

3R – 239

GWM WP

08 / 29 / 2014



MWH

BUILDING A BETTER WORLD

August 29, 2014

Mr. Glenn von Gonten
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: 2014 Monitoring Well Installation Work Plan – State Gas Com N#1
El Paso CGP Company – Pit Groundwater Remediation Sites
NMOCD Order Number: 3RP-239-0

Dear Mr. von Gonten:

MWH Americas, Inc., on behalf of El Paso CGP Company, LLC (EPCGP), is submitting the enclosed 2014 Monitoring Well Installation Work Plan (Work Plan) for State Gas Com N#1 (Site). The enclosed document contains the proposed methodology for the assessment of subsurface soil conditions and subsequent groundwater monitoring well installations at the Site. The procedures outlined in this Work Plan meet or exceed the requirements established in the "Remediation Plan for Groundwater Encountered during Pit Closure Activities" document approved by the New Mexico Oil Conservation Division (NMOCD) on November 30, 1995. The scope of work contained herein is scheduled for October 2014 and access from the State of New Mexico will be obtained prior to initiating field activities.

Please contact Mr. Joseph Wiley of EPCGP at (713) 420-3475 or me at (515) 253-0830 if you have any questions or comments concerning the enclosed Work Plan.

Sincerely,

Clint Oberbroeckling
Project Manager

/cwo:csh:hls

cc: Joseph Wiley, EPCGP (via electronic mail)
Brandon Powell, NMOCD Aztec, New Mexico



El Paso
CGP Company, L.L.C.
a Kinder Morgan company

**El Paso CGP Company, LLC
1001 Louisiana
Houston, Texas 77002**

**STATE GAS COM N#1
NMOCD Order Number: 3RP-239-0
2014 MONITORING WELL INSTALLATION WORK PLAN
SAN JUAN COUNTY, NEW MEXICO**

August 2014

Prepared by:

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TABLE OF CONTENTS

	PAGE
SECTION 1 INTRODUCTION.....	1
SECTION 2 PROPOSED NEW MONITORING WELLS	2
SECTION 3 FIELD METHODS	3
3.1 Soil Boring	3
3.2 Monitoring Well Installation.....	4
3.3 Monitoring Well Abandonment	4
3.4 General Protocols.....	4
3.4.1 Health and Safety	5
3.4.2 Documentation Procedures	5
3.4.3 Boring Locations and Utility Identification.....	6
3.4.4 Equipment Decontamination	6
3.4.5 Investigation-Derived Waste.....	6
3.4.6 Field Equipment Calibration Procedures	6
SECTION 4 SCHEDULE	7

LIST OF FIGURES

Figure 1 – State Gas Com N#1, Proposed Well Location Map

SECTION 1

INTRODUCTION

This Monitoring Well Installation Work Plan (Work Plan) presents the scope of work to be completed to perform monitoring well installations at the State Gas Com N #1 remediation site (Site) located in the San Juan River Basin near Farmington, New Mexico. The new monitoring wells are intended to provide further delineation of petroleum hydrocarbon-impacted groundwater and more clearly define the groundwater potentiometric surface.

The purpose of this Work Plan is to provide the field methods and an implementation schedule for the monitoring well installations. Section 2 describes the Site and the purpose behind the proposed well locations. Section 3 provides details on the field methods to be used during the monitoring well installations. Section 4 presents the anticipated implementation schedule.

SECTION 2

PROPOSED NEW MONITORING WELLS

The new monitoring wells are intended to provide further delineation of groundwater impacts at the Site and to establish the groundwater gradient in an effort to move the Site toward closure. Details of the proposed monitoring wells are provided below.

There are currently nine monitoring wells at the Site. Ten additional monitoring wells will be installed at the Site and are intended not only for the collection of groundwater samples, but will also further define groundwater gradients. The monitoring wells will be installed around the known extent of the groundwater plume in order to better delineate impacts from the former El Paso CGP Company, LLC (EPCGP) pit. The Site is located on State of New Mexico land. Property access approval will be obtained from the current lease operator, XTO Energy and the State of New Mexico. The proposed well locations are shown on Figure 1.

SECTION 3

FIELD METHODS

The following subsections describe field procedures to be followed during monitoring well installation.

3.1 SOIL BORING

A truck-mounted, hollow-stem auger drill rig will be mobilized to the Site after access has been obtained and underground utility and line locates have been completed. The drill rig will be used to advance soil borings to an anticipated depth of 85 feet below ground surface (bgs). During soil boring activities, soil screening will be conducted from the ground surface (or from the base of air knife or HydroVac excavated pothole) to the base of the borehole using direct-push continuous sampling or dry coring methods. In the event that auger refusal occurs before the maximum depth has been reached, the drill rig will convert to air rotary and a rotary bit will be used to obtain the maximum depth. Other than lithologic descriptions, soil screening will not be conducted on intervals drilled via air rotary.

Borehole logging will include United Soil Classification System (USCS) soil descriptions for the entire depth of the boring. In addition to the USCS descriptions, the field geologist will provide a detailed description of each discrete lithologic unit.

Soil samples will be collected based on 2 or 2.5-foot intervals, depending on the length of the sampling barrel used by the driller. After the sample core is collected, the field personnel will field screen using a pre-calibrated photoionization detector (PID) and record the readings. The field screen will be conducted by notching the soil in the core with a hand trowel or other pre-cleaned hand tool, and briefly placing the PID in the notch to measure impacts. The screening, in addition to visual and olfactory observations (e.g., observing apparent hydrocarbon staining), will aid in identifying the portion of the sample interval to retain for potential laboratory analysis (i.e., the portion with the greatest suspected hydrocarbon impact).

Based on the field screening, a soil sample will be collected from the core representing the greatest suspected hydrocarbon impact. If the current core section being screened does not appear to be impacted to a level equal to or greater than a preceding core section, no sample will be collected. The sample retained for potential laboratory analysis will be placed in a laboratory-provided 4-ounce glass jar(s), sealed, labeled, and stored on ice. After the boring and soil screening are completed, the collected sample associated with the highest PID reading will be retained and shipped in an ice-filled cooler under standard chain-of-custody to TestAmerica Laboratories, Inc. in Corpus Christi, Texas. Samples not retained for analysis will be disposed of with the soil cuttings.

Samples will be analyzed per the guidance established by Attachment A to Order No. R-13506-D, NMAC Section 19.15.17.13, Table 1, for the presence of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (EPA) Method SW846 8021B; total petroleum hydrocarbons (TPH) by EPA Method 418.1, and chlorides by EPA Method 300.

3.2 MONITORING WELL INSTALLATION

Each monitoring well will be constructed of 2-inch-diameter, Schedule 40, .010-slot polyvinyl chloride (PVC) screen and 2-inch-diameter, Schedule 40 PVC riser casing. For each well, a locking, protective steel well vault will be installed from 3 feet above ground surface to 2 feet bgs within a concrete pad on the ground surface. Four concrete-filled steel bollards will be placed around the concrete pad to protect the well vault.

The well screen will be installed from 60 to 85 feet bgs, which is anticipated to intersect the groundwater surface and provide sufficient water column for sample collection. The riser casing will extend from the top of the screen to approximately 2.5 feet above the ground surface. The annular space adjacent to the well screen will be filled with 10-20 silica sand from the bottom of the borehole to 2 feet above the top of the screen. Three (3) feet of hydrated bentonite chips will be placed above the silica sand to prevent downward migration of surface water. Bentonite grout will be placed above the bentonite chips to 6 inches below the bottom of the well vault. Silica sand will be placed from 6 inches below the bottom of the well vault (approximately 2.5 feet bgs) to within approximately 1 foot of the ground surface, or to a field-determined depth based on concrete pad placement.

Based on the anticipated low yields of the groundwater formations, monitoring well development will be performed using a well swab and disposable bailer until sediment has been removed and visibly clear water is observed or the well runs dry. Purged groundwater and soil cuttings will be stored in labeled 55-gallon drums and staged on site.

After construction, ground surfaces and top-of-casing elevations will be surveyed by a licensed surveyor using State plane coordinates and the existing site benchmark.

3.3 MONITORING WELL ABANDONMENT

Monitoring wells MW-7 and MW-8 are damaged and will be abandoned. MW-7, MW-8, and soil boring SB-1 will be plugged and abandoned in accordance with the New Mexico Environment Department (NMED) Ground Water Quality Bureau Monitoring Well Construction and Abandonment Guidelines dated March 2011 as a guideline, however, the project is under the NMOCD rather than the NMED. Form WD-08, Well Plugging Plan of Operations, will be submitted to the State Engineer's office. Following completion of the work, Form WD-11, Plugging Record, will be submitted to the State Engineer's office.

3.4 GENERAL PROTOCOLS

This subsection presents a discussion of health and safety, documentation procedures, buried piping or utility identification, waste handling, and other procedures to be performed as part of the investigation.

3.4.1 Health and Safety

A Site-Specific Health and Safety Plan (HASP) has been prepared for groundwater monitoring, operations, and maintenance, and drilling activities. The HASP includes guidance on the personal protective equipment (PPE) necessary for field activities, identified hazards associated with the field activities, and directions to the nearest medical facility. Flame-resistant clothing and level D protective equipment will be worn, as required. A copy of the HASP will be on site at all times while work is being performed. The HASP will apply to EPCGP employees, MWH's subcontractors, and visitors at the Site. Typically, subcontractors will operate under their own HASP, which will be prior to the start of the project.

3.4.2 Documentation Procedures

Data generated during the field investigation will be recorded on boring and well construction logs. The boring logs will include USCS descriptions, detailed lithologic descriptions, PID readings, length/percent recovery, sample collection intervals, and drilling method employed. The well construction logs will include screen, sand pack, wellbore seal, and surface completion details.

The field geologist will maintain a field log book. At the end of each day of field activities, the notes will be dated and signed by the field geologist.

The daily field log book will contain information such as:

- Date
- Name, location, and objective of the work activities
- Weather conditions
- Equipment calibration information
- Personnel and visitors on site
- Photograph numbers and descriptions (if applicable)
- Description of decontamination activities (if applicable)
- Any deviations from the Work Plan
- Other relevant observations as the fieldwork progresses
- Sample collection intervals and times
- Problems and corrective actions

3.4.3 Boring Locations and Utility Identification

Prior to any drilling or excavation, a call will be made to the New Mexico 811 “One Call” to verify utility clearance and to notify the operator. “One Call” will be notified that the boring locations are staked or flagged and that the entire well pad and areas surrounding the borings should be marked. The clearance call must be made at least two working days prior to drilling, and the site work must be completed within five days of the clearance. In addition, access will be coordinated with the current operator of the Site prior to any drilling activities to allow location of any underground infrastructure and to comply with operator safety guidance. HydroVac equipment will be used to clear select monitoring well locations to a depth of 8 to 10 feet bgs.

3.4.4 Equipment Decontamination

Prior to drilling, down-hole equipment will be steam cleaned or scrubbed with a non-phosphate detergent (e.g., Alconox®). Where feasible, equipment to be decontaminated will be disassembled to permit adequate cleaning of the internal portions of the equipment. Equipment to be steam cleaned will be placed into a self-contained decontamination trailer with metal cleaning racks that support the equipment for cleaning, rinsing, and air drying. Heavy waterproof gloves will be worn during steam cleaning to reduce the potential for cross-contamination between samples and to protect against skin contact with steam and potential contaminants.

3.4.5 Investigation-Derived Waste

Soil cuttings generated from drilling activities will be containerized in labeled 55-gallon drums and staged on site for removal by a contracted transport and disposal company.

Decontamination and purge water generated through the development of new monitoring wells will be containerized in labeled 55-gallon drums and staged on site for removal with the soil cuttings.

Disposable equipment and PPE waste generated during field activities, including scrap PVC, concrete, steel, rope, disposable bailers, nitrile gloves, and Tyvek® suits, will be disposed in standard industrial dumpsters. In the event that the waste is grossly contaminated, it will be containerized for proper disposal along with the other investigation-derived waste.

3.4.6 Field Equipment Calibration Procedures

In regards to organic vapor meters, field personnel will use a 10.6 eV PID for screening soil samples during advancement of soil borings. This instrument will be calibrated prior to use according to the manufacturer’s specifications. The instrument calibration will be checked at the beginning of each day of use and any time meter drift is suspected. All calibration information will be recorded in the field log book.

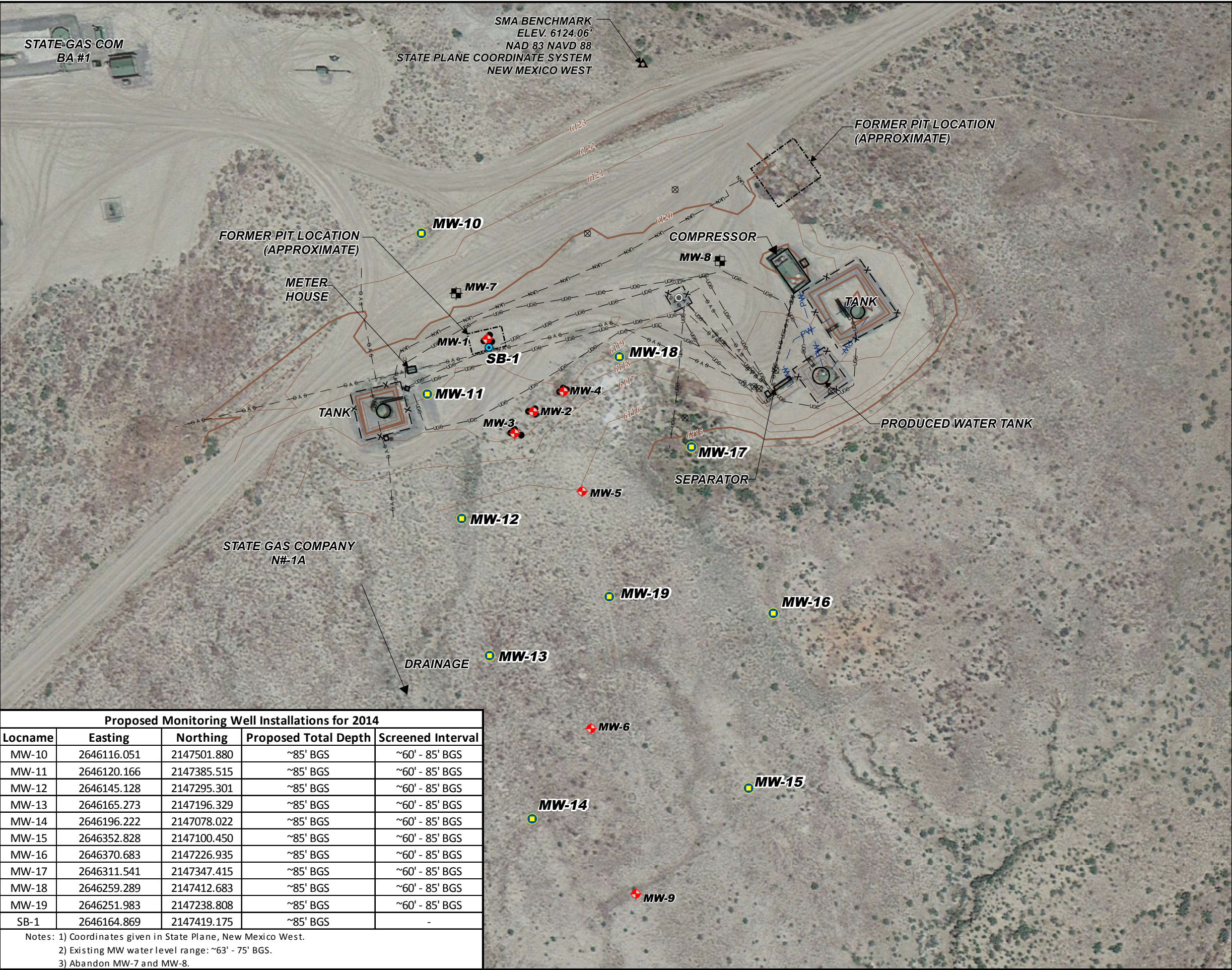
SECTION 4

SCHEDULE

It is anticipated that monitoring well installation activities will commence following completion of site access agreements with the current lease operator and the State of New Mexico. Utility locates and property access agreements must be verified and/or granted prior to well installations. Soil and groundwater analytical results and recommendations from the field activities will be provided in the 2014 Annual Report, anticipated to be submitted in January 2015.

The new monitoring wells will be prepared for groundwater sample collection. Assuming free-phase petroleum hydrocarbons are not encountered; following development, HydraSleeve[™] no-purge groundwater samplers and tethers will be placed in the new wells in preparation for the initial sampling event, scheduled to occur during the first semiannual gauging event following monitoring well installation. This event is anticipated to occur in October/November 2014.

FIGURE

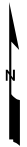


LEGEND:

- 6120 APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- X FENCE
- GA S NATURAL GAS LINE
- PW PRODUCED WATER LINE
- UKN UNKNOWN LINE
- UGB UNDERGROUND CABLE
- MONITORING WELL
- DAMAGED MONITORING WELL
- RIG ANCHOR
- SMA BENCHMARK
- PROPOSED GROUNDWATER MONITORING WELL LOCATIONS
- PROPOSED SOIL BORING LOCATION

Proposed Monitoring Well Installations for 2014				
Locname	Easting	Northing	Proposed Total Depth	Screened Interval
MW-10	2646116.051	2147501.880	~85' BGS	~60' - 85' BGS
MW-11	2646120.166	2147385.515	~85' BGS	~60' - 85' BGS
MW-12	2646145.128	2147295.301	~85' BGS	~60' - 85' BGS
MW-13	2646165.273	2147196.329	~85' BGS	~60' - 85' BGS
MW-14	2646196.222	2147078.022	~85' BGS	~60' - 85' BGS
MW-15	2646352.828	2147100.450	~85' BGS	~60' - 85' BGS
MW-16	2646370.683	2147226.935	~85' BGS	~60' - 85' BGS
MW-17	2646311.541	2147347.415	~85' BGS	~60' - 85' BGS
MW-18	2646259.289	2147412.683	~85' BGS	~60' - 85' BGS
MW-19	2646251.983	2147238.808	~85' BGS	~60' - 85' BGS
SB-1	2646164.869	2147419.175	~85' BGS	-

Notes: 1) Coordinates given in State Plane, New Mexico West.
2) Existing MW water level range: ~63' - 75' BGS.
3) Abandon MW-7 and MW-8.



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	8/28/2014	CCL	CCL	DAW

TITLE: **STATE GAS COM N#1
PROPOSED GROUNDWATER
MONITORING WELL LOCATIONS**

PROJECT: **SAN JUAN RIVER BASIN
MONITORING AND REMEDIATION
SAN JUAN COUNTY, NEW MEXICO**



Figure No.:
1