ENTERED

TRANSWESTERN PIPELINE COMPANY
An ENERGY TRANSFER Company

May 26, 2017

Mr. Dave Cobrain
New Mexico Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313

RE: Submittal of Revised Operation and Maintenance and Monitoring (O&MM) Plan For the Former Surface Impoundments Annual Report
Roswell Compressor Station No. 9
Transwestern Pipeline Company, LLC
Roswell, Chavez County, New Mexico
NMOCD Case #GW-052/EPA ID NO. NMD986676955

Dear Mr. Cobrain:

In response to the "Notice of Revisions to Operation and Maintenance (O&M) and Monitoring Plan" correspondence from the New Mexico Environmental Department (NMED) dated April 18, 2017; and in general accordance with *Section IV.A – Remediation System and Groundwater Monitoring* of the March 2013 *Stipulated Final Order* for Transwestern Pipeline Company, LLC's (Transwestern) Roswell Compressor Station No. 9 (Site), attached for your review is the **Revised** *Operation and Maintenance and Monitoring (O&MM) Plan* for the site. This plan has revised to allow flexibility for recovery system optimization and update the *Sampling and Analysis Plan* (SAP).

If you have any questions or comments regarding this submission, please do not hesitate to contact me at 210.870.2725 (office) or JD Haines of EarthCon Consultants, Inc. at (317) 450-6126.

Sincerely,

Stacy Boultinghouse, PG(TX4889/LA73)
Environmental Manager
Transwestern Pipeline Company, LLC
Stacy.Boultinghouse@energytransfer.com

Attachment: Operation and Maintenance and Monitoring Plan

ec: *Electronic Submissions*
Kristen Van Horn, Hazardous Waste Bureau, New Mexico Environment Department Brad Billings, Environmental Bureau, New Mexico Oil Conservation Division
New Mexico Oil Conservation Division (Artesia)
New Mexico State Land Office
Laurie King, US Environmental Protection Agency - Region 6
Larry Campbell - Transwestern Pipeline Company (Roswell, NM)
Rachel Andrews - EarthCon Consultants, Inc.
JD Haines – EarthCon Consultants, Inc.

OPERATION AND MAINTENANCE AND MONITORING (O&MM) PLAN

TRANSWESTERN ROSWELL COMPRESSOR STATION NO. 9
ROSWELL, CHAVEZ COUNTY, NEW MEXICO
NMED 1656; NMOCD Case #GW-052
EPA ID NO. NMD986676955

PREPARED FOR:

TRANSWESTERN PIPELINE COMPANY, LLC
800 EAST SONTERA BLVD., SUITE 400
SAN ANTONIO, TX 78258

PREPARED BY:

EARTHCON CONSULTANTS, INC.
1880 WEST OAK PARKWAY, SUITE 106
MARIETTA, GA 30066
(770) 973-2100

EarthCon Project No. 02.20120037.00

SEPTEMBER 2015
(Revised May 2017)

CONTENTS

FIGURES

ATTACHMENT

1.0 INTRODUCTION

This *Revised Operating and Maintenance and Monitoring* (O&MM) *Plan* was prepared by EarthCon Consultants, Inc. (EarthCon) on behalf of Transwestern Pipeline Company, LLC (Transwestern) for the former Surface Impoundment project at the Transwestern Compressor Station No. 9 (also known as the Roswell Compressor Station) property (the "Site") located at 6381 North Main Street in Roswell, New Mexico (**Figure 1**, **Site Location Map**). On March 13, 2013, the New Mexico Environment Department (NMED) issued a Stipulated Order (SO) that governs on-going environmental response activities associated with the Site. This Revised O&MM Plan was developed in general accordance with Section IV of the SO and the Site's Stage 2 Abatement Plan (AP), dated December 3, 2015 and approved by New Mexico Oil and Conservation District (OCD) on March 1, 2016. This O&MM Plan provides information about the operation, maintenance, and monitoring of the Site's multiphase extraction (MPE) remediation system.

2.0 SAFETY

Prior to operating the system, technical operational and maintenance documents supplied by the original equipment manufacturer (OEM) for each equipment component (i.e. blower, thermal oxidizer, pumps, and air compressor) should be reviewed for safe and proper operation. The emergency shut-off power switch should be clearly marked and identified at the facility to implement emergency procedures. A *Health and Safety Plan* (HASP), including an emergency response plan, should be reviewed and appropriate personal protective equipment (PPE) should be donned and/or acquired prior to performing system operation or maintenance. Only trained personnel should be operating and monitoring the MPE system.

3.0 OPERATION

The MPE remediation system consists of soil vapor extraction (SVE) and vapor treatment, and groundwater/phase-separated hydrocarbons (PSH) recovery and treatment. Operating components of the MPE remediation system (i.e. pneumatic pumps) may be manipulated periodically to optimize recovery system efforts, as described further in Section 3.1 of this document.

The layout of the remediation system is presented in **Figure 2** and the equipment compound detail is presented in **Figure 3.** The process and instrumentation diagram of the SVE system and

groundwater extraction and treatment (GET) system is presented in **Figure 4** and **Figure 5**, respectively.

3.1 Overall System Operation

The MPE remediation system operation will be optimized in a manner to maximize contaminant removal while minimizing the length of the remediation process. Given that remediation at the Site has been ongoing for over 10 years with measurable thickness of PSH remaining, operations need to be changed to evaluate the effect of differing system operating parameters on mass removal, PSH thickness and radius of influence. During the optimization process, data will be collected that assist in determining what changes may be made to system operations that could increase both the effectiveness and decrease the timeframe for the remediation. The details, data and results of system optimization will be reported in the Annual Report for the Site. Additional details on the system and groundwater monitoring plans are summarized in Sections 4.1 and 4.2 of this document.

3.2 Soil Vapor Extraction and Treatment System

The SVE and treatment system can handle a total air flowrate of approximately 400 standard cubic feet per minute (scfm) with vapor concentrations ranging between 50% Lower Explosive Limits (LEL) and 60% LEL in thermal mode. Soil vapor is extracted from SVE-only wells and MPE wells using two vacuum blowers and routed to two Baker Furnace 200 thermal oxidizer units for treatment prior to being discharged to the atmosphere. A vacuum is applied to each well by two positive-displacement (PD) rotary lobe blowers located on the thermal oxidizers for extracting soil vapor. Extracted vapors from the wells are connected by a common manifold piping system and enter two 55-gallons air water separator drums (also known as knock-out tanks) to separate condensate entrained in the vapor stream. Separated condensate is transferred by pneumatic diaphragm pumps operated on a time sequence and processed through the groundwater treatment system. Separated vapors continue through the PD vacuum blowers and into the thermal oxidizers for treatment. Treated vapors are discharged to the atmosphere.

The Baker Furnace 200 thermal oxidizer is a skid mounted system used for treating vapor-phase volatile organic compounds (VOCs) (destruction efficiency of 99%) of SVE systems. Each thermal oxidizer is capable of processing an air flow rate of 200 scfm and treating VOC concentrations with a LEL ranging between 50% and 60% in thermal mode. The thermal oxidizer is equipped with a 10-horse power (hp) PD blower capable of 200 cfm at 4 inches of mercury ("Hg), a 12 gallon KO

pot with drain ports, air filters, a chart recorder, interlocking controllers and air flow and pressure gauges. Natural gas combined with the influent VOC vapor stream extracted from wells is used to supply fuel to the thermal oxidizer for achieving operating temperature of greater than 1,450 degree Fahrenheit (°F) in the combustion chamber. The thermal oxidizer is capable of operating in catalytic mode to reduce supplemental fuel usage if equipped with catalytic blocks and concentrations are less than 20% LEL.

3.3 Groundwater Extraction and Treatment System

The GET system can handle a water flow rate of 20 gallons per minute (gpm). Groundwater and PSH are recovered by operating pneumatic pumps installed in MPE wells. The MPE wells are connected into four groups, which are labeled as Circuit A, Circuit B, Circuit C, and Circuit D. At each circuit, the recovered fluids are conveyed from pneumatic pumps through a common manifold and deposited in a 200-gallon holding tank. A 15-hp rotary screw air compressor rated for 67 cfm at 100 pounds per square inch (psi) is used to supply compressed air to the pneumatic pumps and the knock-out tank diaphragm pump for the SVE system. Once fluids reach a certain level in the holding tanks, ¾ hp centrifugal transfer pumps deliver the recovered fluids to a 90-barrel (approximately 2,800 gallons) aboveground storage tank that serves as surge tank and separation unit of PSH and groundwater. Separated PSH in the surge tank is removed manually and sent off-site to a permitted facility for recycling. Separated groundwater is transferred by gravity from the surge tank to a 325 gallon equalization tank and a 100 gallon holding tank that are connected in series. From the holding tank, a 1-hp centrifugal pump is used to process separated groundwater to the air stripper. The air stripper is equipped with a 3-hp regenerative blower to move air within the 7-tray stripper tower for volatilizing hydrocarbons in groundwater. Emissions from the air stripper are treated by two 400 pound vapor-phase granular activated carbon (GAC) vessels prior to discharge to the atmosphere. Once treated, groundwater is pumped by a 1-hp transfer pump through a 10 micron bag filter and two 400 pound liquid-phase GAC vessels and stored in a 1,000 gallon aboveground irrigation water tank. After reaching a certain level in the tank, the treated water is transferred by a 1-hp centrifugal pump through a 10 micron bag filter and disperses the water through an irrigation system consisting of above ground spray nozzles.

The groundwater extraction piping manifolds, 200-gallon holding tanks, transfer pumps, and the air compressor are housed in an enclosed building. The surge tank, air stripper, bag filters, carbon

vessels, and irrigation tank are located outside without an enclosure. During cold weather conditions, the system is deactivated to prevent damage caused by freezing water.

3.4 Automated Logic Control Description

The SVE and treatment system operates independent of the GET system. Each system consists of logic controllers for automatic operation and deactivation. The following paragraphs provide a description of the logic control schematic of each system.

Thermal Oxidizer and Vacuum Blowers:

The thermal oxidizer and vacuum extraction blower are integrated as one operating unit. At initial startup, a 60 second purge (five air changes) cycle of the combustion chamber is performed with ambient air using the combustion blower prior to ignition of the pilot. According to the OEM manual, the oxidizer has a 15 second ignition trial which lights the pilot. If the pilot does not light in 15 seconds, the supplemental fuel line is closed to reduce the potential for an explosion. The main gas valve in the supplemental fuel train will not open until the pilot is lit. The thermal oxidizer must be reset and the initial startup procedure repeat until activation. The process line of the thermal oxidizer consists of actuated three-way valves that are used to supply clean air and to restrict VOC vapors provided by the vacuum extraction blower. The VOC vapor line is closed from entering the thermal oxidizer by the three-way valve until the set operating temperature (1,450° F) is reached. In addition, two actuated valves are linked to oxygen and LEL sensors to prevent levels from exceeding set points and to add dilution air to the process stream to maintain below the set points. If the LEL is exceeded, the valve is closed and temporarily shuts down the combustion burner until the LEL is below the set point. If the combustion or vacuum extraction blower fails to operate, the control system will close the supplemental fuel line and close the VOC vapor line to the oxidizer. The thermal oxidizer is equipped with a high temperature limit controller. If a high temperature condition exists, the thermal oxidizer will close the supplemental fuel line and the VOC vapor line. The vacuum blower is equipped with a KO pot. The KO pot consists of level switches to monitor liquids in the KO pot. If liquid levels reach a certain level in the KO pot, the thermal oxidizer and vacuum blower will be deactivated. The following table includes a list of relay control sequences for automatic operation and deactivation of the SVE system:

Table 3.3-1: Relay Control Systems for the SVE System			
Component	**Devices**	**Condition**	**Response**
12-gal KO POT	Liquid level switches	High-high water level	Deactivate SVE blower and Thermal Oxidizer
Thermal Oxidizer	Temperature Transducer	High temperature	Deactivate SVE blower and Thermal Oxidizer
			Closes Supply Gas valve
			Open Dilution Valve
Thermal Oxidizer	LEL Transducer	High LEL concentration	Deactivate SVE blower and Thermal Oxidizer
			Closes Supply Gas valve
			Open Dilution Valve
Combustion Blower	Actuated Valve	Startup and Reset	Activate Combustion Blower

Groundwater Extraction and Treatment System:

The GET system is integrated using electrical relays, actuated valves, pressure sensors, and levels switches. The following table includes a list of relay control sequences for automatic operation and deactivation of the GET system:

Table 3.3-2: Relay Control Systems for the Groundwater Extraction System			
Component	**Devices**	**Condition**	**Response**
200-gallon Holding Tanks	Liquid level switches	High-high water level	Close air supply line by pressure switch valve for Circuit
		High water level	Activate transfer pump for Circuit
		Low water level	Deactivate transfer pump for Circuit
90-Barrel Surge Tank	Liquid level switches	High-high water level	Closes air supply line actuated valves for all Circuits
100-gallon Transfer Tank	Liquid level switches	High water level	Activate transfer pump for tank
		Low water level	Deactivate transfer pump for tank
Air Stripper	Liquid level switches Blower pressure switch	High-high water level	Close pneumatic actuated valve of surge tank effluent line
		High water level	Activate transfer pump for air stripper
		Low water level	Deactivate transfer pump for air stripper
		Low air pressure	Close pneumatic actuated valve of surge tank effluent line
Irrigation Tank	Liquid level switches	High water level	Activate transfer pump for irrigation tank

Table 3.3-2: Relay Control Systems for the Groundwater Extraction System			
Component	**Devices**	**Condition**	**Response**
		Low water level	Deactivate transfer pump for irrigation tank
Air Compressor	Temperature switch	High temperature	Deactivate air compressor

STARTUP SEQUENCE

1. Confirm all switches are in "off" position
2. Close valves for SVE wells
3. Energize main breaker switch
4. Activate Thermal Oxidizer/SVE Blower– East
5. Activate Thermal Oxidizer/SVE Blower – West
6. Open valves for SVE wells
7. Activate Air Stripper
8. Activate Transfer Pumps
9. Activate Air Compressor
10. Perform operation monitoring

SHUTDOWN SEQUENCE

1. Perform operation monitoring.
2. Deactivate Air Compressor
3. Deactivate Transfer Pumps
4. Deactivate Air Compressor
5. Deactivate Thermal Oxidizer/SVE Blower – East
6. Deactivate Thermal Oxidizer/SVE Blower – West
7. Close valves for SVE wells.
8. De-energize main breaker switch

MALFUNCTION SEQUENCE

1. Identify alarm condition
2. Resolve alarm condition
3. Reset button to clear alarm condition
4. Reactivate system following Start-up Sequence
5. Document alarm condition and resolution.

4.0 MONITORING

4.1 System Monitoring

Routine monitoring of the system will be performed to maintain the operation of the system. In conjunction with system operations, the monitoring schedule may be adjusted based on system performance over time. The equipment, meters, gauges, and/or instruments used to collect the

monitoring data shall be in good condition and calibrated as needed. For identification purposes, the thermal oxidizers, blowers, and knock-out tanks should be referred to as "East" and "West". Vapor extraction manifolds will be identified by each "Circuit". The system monitoring activities will be documented on the field forms provided in **Attachment A**. The following tables summarize the monitoring activities and frequency for the SVE and GET systems, respectively:

Table 4.1-1: SVE System Monitoring Schedule

Item	Description	Freq.
1.0	Record operational status of each system upon arrival (On, Off, Alarm Condition)	Daily
1.1	Record operational status of each system upon departure (On, Off)	Daily
1.2	Record the hour meter reading of each thermal oxidizer (hrs).	Weekly
1.3	Measure the vacuum of each PD blower ("H_2O).	Weekly
1.4	Measure the air flow rate of each PD blower (feet per minute [fpm]).	Weekly
1.5	Record the temperature of each PD blower (°F).	Weekly
1.6	Measure vapor concentration using PID of PD Blower (ppmV)	Weekly
1.7	Record the air flow rate of each thermal oxidizer (scfm)	Weekly
1.8	Record the temperature of each thermal oxidizer (°F).	Weekly
1.9	Record the temperature high set point of each thermal oxidizer (°F).	Weekly
1.10	Record the %LEL reading for each thermal oxidizer (%LEL).	Weekly
1.11	Record the $\%O_2$ reading for each thermal oxidizer ($\%O_2$).	Weekly
1.12	Record the pressure of the natural gas supply line to the oxidizer (psig).	Weekly
1.13	Record the pressure of the main natural gas supply line (psig).	Weekly
1.14	Measure the vacuum of each 55-gallon KO drum ("H_2O).	Weekly
1.15	Record butterfly valve position for Circuit manifold (½, ¾, fully open).	Weekly
1.16	Measure the air flow rate of each manifold Circuit (fpm).	Weekly
1.17	Measure the vacuum of each manifold Circuit ("H_2O).	Weekly
1.18	Record the identification of operating vapor extraction wells	Quarterly
1.19	Measure the air flow rate of each operating well (fpm)	Quarterly
1.20	Measure the vacuum of each operating well ("H_2O).	Quarterly
1.21	Measure vapor concentration of each operating well (ppmV)	Quarterly
Equipment Inspections		
1.22	Inspect and record condition of air filters on the dilution valve.	Weekly
1.23	Inspect and record the condition of pressure gauges.	Weekly
1.24	Inspect and record the condition of temperature gauges.	Weekly
1.25	Inspect and record the condition of blower belts.	Weekly
1.26	Inspect and record air and water leaks.	Weekly

Table 4.1-1: SVE System Monitoring Schedule		
Item	**Description**	**Freq.**
1.27	Inspect and record condition of check valves.	Weekly
1.28	Drain condensate from KO pots.	Weekly
1.29	Perform routine maintenance as required by the OEM.	Per OEM
Sampling		
1.30	Collect influent air sample for VOC after PD blowers and submit to laboratory for analysis of Total VOC by EPA Method TO-15.	Quarterly
1.31	Leak Detection and Repair Monitoring (after 2 consecutive months of non-detect, monitoring can be done quarterly)	Quarterly

Table 4.1-2: Groundwater Extraction System Monitoring Schedule		
Item	**Description**	**Freq.**
2.0	Provide the operational status of system upon arrival (On, Off, Alarm Condition)	Daily
2.1	Provide the operational status of system upon departure (On, Off, Alarm Condition)	Daily
2.2	Record air stripper blower static pressure ("H_2O).	Weekly
2.3	Record air stripper blower air flow (cfm).	Weekly
2.4	Record the air stripper rotameter (gpm).	Weekly
2.5	Record vapor-phase carbon vessel pressure 1 ("H_2O).	Weekly
2.6	Record vapor-phase carbon vessel pressure 2 ("H_2O).	Weekly
2.7	Record vapor-phase carbon vessel temperature (°F).	Weekly
2.8	Record Water Meter Reading (gallons).	Weekly
2.9	Record air compressor sump tank presssure (psi)	Weekly
2.10	Record air compressor discharge presssure (psi)	Weekly
2.11	Record air compressor hour meter (hr)	Weekly
2.12	Measure PSH and water level in Surge Tank (feet)	Weekly
2.13	Measure vapor concentration prior to carbon vessel 1 (ppmV)	Bi-Monthly
2.14	Measure vapor concentration between carbon vessel 1 and 2 (ppmV)	Bi-Monthly
2.15	Measure vapor concentration after carbon vessel 2 (ppmV)	Bi-Monthly
2.16	Measure (bucket test) the water flow rate of each operating well (gpm)	Quarterly
2.17	Measure liquid level readings of each operating well (ft below top of casing)	Semi-Annual
Equipment Inspections		
2.18	Inspect and record the condition of air stripper rotameter.	Daily
2.19	Inspect and record condition of 200 gallon holding tanks (Circuit A, B, C, and D).	Daily
2.20	Inspect and record condition of 325 gallon equalization tank and 100 gallon holding tank.	Daily

Table 4.1-2: Groundwater Extraction System Monitoring Schedule		
Item	**Description**	**Freq.**
2.21	Inspect and record the condition of air flow, and pressure gauges.	Daily
2.22	Inspect and record the condition of bag filters.	Daily
2.23	Inspect and record the condition of water meter.	Daily
2.24	Inspect air compressor for air leaks.	Daily
2.25	Inspect and record air compressor oil level in site tube.	Daily
2.26	Inspect air compressor oil return line.	Daily
2.27	Drain air receiver and condensate from air compressor filter separator.	Daily
2.28	Inspect for water leaks.	Daily
2.29	Inspect bag filters and replace as needed.	Daily
2.30	Inspect sprinkler heads on the irrigation system.	Daily
2.31	Inspect pneumatic pumps.	As needed
Sampling		
2.32	Collect influent water sample prior to air stripper	Monthly
2.33	Collect effluent water sample after air stripper	Monthly
2.34	Collect effluent water sample after liquid-phase carbon vessels	Monthly

4.2 Groundwater Monitoring

Groundwater sampling will be conducted semi-annually in accordance with the SO and the Stage 2 AP to monitor system effectiveness and the extent of the plume. The groundwater monitoring network at the Site consists of 30 monitoring wells. Eighteen of these wells are included in the sampling and analysis plan (SAP), which lists the sampling frequency and laboratory analytical results for each monitoring well. The SAP is summarized in the following table:

Table 4.2-1: Groundwater Sampling and Analysis Plan		
Well ID	**1st Semiannual Event Analytical Parameters**	**2nd Semiannual Event Analytical Parameters**
MW-13	--	BTEX
MW-14	--	BTEX
MW-16	--	BTEX
MW-20	--	VOCs
MW-21	BTEX	BTEX
MW-22	VOCs	VOCs
MW-24D	--	BTEX
MW-26	--	VOCs

Table 4.2-1: Groundwater Sampling and Analysis Plan		
Well ID	**1st Semiannual Event Analytical Parameters**	**2nd Semiannual Event Analytical Parameters**
MW-27	BTEX	BTEX
MW-29	--	BTEX
MW-32	--	BTEX
MW-34	--	BTEX
MW-35	--	BTEX
MW-37	--	BTEX
MW-39	--	VOCs
MW-40	--	VOCs
MW-41	VOCs	VOCs
MW-42	VOCs	VOCs

Notes:
1. BTEX – benzene, toluene, ethylbenzene, xylenes
2. VOCs – volatile organic compounds
3. BTEX and VOCs will be analyzed by EPA method 8260

The remediation system shall be deactivated for 48 to 72 hours prior to the start of each sampling event. Depth to PSH, if present, and depth to groundwater will be measured in each groundwater monitoring well and MPE well using an optical sensor probe capable of distinguishing between PSH and groundwater prior to purging and sampling activities. Fluid measurements should be completed within 48-hours.

Prior to sampling, the monitoring wells will be purged and monitored for stabilization of water quality parameters, including pH, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), and temperature using a calibrated YSI 556 Meter, or equivalent. Purging will be considered complete when the measured parameters of the purge water stabilize to within 10 percent for three consecutive measurements. In addition to the samples collected from the monitoring wells, the following data quality control samples will be collected and analyzed for either BTEX or VOCs, as required: field duplicates, field blanks, equipment rinsate blanks. The groundwater monitoring data will be summarized in an annual monitoring report, which will be submitted to NMED by March 31 of the following year.

5.0 MAINTENANCE

Routine maintenance will be conducted while operating the system to minimize excessive wear and major failures of equipment components. Maintenance requirements for specific equipment components is provided in the technical operation and maintenance manuals provided by the OEM. Only trained personnel should be maintaining the system. General maintenance activities for the SVE system and GET system equipment components are provided in the following table:

Table 5-1: General Maintenance

Item	Description	Freq.
3.1	Grease bearings on vacuum blower	Monthly
3.2	Replace Oil	Every 6 mos.
3.3	Clean and/or replace KO pot air filter	Every 6 mos.
3.4	Clean and/or replace vacuum blower air filter	Every 6 mos.
3.5	Replace vacuum blower belts	Every 6 mos.
3.6	Replace bag filters	Weekly
3.7	Check air compressor belt tension	Weekly
3.8	Check air compressor inlet filter element	Weekly
3.9	Change air compressor filter	Every 6 mos.
3.10	Change air compressor lubricant filter	Every 6 mos.
3.11	Check and tighten fittings	Weekly
3.12	Clean check valves	Every 6 mos.
3.13	Clean air stripper trays	Every 6 mos.
3.14	Clean air stripper rotameter	Monthly

FIGURES

REPORT OF 2016 GROUNDWATER REMEDIATION ACTIVITIES
TRANSWESTERN PIPELINE COMPANY, LLC
TRANSWESTERN COMPRESSOR STATION No. 9
(ROSWELL COMPRESSOR STATION)
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20120037

EARTHCON®

EarthCon Consultants, Inc.
1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

SITE LOCATION MAP

DRAWN:	CHECKED:	DATE:	FIGURE:
SNW	JDH	2/13/2017	1

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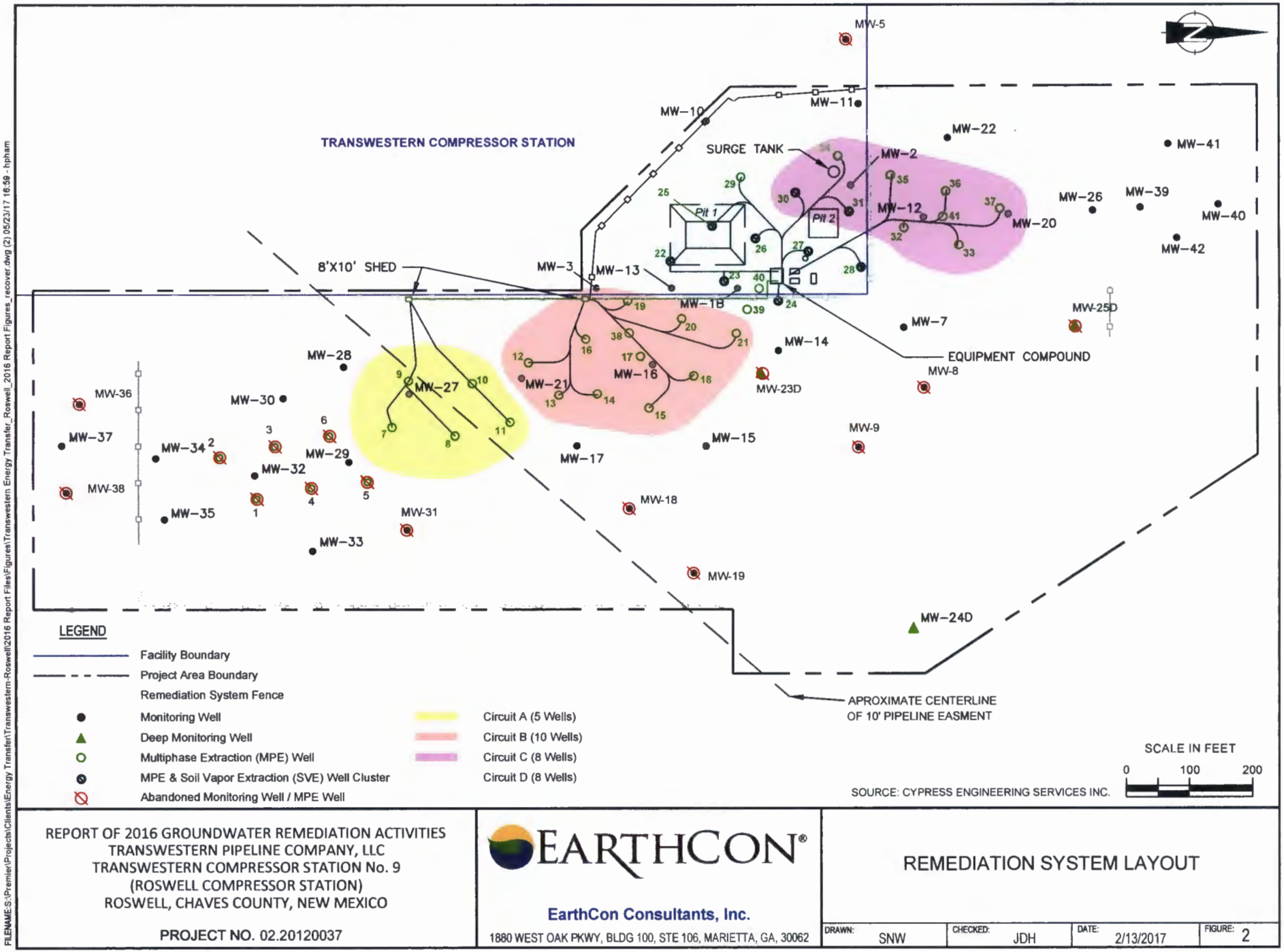

REPORT OF 2016 GROUNDWATER REMEDIATION ACTIVITIES
TRANSWESTERN PIPELINE COMPANY, LLC
TRANSWESTERN COMPRESSOR STATION No. 9
(ROSWELL COMPRESSOR STATION)
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20120037

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EarthCon Consultants, Inc.

1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

REMEDIATION SYSTEM LAYOUT

DRAWN:	CHECKED:	DATE:	FIGURE:
SNW	JDH	2/13/2017	2

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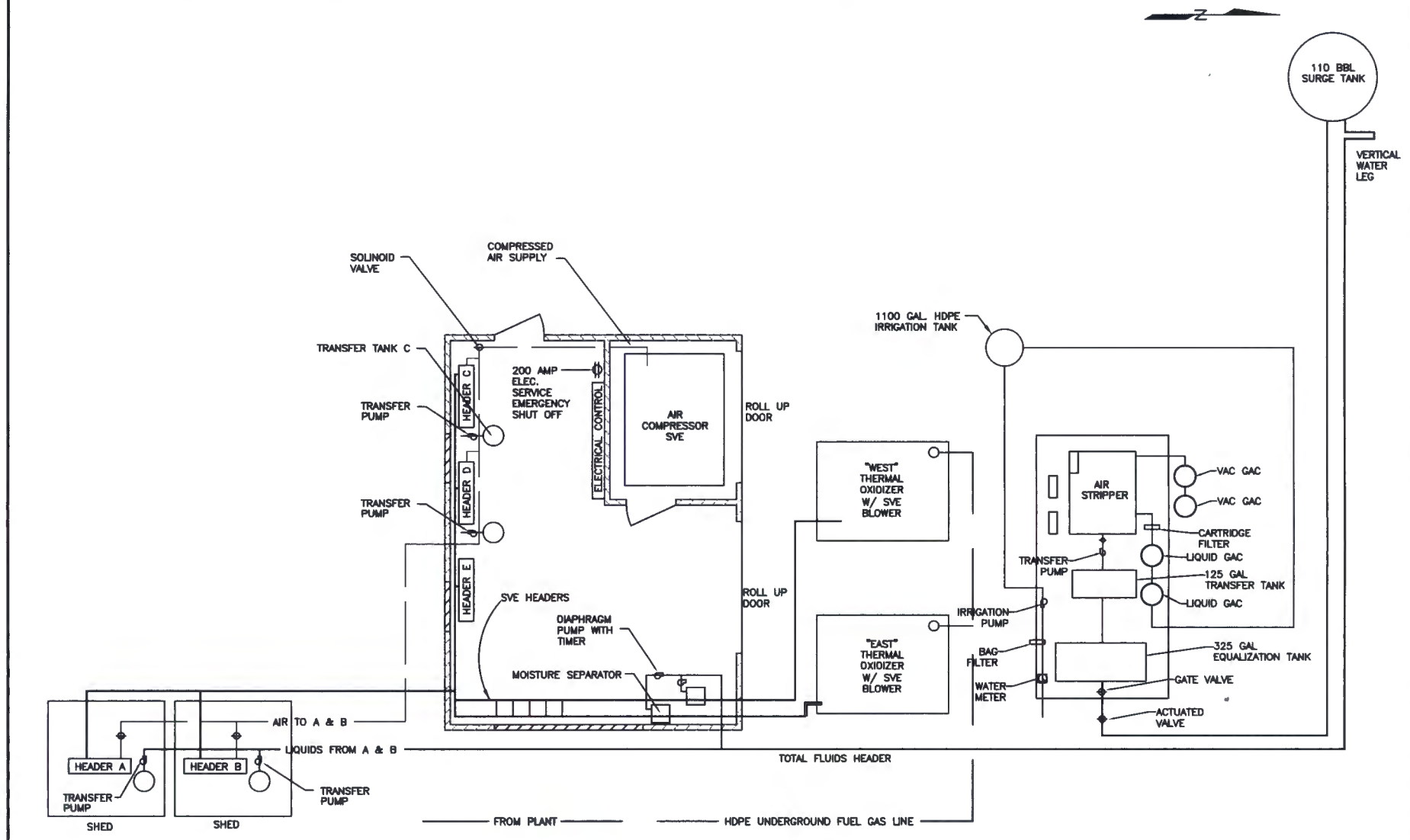

(NOT TO SCALE)

TRANSWESTERN PIPELINE COMPANY□LLC

ROSWELL COMPRESSOR STATION

ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20120037.00

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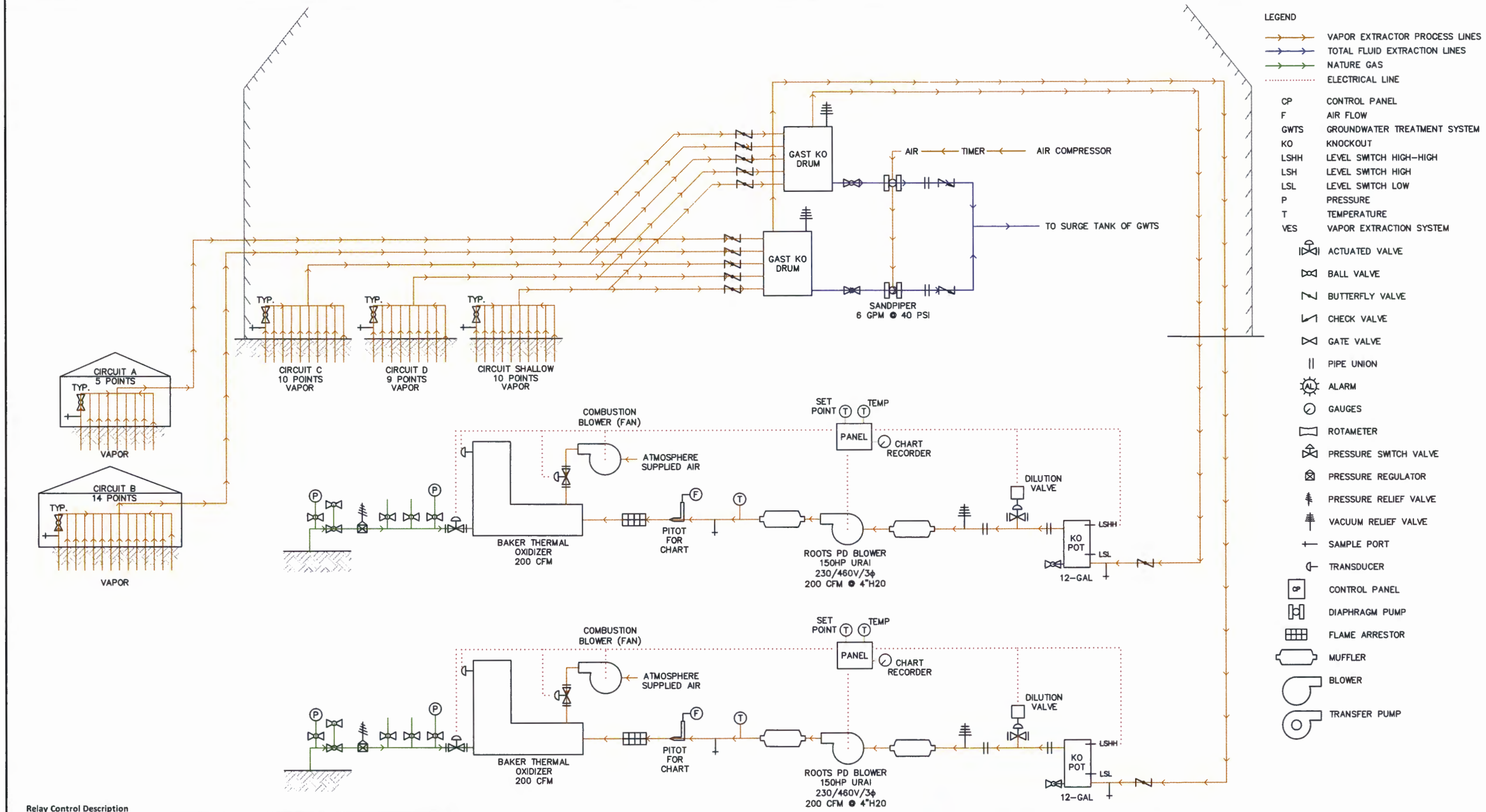
1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

E□UIPMENT COMPOUND DETAIL

DRAWN	CHECKED	DATE	FIGURE
SSW	SD	9/25/2015	3

FILENAME: system layout.dwg



Relay Control Description

Component	Devices	Condition	Response
12-gal KO POT	Liquid level switches	High-high water level	Deactivate SVE blower and Thermal Oxidizer
Thermal Oxidizer	Temperature Transducer	High temperature	Deactivate SVE blower and Thermal Oxidizer
			Closes Supply Gas valve
			Open Dilution Valve
Thermal Oxidizer	LEL Transducer	High LEL concentration	Deactivate SVE blower and Thermal Oxidizer
			Closes Supply Gas valve
			Open Dilution Valve
Combustion Blower	Actuated Valve	Startup and Reset	Activate Combustion Blower

TRANSWESTERN PIPELINE COMPANY LLC

ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20120037.00

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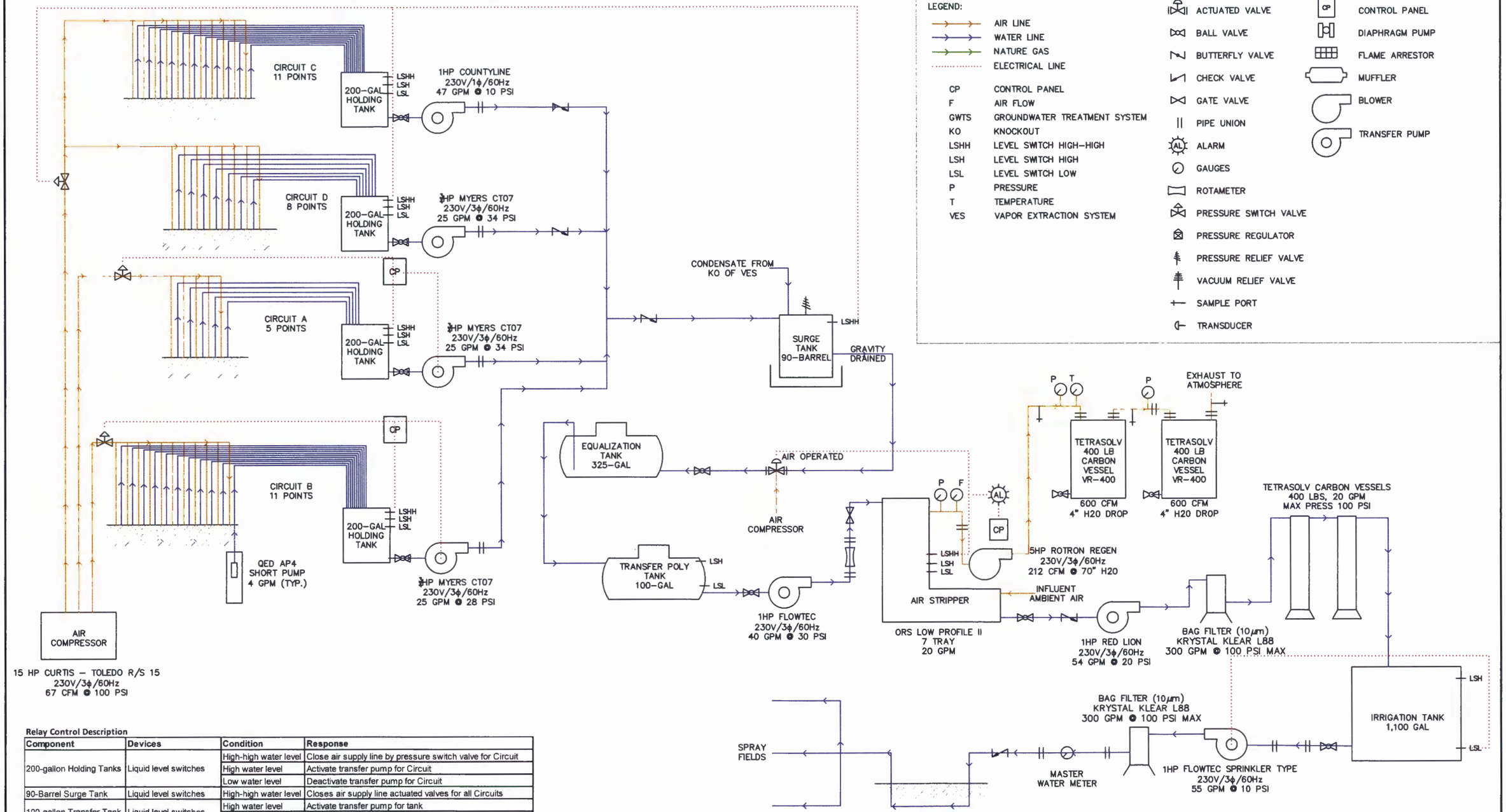
EarthCon Consultants, Inc.

1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

PROCESS AND INSTRUMENTATION DIAGRAM FOR SOIL VAPOR EXTRACTION AND TREATMENT SYSTEM

DRAWN:	CHECKED:	DATE:	FIGURE:
SSW	SD	9/25/15	4



Relay Control Description

Component	Devices	Condition	Response
200-gallon Holding Tanks	Liquid level switches	High-high water level	Close air supply line by pressure switch valve for Circuit
		High water level	Activate transfer pump for Circuit
		Low water level	Deactivate transfer pump for Circuit
90-Barrel Surge Tank	Liquid level switches	High-high water level	Closes air supply line actuated valves for all Circuits
100-gallon Transfer Tank	Liquid level switches	High water level	Activate transfer pump for tank
		Low water level	Deactivate transfer pump for tank
Air Stripper	Liquid level switches	High-high water level	Close pneumatic actuated valve of surge tank effluent line
		High water level	Activate transfer pump for air stripper
		Low water level	Deactivate transfer pump for air stripper
	Blower pressure switch	Low air pressure	Close pneumatic actuated valve of surge tank effluent line
Irrigation Tank	Liquid level switches	High water level	Activate transfer pump for irrigation tank
		Low water level	Deactivate transfer pump for irrigation tank
Air Compressor	Temperature switch	High temperature	Deactivate air compressor

TRANSWESTERN PIPELINE COMPANY LLC

ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20120037.00

EARTHCON®

EarthCon Consultants, Inc.

1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

PROCESS AND INSTRUMENTATION DIAGRAM FOR GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

DRAWN:	CHECKED:	DATE:	FIGURE:
SSW	SD	9/25/15	5

FILENAME: p&ids.dwg

ATTACHMENT A

ROSWELL COMPRESSOR STATION
SVE SYSTEM INSPECTION REPORT

Date / Time / Inspector	Baker Furnace	Total Hours of Operation	Charts Changed (Y/N)	Set Point	Oxidizer Temp. (F)	Vapor Flow Rate (CFM)	Vacuum @ Inlet (in. H2O)	Water in KO Recovery Tank? (Volume)	SVE CIRCUIT OPEN	Water in SVE Cleanouts? (volume removed)
	EAST UNIT								Circuit A %	
									Circuit B %	
	WEST UNIT								Circuit C %	
									Circuit D %	Shallow %
Comments/ Observations									List wells turned off:	
	EAST UNIT								Circuit A %	
									Circuit B %	
	WEST UNIT								Circuit C %	
									Circuit D %	Shallow %
Comments/ Observations									List wells turned off:	
	EAST UNIT								Circuit A %	
									Circuit B %	
	WEST UNIT								Circuit C %	
									Circuit D %	Shallow %
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									Circuit D %	Shallow %
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Comments/ Observations									List wells turned off:	
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									Circuit B %	
	WEST UNIT								Circuit C %	
									Circuit D %	Shallow %
Comments/ Observations									List wells turned off:	

ROSWELL COMPRESSOR STATION
IRRIGATION SYSTEM DAILY / WEEKLY MAINTENANCE LOG

DAILY

Date / Time / Inspector	Water Pump Reading (GPM)	Are all System Components Operating?	Static Pressure (~ 0.20 - 0.35 inches of H2O)	Air Flow (~ 200 - 220 CFM)	Spills / Leaks?

WEEKLY

	Liquids Storage Tank			
Date / Time / Inspector	Measured Level of PSH	Measured Level of Water	Replace Sock Filters (1-2 weeks as needed)	Inspect individual Sprinkler Heads

Additional Comments

ROSWELL COMPRESSOR STATION
AIR COMPRESSOR DAILY / WEEKLY MAINTENANCE LOG

DAILY

Date / Time / Inspector	Maintain oil at 1/3 level in site tube	Check oil return line for oil flow	Drain Condensate seperator	Oil Filter (psi)	Oil Separator (psi)

WEEKLY

Date / Time / Inspector	Inspect air inlet filter element	Check belt tension	Check heat exchanger for cleanliness	Tighten loose fittings & fasteners	Drain air receiver	Drain condensate from oil sump	Check load / unload Cycle

Additional Comments

ROSWELL COMPRESSOR STATION
BAKER FURNACE SEMI-ANNUAL / ANNUAL MAINTENANCE LOG
WEST UNIT (Serial No. 285); NMED Air Permit No. 1777

MONTHLY

Date / Time / Inspector	Total Hours of Operation	Grease Bearings	Check Belts	Check Air Filter

SEMI-ANNUAL

Date / Time / Inspector	Total Hours of Operation	Replace Oil	Replace Air Filter	Replace Belts (as needed)

Additional Comments

ROSWELL COMPRESSOR STATION
BAKER FURNACE SEMI-ANNUAL / ANNUAL MAINTENANCE LOG
EAST UNIT (Serial No. 286); NMED Air Permit No. 1776

MONTHLY

Date / Time / Inspector	Total Hours of Operation	Grease Bearings	Check Belts	Check Air Filter

SEMI-ANNUAL

Date / Time / Inspector	Total Hours of Operation	Replace Oil	Replace Air Filter	Replace Belts (as needed)

Additional Comments

ROSWELL COMPRESSOR STATION
AIR COMPRESSOR SEMI-ANNUAL / ANNUAL MAINTENANCE LOG

SEMI-ANNUAL

Date / Time / Inspector	Check motor/compressor V-belt alignment	Change Air Filter	Change Lubricant Filter

ANNUAL

Date / Time / Inspector	Change Lubricant	Change Oil/Air Separator Element

Additional Comments