

GROUNDWATER ASSESSMENT

Three groundwater monitoring wells (MW-1, MW-2, and MW-3) were installed at the Site in November 2008 (see Figure 2) and subsequently sampled. Laboratory analytical results of samples indicated the presence of chloride concentrations above regulatory limits in the groundwater. Minor concentrations of hydrocarbons were initially observed. However, hydrocarbon concentrations in groundwater samples have been below the laboratory reporting limit since June 2009.

An obstruction was found in MW-3 during the third quarterly monitoring event (March 2010). The obstruction has prevented the well from being sampled since that time. This has prevented obtaining a groundwater direction and gradient to date.

SOIL REMEDIATION

The soil located beneath and around the tanks was excavated to remove petroleum and chloride impacted soil. Approximately 4700 in-place cubic yards of impacted soil was removed from the site between January and February 2009. The soil consisted primarily of caliche and the walls of the excavation were nearly vertical.

To date the excavation has not been backfilled and is currently surrounded with berms and safety fencing.



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SITE CHARACTERISTICS

Data from the first sampling event (November 2008), indicated that the groundwater gradient was to the east. Groundwater gradients have not been calculated due to the lack of a third monitoring point (obstruction in MW-3). Depth to groundwater is approximately 33 feet below ground surface. Historical data from MW-1 and MW-2 indicate the groundwater level has been decreasing. Based on this data, groundwater levels have decreased approximately 2 feet (see Figure 3)

The presence of BTEX concentrations in the groundwater was only briefly detected in MW-1 in November 2008 and MW-3 in June 2009. The presence of BTEX concentrations has not been observed in either MW-1 or MW-2 since that time (MW-3 has been obstructed since March 2009).

Chloride concentrations in MW-1 and MW-2 were originally below the New Mexico Water Quality Control Commission (NMWQCC) regulatory limit of 250 milligrams per liter (mg/l). However, chloride concentrations have been steadily increasing and exceeded the regulatory limit in September 2011. The chloride concentrations currently range from 370 to 383 mg/l.

SOIL CONFIRMATION SAMPLING

Confirmation sampling indicated the presence of petroleum hydrocarbons above regulatory limits remaining in the excavation floor and a portion of the east wall (see Figure 4). The depth of the excavation was halted at approximately 18 feet (ft) below ground surface (bgs). Excavation beyond 20 feet would require certification by a professional engineer. Excavation of the impacted portion of the east wall could not be performed due to the presence of an active pipeline. Benching or sloping of the excavation boundary was not practical due to close proximity of piping, equipment, and the western property boundary.

At this time, Regency is requesting permission from the NMOCD to backfill this excavation and include the installation of a liner. The current presence of underground piping and surface equipment prohibits further safe excavation of soil. The presence of an open excavation at the site is not safe. In addition, backfilling the excavation would minimize infiltration of surface water into the impacted area. Regency requests that remediation of the soil to the east of the existing excavation be performed when closure and decommissioning of the compressor station occurs.



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SCOPE OF WORK

The scope of work for this project will include groundwater monitoring well installation. Drilling will be performed by a State of New Mexico licensed driller. The scope of work will also include the backfilling of the existing open excavation.

Task 1: Project Preparation

This task includes preparing and submitting this work plan and other project preparation activities that occur after work plan approval, but before fieldwork mobilization. After receiving authorization to proceed from stakeholders, CRA will:

- Develop a Health and Safety Plan (HASP) and job safety analyses (JSAs) for the field work. The project HASP will be maintained onsite. It will be reviewed and signed by on-site personnel, subcontractors, and authorized visitors. Personal protective clothing including fire retardant clothing, steel-toed work boots, gloves, safety glasses, and hard hats will be required (basic Level D requirements) during field tasks. Personnel will also perform monitoring for hydrogen sulfide using personal monitors.
- Obtain written approval for the well locations from the NMOCD.
- Coordinate with the Regency Land Man to obtain access from the property owner (if necessary);
- Submit the Application for Permit to Drill a Well With No Consumptive Use of Water to the New Mexico Office of the State Engineer (NMOSE);
- Develop work orders and contracts for the drilling subcontractor; and
- Notify the Client a minimum of 48 hours prior to the commencement of drilling activities.

The drilling and excavation contractors will notify New Mexico One-Call to facilitate location of underground utilities and pipelines prior to excavation activities.

Task 2: Groundwater Monitoring Well Installation

Two new groundwater monitoring wells are proposed to be installed. One of these groundwater monitoring wells will be installed to collect background groundwater quality data (PMW-4). This well will be located in the northwest corner of the property (see Figure 2). The second well (PMW-5) will assess groundwater conditions down-gradient (inferred to the east based on historical data) of the current excavation (see Figure 2).

Prior to mobilizing the drilling equipment to the Site, the boring location areas will be marked for utility location. CRA will confirm that the drilling contractor perform utility notifications at least 48-hours prior to mobilization (required by the State of New Mexico).



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An air-rotary drilling rig will be used to advance the proposed borings to approximately 45 ft bgs. The drilling rig will be operated by a licensed State of New Mexico water well driller. A scientist will record the subsurface lithology and sample data on soil boring logs. One sample from every five foot interval will be field screened for the presence of volatile organic vapors with a photo-ionization detector (PID) and chlorides using Hach QuanTab Chloride test strips. If PID or chloride readings exceed 100 ppm during field screening, then that sample may be subject to additional hydrocarbon or chloride analysis by laboratory methods. The total depth and construction of the well and nature of any sampling of soils will be based on the professional judgment of the CRA scientist in coordination with Regency personnel.

Upon completion of drilling, the boring will be converted to a groundwater monitoring well. The groundwater monitoring well will be constructed with 2-inch (in.) diameter polyvinyl chloride (PVC) casing and screens. The well screen will consist of 15 feet of 0.010" machine slot screen. The well screen will be placed to straddle the vadose/groundwater. The annulus of the boring will be backfilled with 10/20 silica sand from the bottom of the boring to approximately 2 feet above the top of the well screen. A 3-ft thick bentonite seal will be placed above the sand pack. The remainder of the borehole will be grouted with a cement/bentonite slurry. The well will be completed with an above ground surface completion placed within a minimum 24-in. by 24-in. by 4-in. thick concrete pad.

The drill cuttings will be placed in DOT-approved 55 gallon drums. A composite waste characterization sample will be collected from the drill cuttings and analyzed for hazardous characteristics to evaluate appropriate management methods.

Each well will be developed by bailing or pumping until at least three wetted borehole volumes are removed from the aquifer and parameters of pH, temperature, and conductivity readings stabilize (consisting of two readings within 5 percent of each other). Water from well development will be placed in DOT-approved 55 gallon drums. Monitor well locations and top of casing elevations will be surveyed by a registered land surveyor.

Groundwater sampling will be performed during the regularly scheduled quarterly groundwater monitoring event.

Task 3: Monitor Well Abandonment and Replacement

Monitor well 3 will be plugged and abandoned in accordance with NMOSE regulations.



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A new monitoring well (PMW-3, following the procedures described below) will be installed in the vicinity of the former MW-3. The newly installed well will be drilled and constructed in the same manner as MW-1 and MW-2 (described above).

Task 4: Final Confirmation Sampling And Excavation Backfill

Soil data presented in Figure 4 is based on historical information. This information is several years old, generally incomplete, and may not be currently accurate. In order to assess the current level of hydrocarbon and chloride concentrations, soil sampling will be performed prior to backfilling. The purpose of the confirmation soil samples is to document the existing concentrations in the excavation to assist with future remediation efforts.

For safety sake, soil samples will be collected using mechanical equipment with a sufficient reach to access the sample locations. The location and depth of the soil samples will be recorded. Soil samples will be submitted for laboratory analysis of TPH by EPA Method 8015, BTEX by EPA Method 8021, and chlorides by EPA Method 300.0.

Upon completion of sample collection, clean fill will be placed in the excavation. The fill will be wheel compacted in place using on-site equipment. Backfilling of the excavation will be performed to a depth of 4 ft bgs when a liner will be installed.

A 20 mil polyethylene liner shall be placed at 4 ft bgs in the bottom of the excavation. Liner seams shall be overlapped a minimum of 24 inches. A minimum of 1 foot of clean sand will be placed over and under the liner to prevent damage during backfilling. The remainder of the excavation will be backfilled with clean fill to grade.

Since the Site is currently an operating compressor station, reseeding of the surface area will not be performed at this time.

Task 5: Monitor Well Activities Reporting

Data from the field activities will be included in the annual groundwater monitoring report. The annual groundwater monitoring report will include the following:

- A scaled site plan showing the locations of the monitor wells;
- Tabulation of field screening and laboratory analytical test results;
- Groundwater gradient and concentration maps;
- Comparison of site groundwater quality data to the newly installed background well; and
- Documentation of Task 4 (backfilling of the excavation).



**CONESTOGA-ROVERS
& ASSOCIATES**

September 23, 2013

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APPROVAL REQUEST

On behalf of Regency, CRA requests NMOCD approval of this proposed workplan to perform monitor well installation and backfilling of the excavation. This workplan will be implemented upon NMOCD approval, coordination with stakeholders, and availability of staff.

If you have any questions or comments with regards to this work plan, please do not hesitate to contact our Albuquerque office at (505) 884-0672. Your timely response to this correspondence is appreciated.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Bernard Bockisch, PMP
Senior Project Manager

Thomas C. Larson
Principal

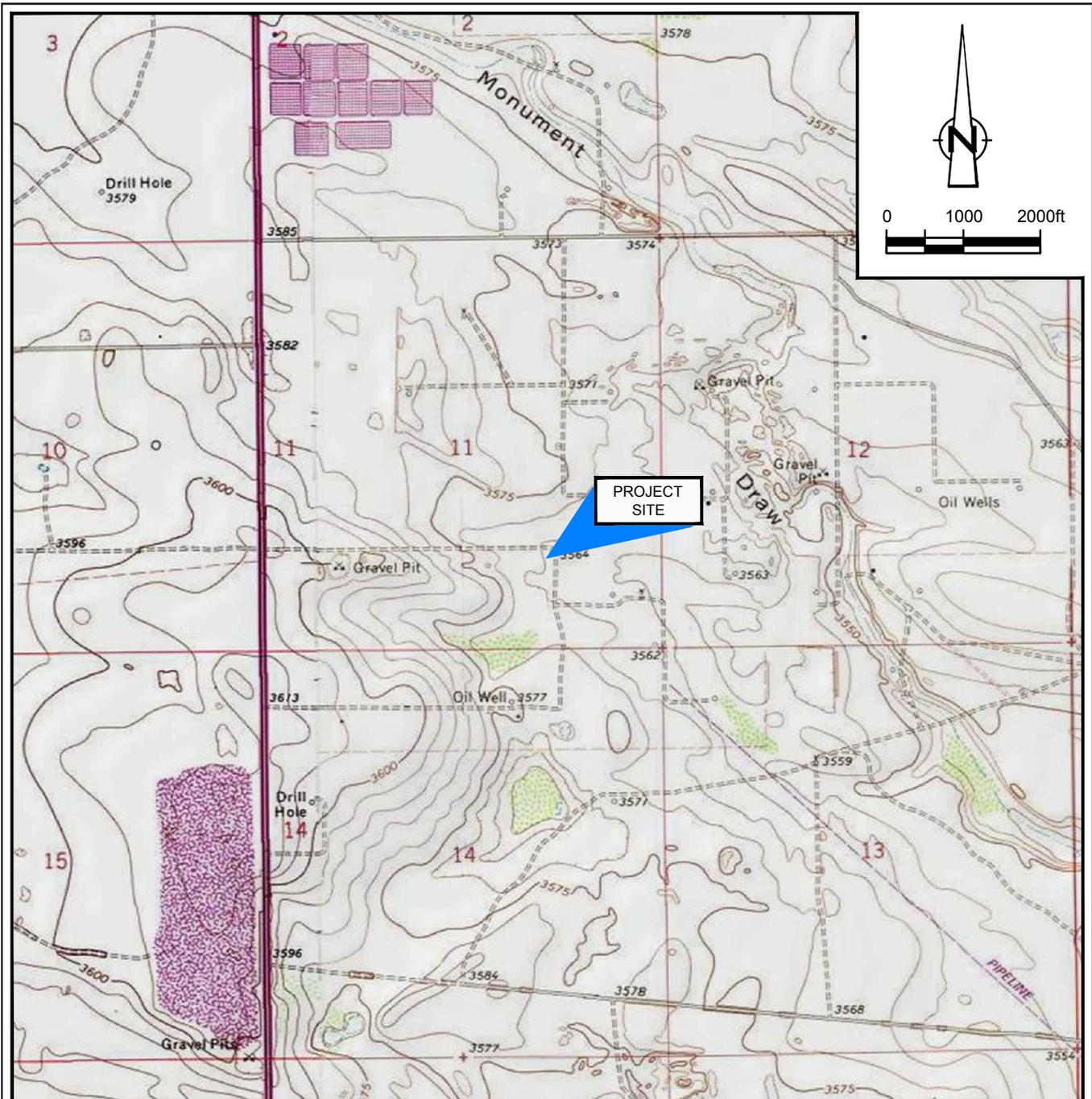
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Encl. (4)

Enclosures:

- Figure 1 - Site Location Map
- Figure 2 - Site and Proposed Monitoring Well Location Map
- Figure 3 - Groundwater Depth and Chloride Concentration Vs. Time.
- Figure 4 - Sample Location Map

FIGURES

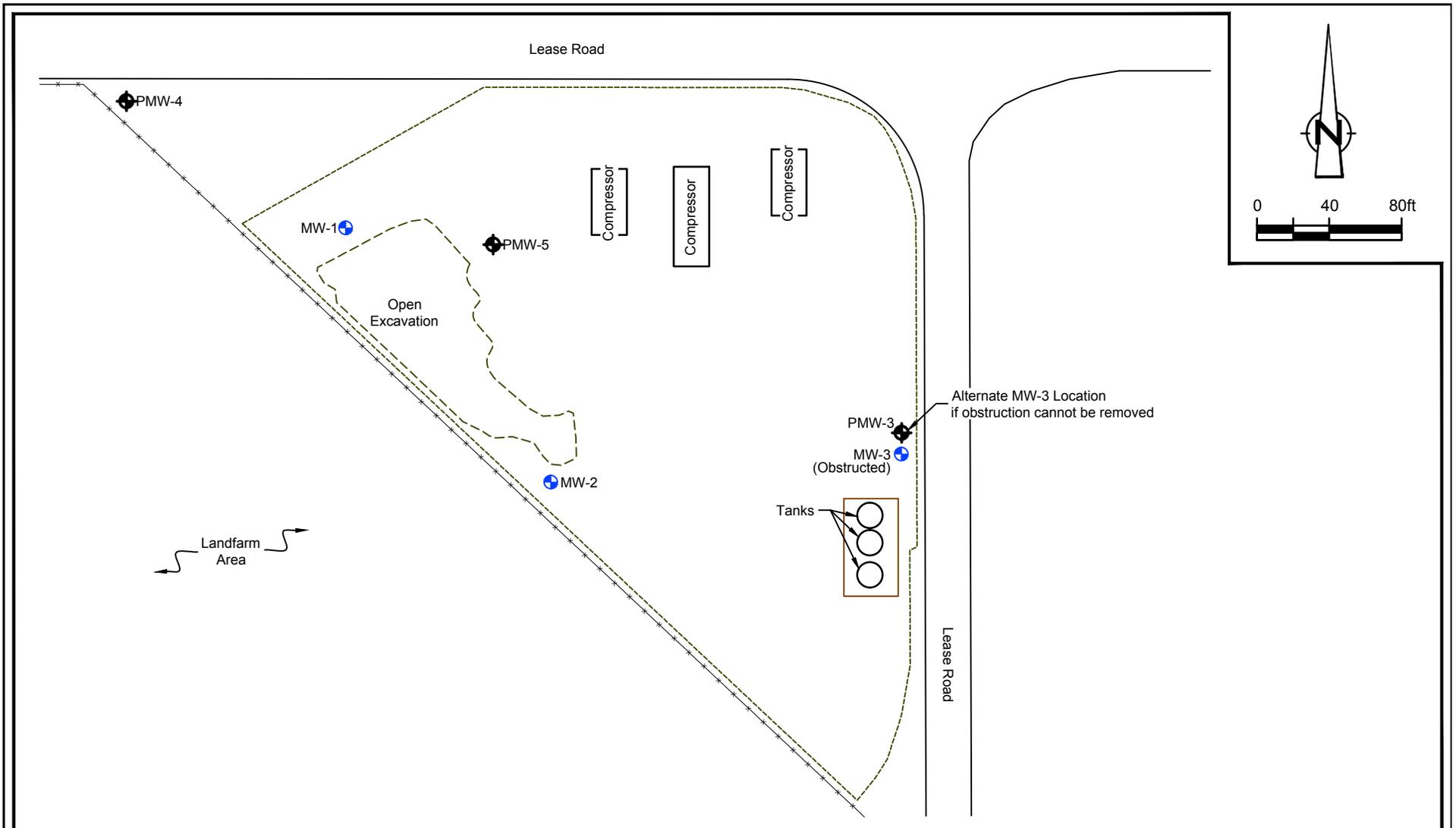


SOURCE: USGS 7.5 MINUTE QUAD
 "HOBBS SE AND HOBBS SW, NEW MEXICO"

LAT/LONG: 32.5837° NORTH, 103.1155° WEST
 COORDINATE: NAD83 DATUM, U.S. FOOT
 STATE PLANE ZONE - NEW MEXICO EAST

Figure 1
 SITE LOCATION MAP
 HOUSE COMPRESSOR STATION
 LEA COUNTY, NEW MEXICO
Southern Union Gas





LEGEND	
	Existing Monitoring Well Location
	Proposed Monitoring Well Location
	Excavation Limits
	Fence Line

Figure 2
 SITE AND PROPOSED MONITOR WELL LOCATION MAP
 HOUSE COMPRESSOR STATION
 LEA COUNTY, NEW MEXICO
Southern Union Gas



Groundwater Depth and Chloride Concentration Vs. Time

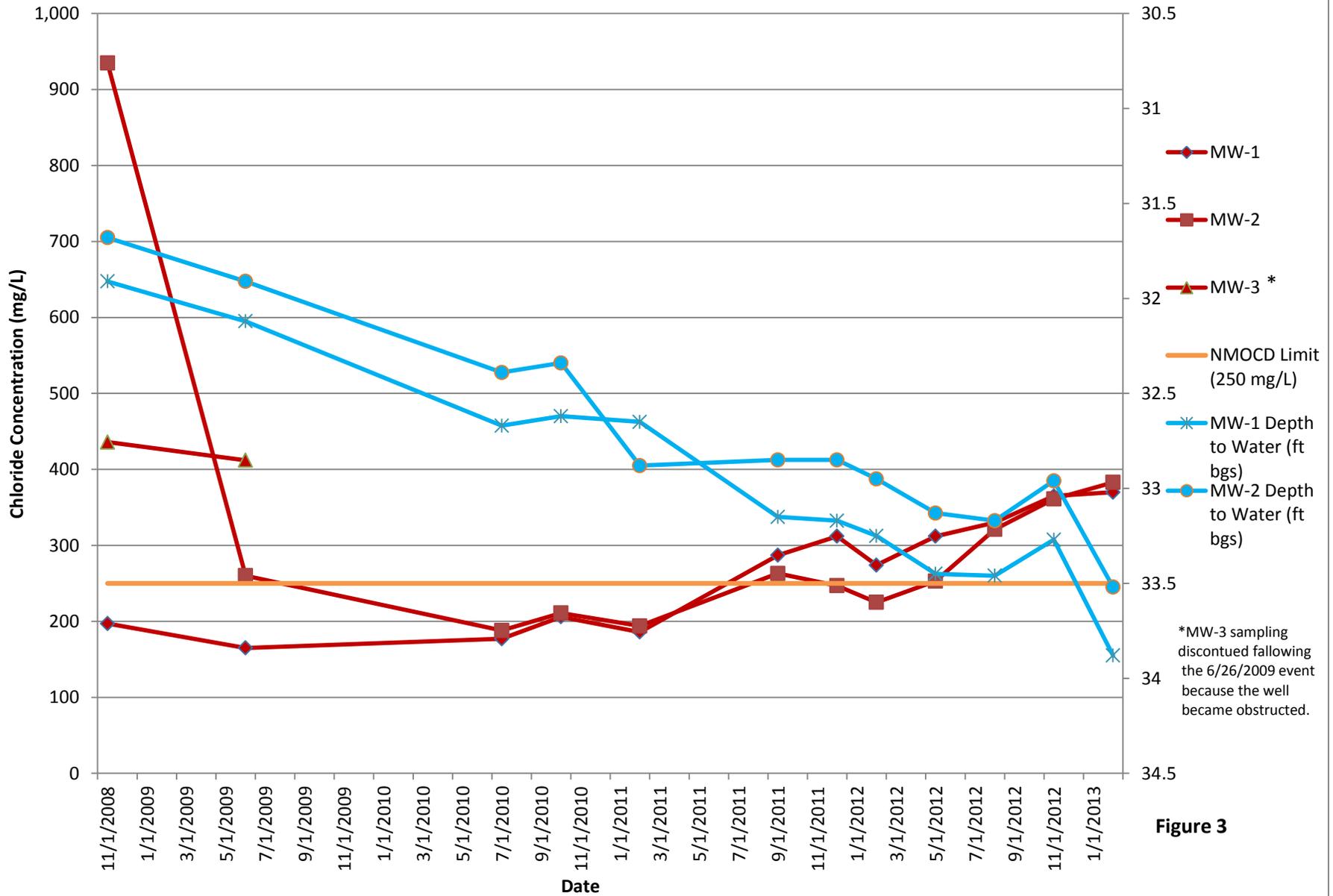


Figure 3

*MW-3 sampling discontinued following the 6/26/2009 event because the well became obstructed.

NOTES:

1. Locations are based on interpretation of historic data.
2. Concentration will be confirmed prior to backfilling.



LEGEND

- Existing Monitoring Well Location
- Existing Soil Boring Location
- Excavation Limits
- Fence Line
- Sample Identifier
- Ramp- <10 mg/kg
- Chlorides Concentration in milligrams/kilogram



Figure 4
SAMPLE LOCATION MAP
HOUSE COMPRESSOR STATION
LEA COUNTY, NEW MEXICO
Southern Union Gas