

## **Marathon Oil Company BMPs**

Marathon has established an evaluation process for operations within the Piceance Basin that addresses wildlife concerns. This listing of Items 1-5 represents our specific actions that are considered avoidance and minimization actions by the CDOW. Marathon has developed these BMPs as part of our Standard Operating Procedures (SOP) to provide operational and wildlife management for the Piceance Basin.

### **1. Riparian Area Protection for Wildlife**

- Marathon will locate roads as far from riparian areas and bottoms of drainages as possible and outside of riparian habitat. However, Marathon is limited in areas where landowners dictate utilization of existing and location of roads.

### **2. Company Vehicle Guidelines and Traffic Reductions for Wildlife Protection**

- Marathon has 25 mph limit for all roads (speed limit signs are posted); additionally there is a ban on radio/cell phone driving requirement to enhance driving awareness. Carpooling for major projects are encouraged for all Marathon contractors to reduce traffic; carpooling is used for major projects. Additionally, Marathon maintains a Temporary Living camp, which reduces traffic. There is an understanding that the reduction of traffic as a whole reduces the opportunity for wildlife impacts.
- Marathon is using a SCADA system for several purposes, but it clearly provides a means to reduce traffic by reducing the frequency of visitations to each pad. Marathon currently has eight pads in production, which require daily visits until the remote sensing system is validated. The system has been instituted for the purpose of reducing traffic and visitation to the operating pads, providing additional safety for personnel, and mitigating environmental risks.
- Marathon utilizes one Temporary Living camp to house the resources needed to support the drilling operations within the Piceance Basin. The site supports approximately 50 personnel that function on 12-hour shifts. The shift work schedule is 2-weeks on and 2-weeks off. This is a traffic reduction of 25 vehicles per day, 7-days per week.

### **3. Infrastructure Layout for Wildlife Protection**

- Marathon is installing a consolidated and centralized fluid collection and shared/consolidated corridor for lines. Marathon will have the majority of the waterlines in place by the end of this year (2009). The waterlines are being located adjacent to existing roads and within existing ROWs. The installation of the waterline coincides with the installation of gas gathering lines being

performed by EPCO to reduce disturbance and traffic. One contractor is being used for all installations to enhance scheduling and reduce personnel and traffic within the Piceance Basin. If Marathon were to facilitate the waterline install independently, it would require a single crew of approximately 15 personnel, at minimum. Timing to complete the installation with a single crew would extend over a significantly longer time period. This is a reduction of 15 personnel and equipment if more than one contractor was being used at the same time to install an additional line within the ROW.

- Each well requires approximately 25,000 barrels of water to drill and complete. The water trucks used for transport carry approximately 100 barrels per load. As a result, 250 truck loads are required per well. Total development will require an average of eight wells per pad to achieve 20 acre spacing. This equates to 2,000 truck loads per pad and would increase with more aggressive development. Once fully installed and tested, the centralized waterline system will substantially reduce trucking requirements. The current needs of 250 loads per well will approach zero once the system is fully installed. Portions of the system, specifically the fresh water supply, have been utilized throughout 2009 to reduce current traffic needs. This traffic reduction will continue as the waterline infrastructure continues mature.

#### 4. Drilling and Production Operations for the Protection of Wildlife

- Marathon will review annually the scheduled civil construction, drilling and completion activities (Plan of Development [POD]) to avoid portions of SWH, specifically for the GrSG. Additionally, Marathon through the POD will schedule our activities in a effort to avoid and/or minimize operations near and within lek sites, elk production areas and active raptor nests.

The POD will be submitted to the CDOW by the end of January for each calendar year. This component of the WMP will be a living document. Marathon will utilize a qualified third party review team jointly with our regulatory compliance group to balance developments and ecological concerns within the Piceance Basin.

Marathon's goal during the annual POD scheduling is to avoid at a minimum 66% of the GrSG SWH.

- If for some reason an area cannot be avoided, Marathon will attempt to avoid the timing period associated with the wildlife category of concern.
  - Lek avoidance is from March 1 through May 15 for major activities
  - Elk Production is rotation of production areas on a seasonal basis;
  - 4-mile buffer for GrSG March 1-June 30 (4-months)

Note: there is an overlap of geographical areas between the elk production areas and the 4-mile GrSG buffer area (SWH). In Marathon's effort to meet the timing for an elk production area, we also achieve avoidance for a portion of the 4-mile buffer area.

- Marathon has agreed to seasonal rotation development activities for the elk production areas.
- Marathon will be reducing visits to pads through the SCADA system. This is one of several benefits that this system provides. We can not define what the frequency of visits will be to each pad because the determinations are based on the data output from the remote sensors (that are monitored back at the Parachute and Grand Junction offices). However, the SCADA system will allow for a reduction in daily maintenance visits, as well as minimize other potential environmental impact via remote pressure, temperature, and level monitoring.

#### 5. Additional Minimizations for Wildlife Protection

- Marathon is following the rule requirements for noise. Regarding raptor perch deterrents, Marathon will provide deterrents in areas where surrounding habitats do not provide natural perches.
- Marathon joint ownership properties can utilize approved seed mixes and restore disturbed sagebrush. In lease areas the land owner dictates the decision on seed mix and restoration of sagebrush. There are discussions with land owners on decisions regarding high priority habitat (lek areas and adjacent lands) where sagebrush can be restored. In other areas the approved land owner seed mix would be applied.
- Marathon is open to conduct raptor survey data and will enlist the CDOW's approach to evaluate survey data protocols.