February 26, 2021

Re: 2021 Q1 Assessment and Remediation Summary
Kerr-McGee Oil and Gas Onshore, LP
Champlin 86 Amoco 0-61N68W 4NESW Pad
Form 27 Document # 402534540
Remediation # 16133
NESW Sec 4-T1N-R68W

Summary of Field Assessment Activities

On October 27, 2020, ERO Resources (ERO) notified Kerr-McGee Oil and Gas Onshore, LP (KMG) of soil vapor impacts discovered at the Champlin 86 Amoco 0-61N68W 4NESW Pad (Site). ERO identified these potential impacts in late September 2020 after installing 11 soil vapor probes at the site to screen for soil vapor at five feet below ground surface (bgs). On October 28, and on behalf of KMG, WSP USA Inc. (WSP) conducted field screening at five of ERO's sampling points using a Gas Electron Multiplier 5000 Gas Analyzer (GEM), which is a gas extraction analyzer that measures total gaseous hydrocarbons as methane, carbon dioxide, oxygen, hydrogen sulfide, and carbon monoxide. WSP also collected samples from soil vapor probes with detectable methane using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on the GEM. The analytical samples were submitted to Dolan Integration Group (DIG) for gas composition and isotopic analysis. Results from the sampling event were received from DIG on November 2, 2020 and indicated the presence of thermogenic gas in the subsurface.

On November 3 and November 4, 2020, WSP utilized a methane flux meter at 179 locations around the Site to assess the presence of methane released from the subsurface. The meter measures the flux of methane, hydrogen sulfide, and carbon dioxide by employing individual gas-specific sensors that record the increase of gas concentrations over time for a given surface area. There were both methane flux and carbon dioxide flux detected at the time of the surface assessment. Methane flux readings ranged from 1.279 to 47.673 parts per million per second (ppm s^{-1}) and carbon dioxide flux readings ranged from 0.003 to 1.483 ppm s^{-1}. Figure 1 shows the areas with the highest methane flux readings. Since no permanent structures are present within or near the area where the methane flux was detected, there are no safety risks to the public. The proposed system is designed to operate in a methane rich environment, therefore reducing the safety risk to the operator.

Starting on November 6, 2020, WSP initiated a shallow subsurface assessment by installing and screening approximately 107 closely-spaced shallow vapor point borings. The shallow vapor points were installed 10 to 15 feet apart, with the first 22 points having been installed in a grid pattern around the area with the highest detected methane flux, *i.e.*, the area between the Sec Four 14-4 and Sec Four 22-4 plugged and abandoned wellheads. WSP installed additional shallow vapor points around the perimeter of the grid—including around the Sec Four 12-4 plugged and abandoned wellhead—to assess potential impacts at the western most plugged and abandoned wellhead, as shown in the attached Figure 2.

These shallow vapor points were hand-augured to depth of approximately five feet bgs and were constructed with one-inch polyvinyl chloride (PVC) pipe, with the bottom foot being one-inch 0.01 slot PVC screen. PVC slip caps were fabricated using brass street elbows, ball valves, and adapters to allow for sampling and to minimize potential influence or dilution by atmospheric air. The shallow vapor points

were then completed with sand around the screened PVC intervals and hydrated bentonite crumbles to the surface.

All shallow vapor points were allowed to equilibrate for a minimum of 24 hours prior to screening with the GEM. The GEM was calibrated daily with a three-point calibration protocol before screening began. Isotube™ samples were collected from all shallow vapor points in which methane was detected and were submitted to IsoTech Laboratories (IsoTech) for gas composition analysis and isotopic analysis. Results of the IsoTech laboratory analyses from the shallow vapor points are attached. The shallow vapor points were abandoned on December 31, 2020 to accommodate re-entry into the abandoned Sec Four 14-4 wellhead.

Prior to plugging and abandoning the production wells at the Site, paired bradenhead and production gas samples were collected from Sec Four wellheads 12-4, 32-4, 33-4, 13-4, 35-4, and 14-4 and analyzed for gas composition and stable isotopic analysis by IsoTech. A comparison of these analytical results to shallow vapor point analytical results showed that the shallow vapor point analytical results appeared to be most similar to the bradenhead samples collected from the Sec Four 14-4 wellhead and the 12-4 wellhead. None of the soil vapor probe samples were similar in composition to the production gas samples collected from the above-referenced wells.

During re-entry into the Sec Four 14-4 wellhead, and prior to completing remediation, gas samples were collected on multiple days at correspondingly multiple depths and analyzed for gas composition and stable isotopic analysis. Analytical results from the deepest and least-altered casing samples are identical in stable isotopic composition to the least-altered and most-concentrated soil gas samples collected from the shallow vapor points at the Site. Additionally, these analytical results establish that the stray thermogenic gas source is from a shallower, less thermally-mature zone than the producing intervals of the Sec Four wells. The gas analysis also indicates that there is only a single source for the stray soil gas at the Site. Based on analytical results, the proposed remedial approach to address shallow gas impacts that is outlined in this document is appropriate for this location.

Action to Address Soil Impacts

WSP, on behalf of KMG, is proposing a Soil Vapor Extraction (SVE) system to remediate the soil vapor impacts at the Site. Eight SVE wells are being installed in an equal area grid pattern, 40 feet to 60 feet apart, with the center of the wells being located near the plugged and abandoned Sec Four 14-4 wellhead and the areas with the highest methane detections, as shown in the attached Figure 3.

To monitor the progress of the SVE system, WSP will use a calibrated GEM to screen the exhaust stack and the SVE system manifolds at system start-up, five days after start-up, and then weekly until methane is no longer detected. The monitoring data will be used to track increases and decreases in methane concentration over time and the data will be used to adjust the system to optimize recovery.

Once methane is no longer detected in the exhaust stack or manifolds, WSP will shut down the system and allow the site to equilibrate for two days before screening and sampling the wells to verify all soil vapor impacts have been removed from the subsurface. If no impacts are detected during the site wide sampling event, subsequent site sampling will continue on a periodic basis to monitor any for rebound if it occurs.