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TRANSWESTERN PIPELINE
An ENERGY TRANSFER Company

January 2, 2019

Mr. John Kieling
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building
1 Santa Fe, New Mexico 87505

RE: Second Response to Comments
2017 Annual Report
Roswell Compressor Station No. 9
Transwestern Pipeline Company
Roswell, Chaves County, New Mexico
NMOCD Case #GW-052
EPA ID No. NMD986676955
HWB-TWP-18-001

Dear Mr. Kieling;

Transwestern Pipeline, LLC (Transwestern) submits this *Second Response to Comments* (RTC) regarding the initial *Response to Approval with Modification Comments regarding the 2017 Annual Report* for the above referenced Site received from the New Mexico Environment Department (NMED). To respond specifically to each of the Agencies comments, the original comment included within the NMED letter is in **bold**, with the Transwestern response included in plain text immediately following the item requiring a response.

NMED Comment 1

The referenced task/invoice number (HWB-TWP-17-002) is incorrect in the letter title. The appropriate task/invoice number for this correspondence is HWB-TWP-18-001. Use the appropriate task/invoice number for future correspondence. In addition, the Response Letter is titled as the Response to Approval Letter Comments. NMED issued an approval with modifications, rather than an approval. Reference the letter accurately in future correspondence. No revision is necessary to this Response Letter.

Comment noted.

Comment 2

The response to Comment 2 of NMED's *Approval with Modifications,* dated May 1, 2018, states, "[t]he aboveground storage tanks are not subject to the Stipulated Final Order (SFO) issued by NMED in March 2013. "The entire Facility, as defined in Order Section II.A.3, is subject to the release reporting and assessment requirements of the Order. The Respondent states, "[t]hese tanks serve to store natural gas condensate produced by pipeline maintenance activities which is delivered by piping from other operating equipment at the Facility." Since the tanks may contain hazardous waste or contaminants as defined in Order Section III.B, the

Respondent must report any release to NMED within 15 days after discovery in accordance with Order Section V.A. No response is necessary.

Comment noted. Any newly discovered AOCs will be handled in accordance with Section V of the Order as required.

Comment 3

The replacement pages included in Attachment A are not fully revised to reflect the changes required by Comment 6 of NMED's *Approval with Modifications.* There are discrepancies in the number of wells in Circuit C and Circuit D between Figure 1-3 and the text in the replacement pages. Provide replacement pages that address the revisions required by Comment 6. In addition, the Response Letter states that well MPE-21 was not included in the SVE optimization test; however, well MPE-21 appears to be included in Circuit B according to Figure 1-3. Revise Figure 1-3 to depict an accurate configuration of the remediation system. Furthermore, the note in Figure 1-3 states, "Circuit E consists of 9 shallow SVE wells that are located within Circuit C and D." No discussion was provided regarding Circuit E in the 2017 Report. Provide information about Circuit E in the response letter.

Based on our review of the system optimization documents, MPE-21 was included in Circuit B for the SVE optimization test. Figure 1-3 was reviewed and updated to indicate the accurate configuration of the circuit. **Attachment A** contains the revised Figure 1-3 and replacement pages. Circuit E well grouping consists of nine SVE wells (SVE-22 though SVE-28, SVE-30, and SVE-31) which are collocated in a cluster with a MPE well (MPE-22 through MPE-28, MPE-30, and MPE-31). The SVE wells were installed at shallow depths (less than 45 feet below ground surface) above the groundwater to enhance recovery of vapor-phase hydrocarbons in the source area. The SVE wells operate in conjunction with the MPE wells located in Circuits C and D.

Comment 4

The response to Comment 7 of NMED's *Approval with Modifications,* states, "[t]he available evidence from the Site indicates the potential for short-circuiting in these wells due to the length of the well screens compared to the depth of the nearby pipelines." Provide a table showing the depths of the pipelines, depths of the screened intervals of relevant wells, and lateral distances from the pipelines to the wells in the response letter. In addition, provide a discussion to justify the statement using information provided in the table.

Upon further consideration, Transwestern withdraws the idea that short-circuiting may be contributed by the nearby pipelines. Transwestern further evaluated the subsurface conditions with personnel that was on-site during the abandonment of MPE-1 through MPE-6 in Circuit A. Based on field data and personnel observation, the geology in the area of MPE-1 and MPE-6 includes large cobbles rather than finer sands at depth. The large cobbles would allow air to freely flow to the MPE wells when compared to finer grained materials found elsewhere in the subsurface. Transwestern will continue to evaluate the "short-circuiting" effects that may be attributing to the low vacuum observations and decreased recovery rates in Circuit A when compared to Circuits C and D.

Comment 5

The response to Comment 9 of NMED's *Approval with Modifications,* states, "[t]he soil vapor extraction and groundwater extraction technologies at the site can operate independently. Therefore, the groundwater plume is still controlled by pumping activities while vacuum extraction is isolated between Circuits to optimize mass removal rates." While the groundwater extraction addresses expansion of the groundwater plume, potential expansion of the vapor plume is not addressed. If the Respondent proposes to operate only Circuit D for optimal recovery, vapor plumes must also be addressed. NMED generally concurs with the optimization approach; however, the current configuration of the remediation system (operation of all circuits) must be maintained unless the Respondent demonstrates that the vapor plumes will not expand. An additional blower appears to address the "lack of power condition" and may resolve the issue.

Transwestern does not agree with NMED's assessment that vapor or groundwater migration is a concern at this site. The plume has shrunk since beginning operation of the multiphase extraction system to the extent that six MPE wells were allowed to be plugged and abandoned by the agency. Available evidence from the MPE system vapor results indicate that more, rather than the same or less, soil vapor is being recovered in the optimized configuration. Even if there was some additional vapor migration, it would unlikely be to the extent exhibited by the initial plume.

Additionally, the current groundwater plume is located on the northeastern edge of the compressor station property boundary and the adjacent state land. There are no inhabited buildings other than the remedial system equipment shed (metal building with one man-door and one large roll up door) in close proximity to the plume, nor are there any buildings on the state land that may represent a potential vapor intrusion risk. If these conditions change, Transwestern will re-evaluate the necessity to include additional circuits in the wells.

Finally, in Section 8.5 of the approved May 2013 *Amended Remediation Work Plan*, Transwestern clearly notes that it will take steps to optimize system operation by taking steps like those described in the *2017 Annual Report*. Transwestern plans to continue to operate this system according to the approved RWP and report the results on an annual basis. This optimization approach allows Transwestern to operate the current system configuration within the requirements of the Title V Air Permit for the Compressor Station.

The current operating equipment and existing remediation activities continue to meet the purpose of the Order (Section III.A).

Comment 6

The response to Comment 13 of NMED's *Approval with Modifications,* states, "RW-1 is a sentinel well reportedly installed to the top of a finer-grained unit within the subsurface materials that allows for perched groundwater above the more regional water table." It appears that two separate aquifers (perched and regional aquifers) are present at the site.

The extent of contamination in the perched aquifer must also be investigated. The Respondent must include 2 rounds of VOC analysis for all wells installed in the perched aquifer (RW-1 and SVE wells, where applicable). Include VOC analysis in the next update of the O&M and monitoring plan due by May 31, 2019.

Transwestern agrees to monitoring the SVE wells and RW-1 during two sampling events, if the wells contain groundwater without free product, and report those results, with any associated recommendations in the annual report. Transwestern will sample the wells in accordance with the procedures in the current Operation, Maintenance and Monitoring (OMM) Plan but recommends evaluating the data from the two events to determine whether a revised OMM Plan will be necessary.

Comment 7

The response to Comment 14 of NMED's *Approval with Modifications,* states, "[a]nomalies in groundwater elevations not used for contouring considers well construction (deep well versus shallow well), potential field data collection errors, or potential top of casing elevation surveying errors. Further evaluation will be performed to identify proposed measures to eliminate, reduce or explain future occurrences in future Annual Reports." Provide more specific measures to address Comment 14 in the response letter. If wells are installed in separate aquifers (e.g., deep versus shallow), propose to prepare each groundwater surface elevation map separately. If there are errors in survey data, propose to re-survey all existing wells at the site. If a re-survey was conducted, provide a table listing the original and re-surveyed elevations in future reports.

The groundwater data on this site has been generally consistent in terms of flow direction over the life of the project. In addition, the most recent survey was conducted in 2013 after the last well installation project at the site. Furthermore, depth to groundwater measurements are obtained manually and thus there remains potential for slight human error(s) in the field. As noted in the initial response, Transwestern will conduct additional evaluation and corrective actions if warranted by the data collected in 2018.

If you have any further questions or comments regarding these responses, please do not hesitate to contact me at 210.870.2725 or JD Haines of EarthCon at 317.450.6126.

Sincerely,

Ms. Stacy Boultinghouse, PG
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Transwestern Pipeline Company, LLC
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Cc: D. Cobain, NMED HWB
M. Suzuki, NMED HWB K.
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Attachment A

Pilot Study Data Evaluation

During the pilot study, vapor concentrations were measured from each recovery well line at the manifold of the selected Circuit. Vapor concentrations were measured by collecting an air sample in a tedlar bag and using a photoionization detector (PID). A summary of PID readings is provided in the table below.

Table A: PID Readings Summary of Wells at the Manifold

Circuit	Minimum PID Reading	Maximum PID Reading	Average PID Reading
	ppmv	ppmv	ppmv
A	2.2	406	156
B	32.3	1,226	397
C	22.8	717	252
D	211	1,980	761

Notes: ppmv- parts per million per volume

In Circuit A, five recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in MPE-10 and MPE-11, while PID readings of less than 150 ppmV were observed in MPE-7, MPE-8, and MPE-9. The maximum PID reading of 406 ppmV was observed in MPE-10. A composite air sample was also collected from the Circuit A effluent main header line of the piping manifold. The average and maximum composite PID readings were measured to be 155 ppmV and 189 ppmV, respectively. The PID readings from the recovery wells appear to increase as the applied vacuum by the blower increases. The maximum applied wellhead vacuum achieved for Circuit A recovery wells was approximately 67.6 inches of water ("H2O) or 5 inches of mercury ("Hg) in MPE-8.

In Circuit B, eleven recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in seven of the eleven recovery wells (MPE-12, MPE-13, MPE-14, MPE-16, MPE-17, MPE-19, and MPE-20), while PID readings of less than 150 ppmV were observed in MPE-15, MPE-18, MPE-21 and MPE-38. The maximum PID reading was observed in MPE-17. The average and maximum Circuit B composite PID readings were measured to be 235 ppmV and 387 ppmV, respectively. The maximum applied vacuum achieved for Circuit B recovery wells was 81.57"H2O (6"Hg).

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In Circuit C, nine recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in five of the nine recovery wells (MPE-30, MPE-31, MPE-32, MPE-35, and MPE-41), while PID readings of less than 150 ppmV were observed in MPE-33, MPE-34, MPE-36, and MPE-37. The maximum PID reading of 717.5 ppmV was observed in MPE-31. A composite air sample was also collected from effluent main header line from Circuit C. The average and maximum composite PID readings were measured to be 338 ppmV and 363 ppmV, respectively. The maximum applied vacuum achieved for Circuit C recovery wells was 155.8"H2O (11.4"Hg).

In Circuit D, ten recovery wells were used during the study. PID readings of greater than 200 ppmV were observed in each of the ten recovery wells (MPE-22, MPE-23, MPE-24, MPE-25, MPE-26, MPE-27, MPE-28, MPE-29, MPE-39, and MPE-40). The maximum PID reading of 1,980 ppmV was observed in MPE-24. A composite air sample was also collected from effluent main header line from Circuit D. The average and maximum composite PID readings were measured to be 235 ppmV and 387 ppmV, respectively. The maximum applied vacuum achieved for Circuit D recovery wells was 81.57"H2O (6.0"Hg) in 2017. However, further field evaluation in 2018 determined that applied vacuum of 122"H2O (9"Hg) can be achieved for Circuit D.

The applied vacuum that can be achieved appears to vary between Circuits. In January of 2018, further evaluation was performed to assess the blower vacuum and the applied vacuum. According to field evaluation, a maximum applied vacuum of approximately 4.5" Hg was maintained for Circuits A and B while an applied vacuum of greater than 9" Hg was maintained for Circuits C and D. The lower applied vacuums of Circuits A and B may be attributed to the number of operating wells and the soil bedding material used for the underground main natural gas pipe line, which may be short-circuiting air for the SVE blowers.

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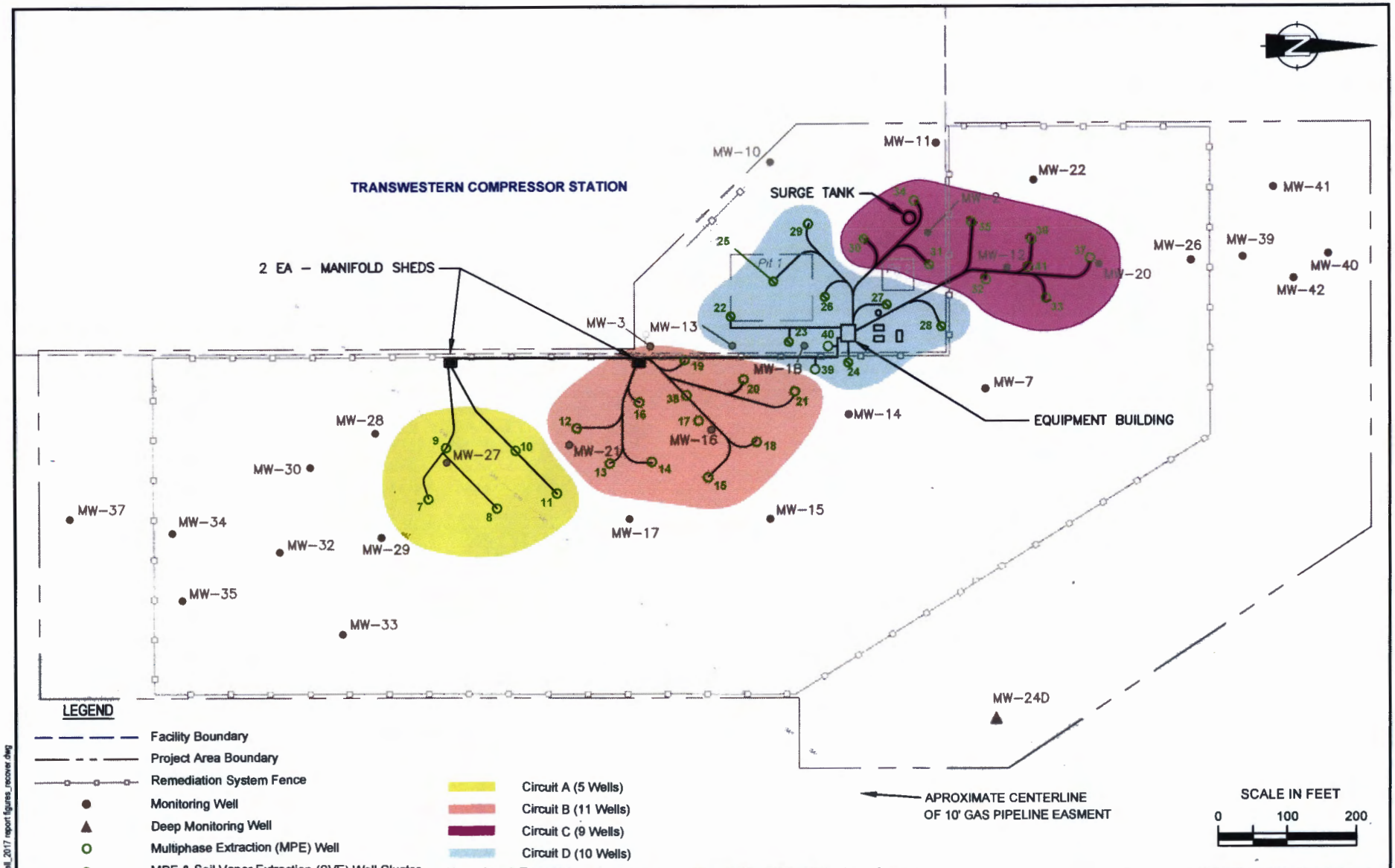

Note: Circuit E consists of 9 shallow SVE wells that are located within circuit C and D.

SOURCE: CYPRESS ENGINEERING SERVICES INC.

REPORT OF 2017 GROUNDWATER REMEDIATION ACTIVITIES
TRANSWESTERN PIPELINE COMPANY, LLC
TRANSWESTERN COMPRESSOR STATION No. 9
(ROSWELL COMPRESSOR STATION)
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20180005.00

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REMEDIATION SYSTEM LAYOUT

DRAWN:	CHECKED:	DATE:	FIGURE:
HVP	SD	12/20/18	1-3

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