MEMO REPORT FROM KRW CONSULTING, INC.

August 6, 2010

To: J.D. McElhaney – RSO – Delineation & Remediation SME – ExxonMobil;
Nedra Kelly – Operations Compliance Specialist – ExxonMobil

Subject: **Assessment Report/Remediation Plan**
T18X-12G Location Former Tank Containment Area
Piceance Creek Development Project

Summary of Assessment Methods:

Per ExxonMobil's request, KRW Consulting, Inc. (KRW) conducted environmental assessment activities at the subject site on March 4, 2010. The intent of this assessment was to evaluate the vertical and lateral extent of impacted soils at the site due to a tank battery release of condensate. Assessment activities were focused on the known area of the release within and adjacent to the tank battery containment area. Some excavation of impacted soils outside the containment area berm had been completed prior to assessment activities.

Soil material samples were collected manually from eight locations, as shown on attached Figure 1. At locations 1 and 2, samples were collected from two depth intervals: 0 to 6" ("A" samples) and 18" to 24" ("B" samples). Samples collected at points 3, 4, and 5 were collected from the sides of the existing excavation and sample 8A was collected at the base of the excavation, near bedrock. Samples 6A and 7A are composite soil samples that were collected from berm materials on the north side and south side of the containment area, respectively. In addition, a composite sample of apparently impacted materials from inside the berm (WC sample) was collected for waste profiling purposes to facilitate disposal authorization. All samples were field screened for PID readings. Any odor and/or soil staining were also observed. Soil samples 1A through 8A were submitted to an independent laboratory for TPH – Gas Range Organics (TPH-GRO), TPH Diesel Range Organics (TPH-DRO), BTEX, pH, Electrical Conductivity (EC), and Sodium Absorption Ration (SAR) analyses. The waste characterization sample was submitted for corrosivity, reactivity, ignitibility, total recoverable petroleum hydrocarbons (TRPH), TCLP benzene, and paint filter test analyses, as required by Rio Blanco County for disposal authorization.

Each of the laboratory samples was collected following proper sampling protocol to prevent cross-contamination. Samples were submitted for analyses to Accutest, Inc. in Wheat

Ridge, Colorado, following proper chain-of-custody protocol. All excavation/sampling equipment was properly decontaminated following environmental sampling protocol.

Please refer to the attached figure for each of the soil sample locations. Refer to the attached field notes for sample descriptions and field PID readings. Laboratory findings for the soil sample analyses are summarized on Table 1. This table includes the Colorado Oil and Gas Conservation Commission (COGCC) allowable levels are presented on Table 1, as well. The complete laboratory analytical report is also attached.

Summary of Assessment Findings:

- It is our understanding, from discussions with ExxonMobil personnel that the previously excavated area outside of the containment area along the north side of the containment berm, is an area where the earthen berm had been visibly compromised by the tank battery release. Initial excavation activities attempted to assess the extent of impacted soils in this area. All excavated soils from this area were placed within the bermed containment area.

- Consolidated bedrock conditions exist at the site at depth of approximately 24 inches below surface. It appears that bedrock may occur slightly deeper north of the containment area, as the existing excavation north of the containment area encountered bedrock at a depth of 30 inches to 36 inches below surface.

- Hydrocarbon impact to soil materials (above COGCC allowable levels) is apparent within the entire containment area from surface to bedrock. Composite samples collected from the containment berm material also indicate hydrocarbon impact above COGCC allowable levels.

- Additional hydrocarbon impact to soils (above COGCC allowable levels) exists outside the containment area in the area of the existing excavation. The northern extent of hydrocarbon impact is defined by sample location 4, but additional impact is evident on the east and west sides of the excavation as evidenced by hydrocarbon constituent concentrations detected in samples 3A and 5A, respectively. Materials at the base of the excavation are also significantly impacted as evidenced by constituent concentrations detected in sample 8A.

- Elevated SAR and/or pH levels (above COGCC allowable levels) were also detected in the hydrocarbon impacted soils. It should be noted that soils throughout the

Piceance Creek area generally exhibit naturally occurring pH levels above COGCC allowable levels. Therefore, the elevated pH levels noted at the site are most likely not related to the tank battery condensate release.

Proposed Remediation Plan:

1. Hydrocarbon impacted soil materials from within the containment area (including the containment area berm) will be excavated and removed to bedrock.
2. Excavating and removal activities will be advanced outside the containment area to include soil materials around the 3A, 4A, and 5A sample locations. These excavating activities will also be advanced to bedrock. The final areal limits of the excavation will be defined in the field using PID readings and field observations.
3. Six confirmation samples will be collected for laboratory analysis from the excavation side-walls following excavating activities (one each from the four sides of the containment area and one each from the west and east sides of the previously excavated area) to validate that impacted soils exceeding COGCC allowable levels have been removed. The excavation will be advanced to the top of competent bedrock (i.e., no excavation base samples will be collected). Confirmation samples will be analyzed for TPH (GRO & DRO), BTEX, EC, SAR, and pH.
4. Excavated and removed soils will be transported to an approved solid waste disposal facility (Rio Blanco's Wray Gulch landfill). Proper protocol for waste profiling and manifesting will be followed for all disposed soil materials.
5. Clean backfill material (likely crusher fines from the White River City Pit, Meeker. Colorado) will be imported to the site and placed in the excavation to pre-remediation grades.

Based on the amount of condensate reportedly released, the estimated depth to groundwater beneath the site (greater than 150 feet), and site subsurface conditions (i.e. competent bedrock), it is unlikely that groundwater has been impacted beneath the site. Since no assessment has been completed below the top of bedrock, if significant fracture zones in the bedrock exhibiting hydrocarbon impact are noted during excavation and soil removal activities, additional assessment may be warranted.

The area of apparent impact is approximately 6,000 square feet, with impact extending to a depth of approximately 2 feet below surface, resulting in an impacted soil volume of approximately 12,000 cubic feet (445 cubic yards). Assuming a porosity of 30% and a 20% natural moisture content of the material in the area, there is a computed 2,880 cubic feet of void space available to contain the release. Given records indicate that 5 barrels of condensate (i.e. 28 cubic feet of condensate) were released, there is ample "storage" within the impacted area to contain the known volume of release.

If you have any questions regarding this report, please contact me at your convenience.

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Attachments – Site Figure; Field Notes; Summary Table; Soil Laboratory Results