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February 13, 2019

Mr. Kris Neidel
Environmental Protection Specialist, Northwest Area
Colorado Oil and Gas Conservation Commission
818 Taughenbaugh Blvd, Suite 103
Rifle, CO 81650

Re: Collection Station 47 – Response to Form 27 COAs (Document # 401894372)

Dear Mr. Neidel:

Chevron Environmental Management Company (CEMC) has prepared this response to the Colorado Oil and Gas Conservation Commission (COGCC) conditions of approval (COAs) listed on Form 27 (Document # 401894372) concerning the Remediation Documentation Report CS-47B and request for closure. CEMC has carefully considered the COAs and provides the following responses:

COA #1 - *Prior to the COGCC issuing a no further action (NFA), a soil boring shall be advanced in the areas with the most elevated impacts of TPH (SB-06, SB-1, SB-17, and in the vicinity of MW-01R). Samples shall be collected in the smear zone from about 12.5 feet below ground surface (bgs) to about 14.5 feet bgs and analyzed for BTEX, TPH-GRO, and TPH DRO.*

Response #1: As shown on **Figure 1** (attached), the remedial excavation at CS-47B extended to the bottom of the smear zone. Data collected from MW-1/MW-1R during the past seven gauging events indicate groundwater elevation ranges from a low of 5,191.40 feet above mean sea level (ft. amsl) to a high of 5,193.57 ft. amsl. During the CS-47B remedial excavation, all hydrocarbon-impacted soil was removed from the vadose zone and smear zone at SB-06, SB-17, and in the vicinity of MW-1/MW-1R as the excavation extended to a depth of 5,191.50 ft amsl. At SB-01, the remedial excavation extended to just below the high groundwater elevation since there were no visual and olfactory indications or photoionization detector (PID) readings that indicated hydrocarbon impacted soil was present.

As demonstrated above and shown on **Figure 1**, further assessment within the smear zone does not provide additional value. CEMC respectfully requests the COGCC reconsider their request for additional assessment and closure of CS-47B. Justification to support closure includes:

1. Vadose zone and smear zone soils exceeding COGCC Table 910-1 Concentration Levels have been removed;
2. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations in groundwater have never been detected above Table 910-1 Concentration Levels during any of the groundwater sampling events; and
3. Liquid hydrocarbons are not present.

COA #2 - *TestAmerica Job ID: 280-111098-1 indicates Rev. 1 on 1/4/19. It is stated: REVISED REPORT - 1/4/18. The client contacted the laboratory and requested a change to how the DRO data was reported. Originally the data was reported using the extended range Diesel Range Organics (C10-C36). The client would like the data reported as Diesel Range Organics (C10-C28). The lab went back and reprocessed the data. No other changes were made.*

Response #2: As indicated in the COA, the original lab report (TestAmerica Job ID: 280-111098) inadvertently reported Diesel Range Organics with a carbon range of C10-C36. Per 900 Series Rules, the COGCC recommends use of United States Environmental Protection Agency (EPA) SW-846 methods. Per EPA SW-846 Method 8015, GRO corresponds to the range of alkanes from C6 to C10 and DRO corresponds to the range of alkanes from C10 to C28. To ensure alignment with COGCC regulations, the DRO analysis was revised to the recommended carbon range.

COA #3 - *A minimum of four quarters of groundwater samples shall be collected from all monitoring wells with hydrocarbons (BTEX) below the Table 910-1 concentration levels.*

Response #3: From January 16, 2017 through November 28, 2018, groundwater samples have been collected at all monitoring wells during at least four monitoring events and have been sampled with a frequency of approximately every three months. Monitoring wells installed in January 2017 (MW-1, MW-2, MW-3, and TW-01) have been gauged and sampled during seven separate sampling events. The analytical results from all groundwater samples collected to date, have never had a detection of BTEX above Table 910-1 Concentrations Levels. CEMC respectfully requests that the COGCC reconsider collection of additional groundwater samples given that BTEX concentrations in groundwater are less than Table 910-1 Concentration Levels.

COA #4 - *The groundwater sample collected from MW-01 on 6/16/18 had a method detection limit (MDL) for benzene of 32 ug/L was non detect (ND) at a reporting limit of 200 ug/L and with a dilution factor of 200. Table 910-1 constituent concentration for benzene is 5 ug/L. Please explain.*

Response #4: TestAmerica was contacted regarding the high method detection limit (MDL) and the following response was provided:

"Samples MW-01-061618 (280-111098-1)[4X] and DUP-01-061618 (280-111098-8)[10X] required dilution prior to analysis due to the nature of the sample matrix and interference. The reporting limits were adjusted based on dilution factors accordingly."

With exception of the sample analysis at MW-1 on 6/16/18 and 5/25/17 where matrix interference was observed, both the MDL and benzene concentrations at all Site monitoring wells (MW-1, MW-1R, MW-2, MW-3, MW-4, MW-5, MW-6, and TW-1) were less than Table 910-1 Concentration Levels. This supports that the interference was likely an anomaly and not representative of an exceedance of Table 910-1 Concentration Levels.

CEMC appreciates the COGCC's consideration of this request and would be happy to set up a call to discuss any of the COAs and responses provided above.

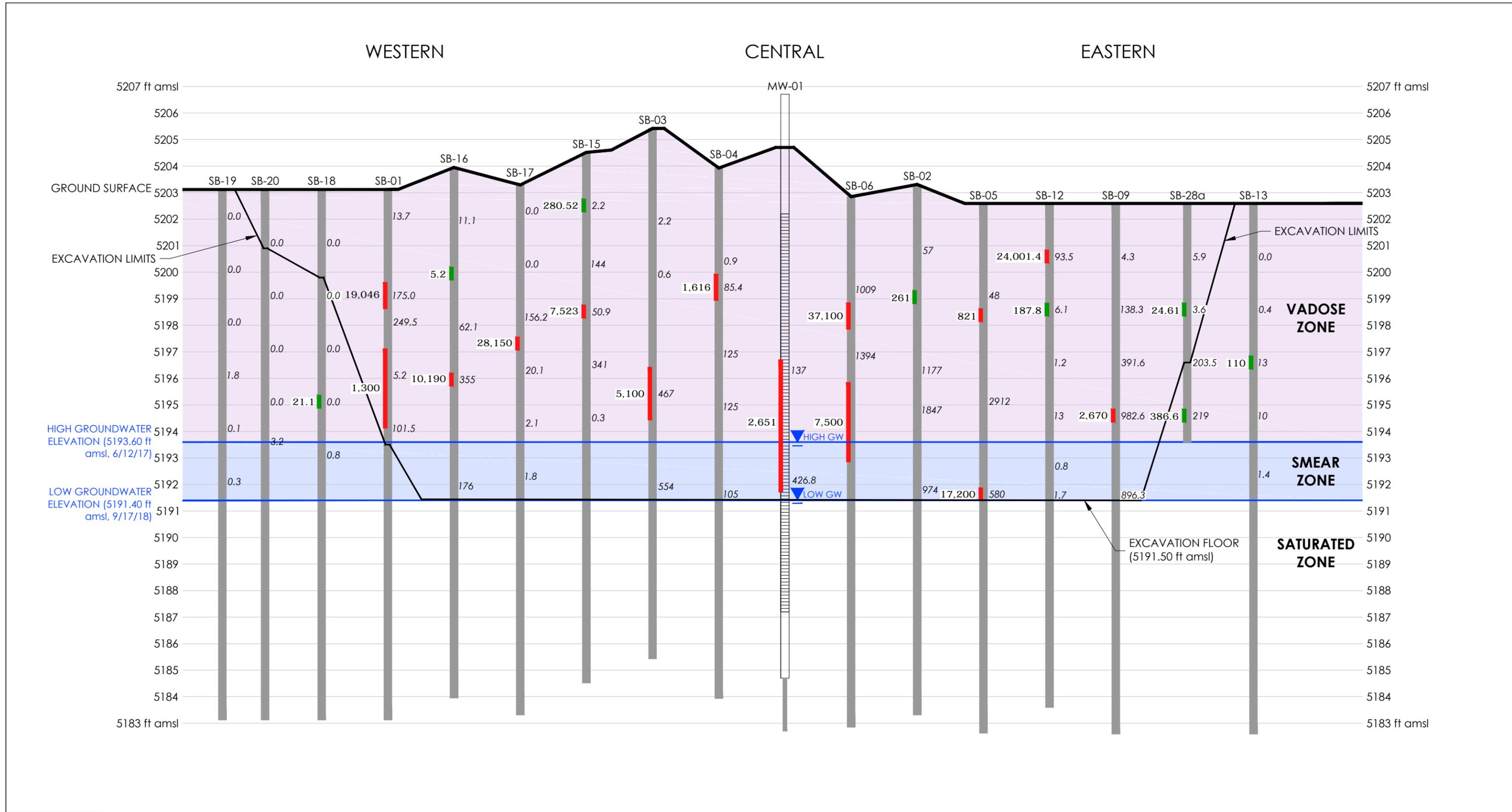
Respectfully,
Chevron Environmental Management Company
on behalf of
Chevron U.S.A. Inc.



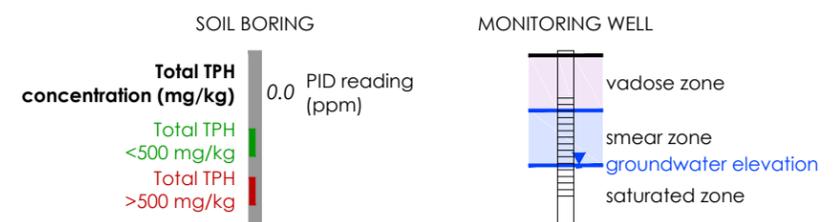
Adriane Gifford
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Attachments:
Figure 1 – CS-47B - Evaluation of Water Bearing Zone

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 2019/02/12 12:26 PM By: Whitaker, Savanah



Legend



Notes

- ft amsl = feet above mean sea level
- TPH = total petroleum hydrocarbons
- mg/kg = milligrams per kilogram
- ppm = parts per million
- PID = photoionization detector

Client/Project
 Chevron EMC
 Rangely CS-47B No. 10501

Figure No.
 1

Title
 CS-47b - EVALUATION OF WATER BEARING ZONE



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