

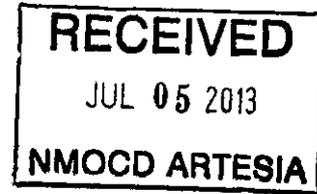


Kegan W. Boyer, P.G.
Project Manager

Upstream Business Unit
Environmental Management
Company
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Houston, Texas 77002
Tel 713-372-7705
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July 3, 2013

Mr. Mike Bratcher
New Mexico Oil Conservation Division
District 2
811 South First Street
Artesia, New Mexico 88210



Re: Chevron Pardue Farms 27-12 Well Site
RP No. 2RP-1395

Dear Mr. Bratcher,

With respect to the Pardue Farms 27-12 project site (2RP-1395) located in Eddy County, New Mexico, Chevron is planning to install an upgradient well to assess 'background' water quality in the vicinity of the release area.

On behalf of Chevron Environmental Management Company (CEMC), Conestoga-Rovers & Associates (CRA) has prepared the enclosed Workplan describing proposed well installation activities at the above-referenced project site. This Workplan (and the proposed activities therein) are responsive to the request made during a April 19, 2013 conversation between yourself and CRA personnel.

Contingent on contractor availability, CEMC plans to move forward with the implementation of the proposed activities in late July or early August. In advance of our proposed timeline, should you have any questions or concerns regarding the proposed activities, please feel free to contact me.

We appreciate your continued support of this project.

Sincerely,

Kegan W. Boyer, P.G.
Environmental Project Manager



**CONESTOGA-ROVERS
& ASSOCIATES**

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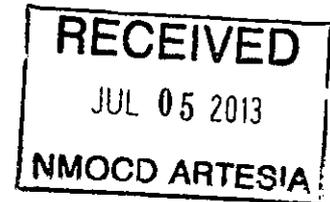
June 28, 2013

Reference No. 076323

Mr. Mike Bratcher
New Mexico Oil Conservation Division
District 2
811 S. First Street
Artesia, NM 88210

Dear Mr. Bratcher:

Re: Workplan for Background Well Installation
Chevron Pardue Farms 27-12 Well Site
RP # 2RP-1395
NE/4, SW/4, Section 27, Township 23S, Range 28E
Latitude: N 32.27358, Longitude: W 104.07818
Eddy County, New Mexico



Conestoga-Rovers and Associates (CRA) is pleased to present this proposal to install a groundwater monitoring well to assist with collecting background groundwater quality data. This proposal is being presented based on a conversation that CRA had with you on April 19, 2013. During that conversation, you indicated that the NMOCD would like to have up-gradient "background" well data to compare to existing groundwater concentrations in the release area. Total dissolved solid (TDS) concentrations in groundwater at this locale are elevated. Historical information indicates that the observed concentrations may be naturally occurring. The presence of background TDS concentrations in excess of 10,000 milligrams per liter (mg/l) may assist with closure of the site.

PROJECT INFORMATION

The Site is an active well location situated approximately one mile southeast of Loving in Eddy County, New Mexico (see Figure 1, Site Location Map). It is located in the northeast quarter of the southwest quarter of Section 27, Township 23 South, Range 28 East. Chevron personnel who were interviewed indicated that the 27-12 Pardue Farms well produces approximately 12 barrels of crude oil and 140 barrels of water per day. These fluids are transmitted via flowline to a central tank battery on the Pardue Farms lease. The surface property is owned by private interests. The surrounding area is primarily developed for oil and gas extraction and agricultural purposes.

A leak reportedly occurred in the spring of 2010 from a flowline (see Figure 2, Proposed Background Well Location Map). Based on the size of the surface expression of the leak, the volume was initially estimated at less than 5 barrels of oil and water.

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June 28, 2013

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This volume is below New Mexico Oil Conservation Division (NMOCD) reporting requirements and consequently the District 2 office in Artesia was not notified.

Six additional soil borings were installed at the Site in April 2012 to further assess the release. Three of these borings were converted to groundwater monitor wells. As part of this assessment, a review of water quality data from surrounding wells was performed and a report of findings was submitted to Mr. Mike Bratcher with the NMOCD District 2 (CRA, November 2012). The results of this assessment can be summarized as follows:

- Petroleum hydrocarbon concentrations in the soil appear to be predominately localized within 5 five feet of ground surface. The petroleum hydrocarbons that are present are predominately diesel range organics;
- Soil concentrations of chlorides exceed NMOCD Recommended Remedial Action Levels. The results of the soil assessment indicate maximum chloride concentrations in soil are located at 5 feet (ft.) below ground surface (bgs) and diminish with depth;
- Petroleum hydrocarbon concentrations were not detected in groundwater above the laboratory reporting limit;
- Chloride and TDS concentrations were observed in groundwater samples collected from wells at the Site. These concentrations generally exceeded New Mexico Water Quality Control Commission (NMWQCC) regulatory limits. However, historical data from wells located in the vicinity of the Site indicate that background concentrations of TDS and chloride generally exceed NMWQCC regulatory limits. This data indicates that these concentrations are most likely naturally occurring in the groundwater;
- The estimated depth to groundwater beneath the site is 40 feet bgs. A Form C-141 Release Notification and Corrective action document dated November 7, 2012 was submitted to the NMOCD by the Chevron Eunice FMT. A remediation permit number 2RP-1395 was issued by the NMOCD District 2 office in association with this incident.

SCOPE OF WORK

The scope of work for this project will involves the installation of one groundwater monitoring well to collect background groundwater data. Groundwater samples will also be collected and analyzed from the three existing groundwater monitoring wells for comparison purposes. The proposed drilling contractor for this project is White Drilling from Clyde, Texas.



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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, CRA will:

- 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 all field tasks. The project HASP will be maintained onsite. It will be reviewed and signed by on-site personnel, subcontractors, and authorized visitors;
- Obtain written approval for the well location from the NMOCD;
- Coordinate with the CEMC Land Man to obtain a access from the property owner;
- Develop a Health and Safety Plan (HASP) and job safety analyses (JSAs) for the field work;
- 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 contractor will notify New Mexico One-Call to facilitate location of underground utilities and pipelines prior to excavation activities.

Task 2 - Groundwater Monitoring Well Installation and Sampling Event

Well Installation

The new background groundwater monitoring well will be installed approximately 75 feet upgradient (south) of MW-2 (the most upgradient well, 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). A post-hole digger or similar borehole clearance equipment will be used to clear the boring location up to a depth of approximately 5-feet below ground surface (bgs) and approximately 10-inches in diameter.

An air-rotary rig drilling rig will be used to advance the proposed boring to approximately 55-feet 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.



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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 CEMC 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 20 feet of 0.020" 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.

The 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 a DOT-approved 55-gallon drum. Top of casing elevations will be surveyed to the nearest 0.01 foot using a surveyor's rod and level. The location of the well will be assessed from GPS coordinates.

Groundwater Sampling

Groundwater samples will be collected from the three existing monitoring wells (MW-1, MW-2 and MW-3) in addition to the newly installed background groundwater monitoring well. Prior to sampling, static water level readings will be collected using a decontaminated water level probe.

Groundwater monitoring wells will be purged using new disposable bailers. A minimum of three well volumes will be purged from each well or until parameters of pH, temperature and conductivity readings stabilize (consisting of two readings within 5 percent of each other).



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Groundwater samples will be obtained by bailer after well purging. Each sample will be labeled, placed on ice and submitted to Xenco Laboratories in Odessa, Texas for analyses of chlorides by EPA Method 300.1 and total dissolved solids (TDS) by Method SM20 2540C.

All drilling/purge water and decontamination fluids generated during the groundwater gauging and monitoring events will be containerized, analyzed for waste characterization purposes and properly disposed of at an approved CEMC waste facility. For budgeting purposes CRA has included \$1,500 for disposal of cuttings and development water. Should disposal costs exceed this, CRA will receive approval from the CEMC project manager before proceeding with disposal. These wastes will be managed by CRA's Waste Management Group in accordance with CEMC process and procedures.

Task 3: Reporting and Coordination with NMOCD

A short letter report summarizing well installation and sampling activities will be submitted. The letter report will include a Site description, project history, description of field events, a discussion of results and recommendations (if any). The report will include:

- A scaled site plan showing the locations of the monitor wells and other site features;
- Tabulation of field screening and laboratory analytical test results;
- Groundwater gradient and concentration maps; and
- Comparison of site groundwater quality data to the newly installed background well.

With approval from CEMC, the report will be provided to the NMOCD. Discussions will be held with NMOCD to determine if site closure can be obtained or if additional work (soil removal, well abandonment, etc.) will be required by the NMOCD.

SCHEDULE

CRA is prepared to initiate the scope of work immediately, subsequent to CEMC approvals, the availability of resources and stakeholder concurrence. The fieldwork for this project is anticipated to require 3 days to complete, not including any delays for inclement weather or other unforeseen events. A start date will be provided following your approval.



**CONESTOGA-ROVERS
& ASSOCIATES**

June 28, 2013

Reference No. 076323

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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

Handwritten signature of Bernard Bockisch in cursive.

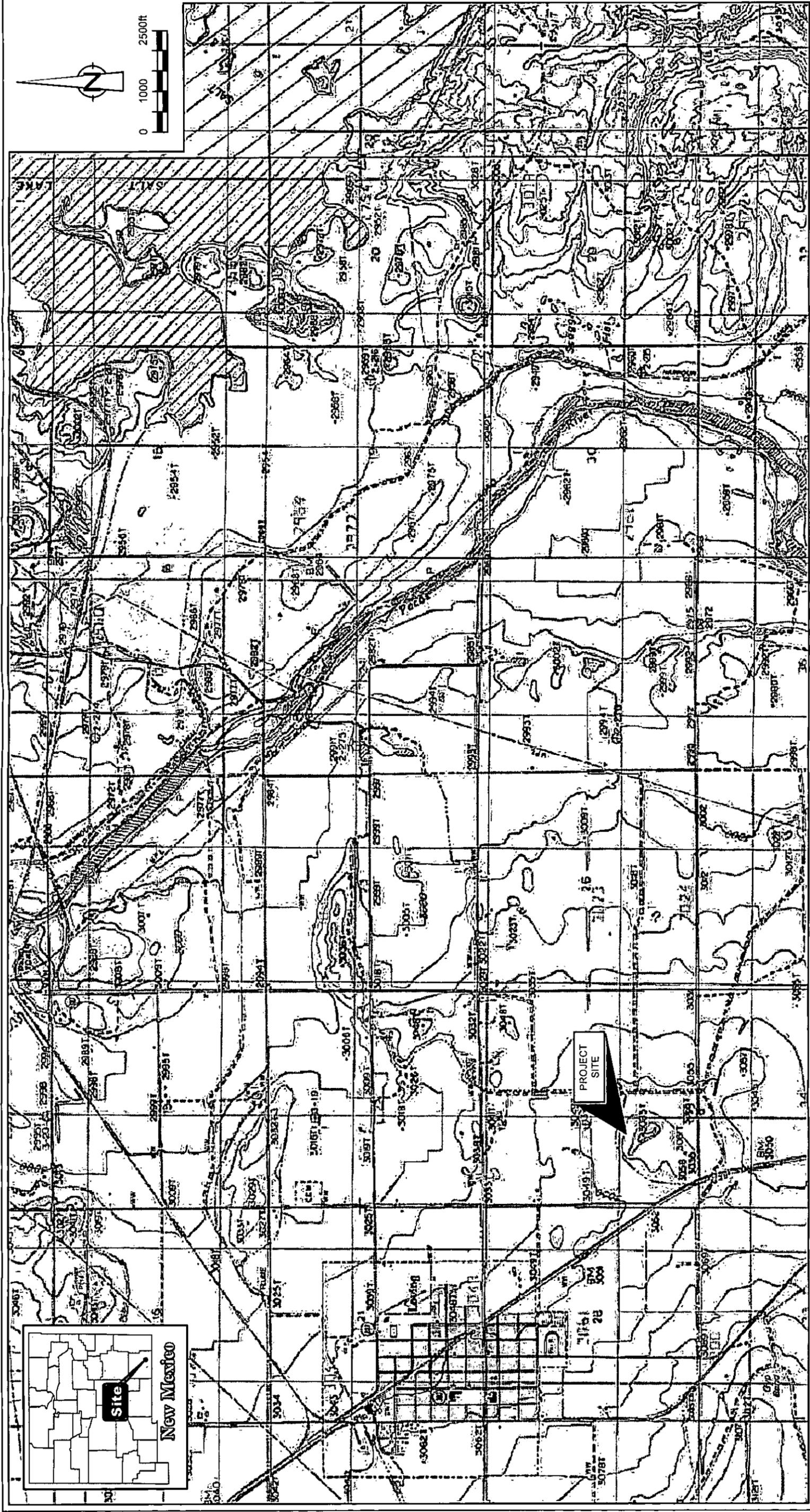
Bernard Bockisch, PMP
Senior Project Manager

Handwritten signature of Thomas C. Larson in cursive.

Thomas C. Larson, PG
Principal

BB/mc/1
Encl. (2)

FIGURES



SOURCE: USGS 7.5 MINUTE QUAD
"LOVING, NEW MEXICO"

LAT/LONG: 32.27358° NORTH, 104.07818° WEST
COORDINATE: NAD83 DATUM; U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 1

SITE LOCATION MAP
PARDUE FARMS SOIL AND GROUNDWATER ASSESSMENT
LOVING, NEW MEXICO
Chevron Environmental Management Company

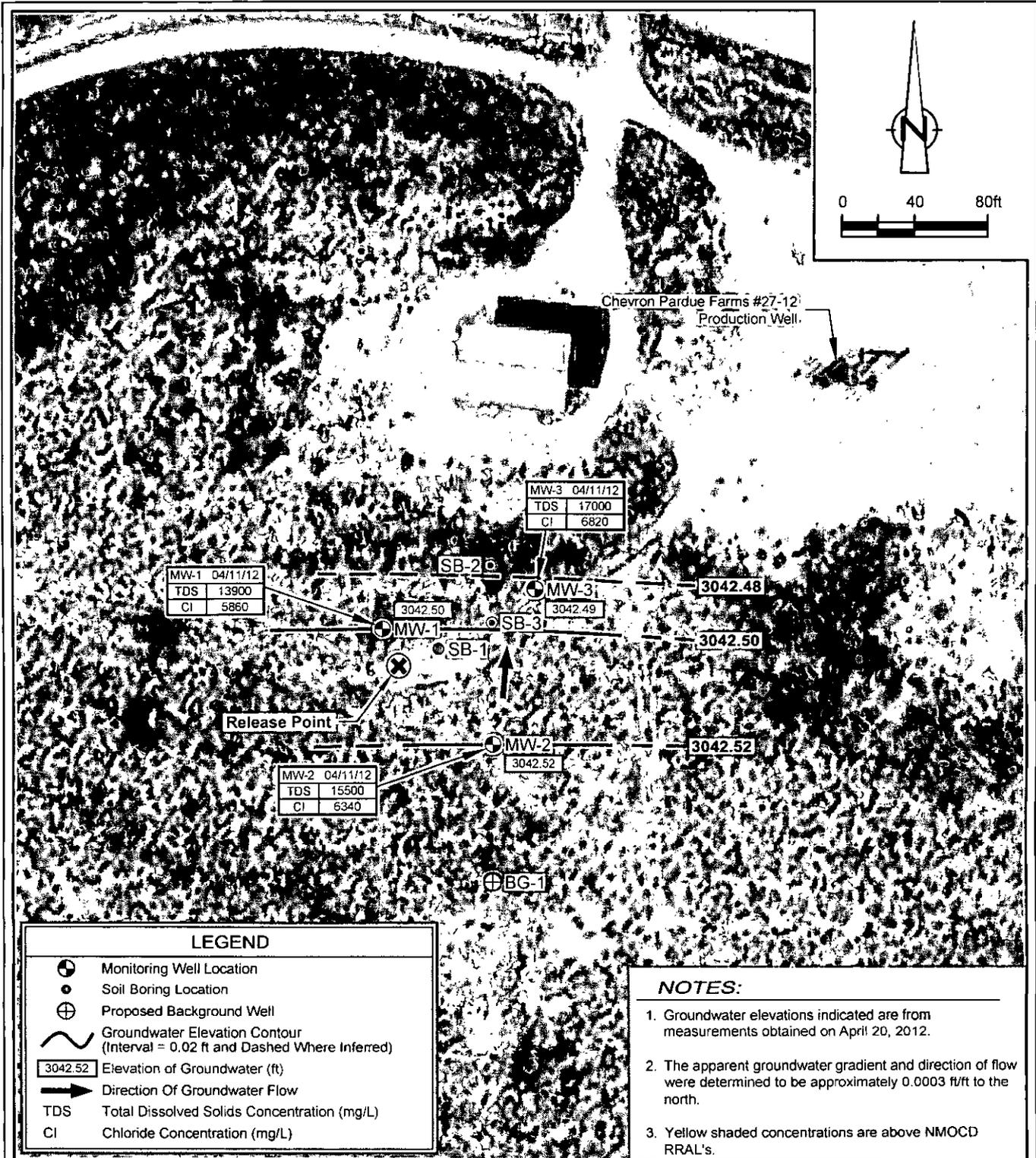


Figure 2
PROPOSED BACKGROUND WELL LOCATION
PARDUE FARMS SOIL AND GROUNDWATER ASSESSMENT
LOVING, NEW MEXICO
Chevron Environmental Management Company

