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Western Gallup
Marathon
12/6/18

Update Regarding October 19, 2018 NMED Disapproval Letter Item 2 Investigation Work Plan OW-53 Twin Wells

1. **Disapproval Item 2 requests an Investigation Report for the OW-14 source area.** It has been Marathon's plan to incorporate multiple phases of investigation into one report in order to consolidate the information into one place. Gaining an access agreement to the offsite property to the northeast has been problematic, and has delayed the submittal of a single report that ties all data together in one place.
2. An **Investigation Work Plan OW-14 Source Area** was submitted to the NMED in September 2015 which outlined the steps that would be taken to evaluate the area. These activities have been implemented and additional investigation is ongoing.
3. **The activities that have been completed include** sampling and analysis of soils and groundwater in the vicinity of storage Tanks 568, 569, and 570 and along the northern boundary (east end) of the Tank Farm. The current investigation began on September 21, 2016 and continued through October 5, 2016. This included the completion of six soil borings and two permanent monitoring wells with 25 soil samples (excluding additional quality assurance samples) collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons, and metals). Temporary well completions were installed in all six soil borings. Eight groundwater samples (excluding additional quality assurance samples) were collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons (TPH), metals, and inorganic/general water quality parameters).
4. **Analytical Results:** No individual organic constituents were reported at concentrations above their respective residential direct contact screening levels within the exception of 1,2,4-trimethylbenzene, benzene and ethylbenzene. The three constituents were reported at concentrations above their respective residential direct contact screening levels in boring TK569-3 in the soil sample collected from the 24 to 26 foot interval. The reported concentration of the diesel range organics (DRO) also exceeded the screening level in soil boring TK569-3 (24-26').

Manganese was also detected at a concentration above the residential soil screening level in one sample [TK 568-2 (22-24')]. It is possible that some of these detections are reflective of naturally occurring concentrations but a site-specific metals background study will be required to make this determination. A work plan to establish a site specific background concentration for metals was recently submitted to the NMED.

There were seven inorganic constituents in the totals groundwater analyses (arsenic, barium, cobalt, iron, lead, manganese and vanadium) detected at concentrations above residential/tap

water screening levels in groundwater samples collected from permanent and temporary well completions. At least one of these exceedances of screening levels for inorganic constituents occurred in every groundwater sample analyzed with the exception of the groundwater samples collected from TK 568-1. Only arsenic, barium, iron, and manganese were detected at concentrations above screening levels in the dissolved analyses.

The following thirteen organic constituents were detected at concentrations above screening levels in at least one of the eight groundwater samples collected from the permanent/temporary well completions:

- 2,4-Trimethylbenzene;
- 1,2-Dibromoethane;
- 1,2-Dichloropropane;
- 1,3,5-Trimethylbenzene;
- 1-Methylnaphthalene;
- 2-Methylnaphthalene;
- Benzene;
- Ethylbenzene;
- MTBE;
- Naphthalene;
- Toluene;
- Total Xylenes; and
- Bis (2-ethylhexyl) phthalate.

5. **Marathon is recommending** As previously mentioned, a separate investigation is recommended to evaluate naturally occurring concentrations of inorganic constituents in soil and a work plan has been submitted to the NMED to accomplish this purpose.

As soon as an offsite agreement can be obtained from the property owner to the east of the OW-30 area, a number of offsite drilling locations can be executed.