

**United States Department of the Interior  
Bureau of Land Management**

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**ENVIRONMENTAL ASSESSMENT WY-020-E07-064**

**Case File Number: WYWY-140131  
CA7-013**

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**WEST BRANCH # 1 EXPLORATORY WELL**

*for*

**Wesco Operating Inc., P.O. Box 3439, Casper, WY 82602**

*Location: 6<sup>th</sup> Principal Meridian, T. 53 N., R. 98 W., SECTIONS 11 & 14, Park County, Wyoming.*

U.S. Department of the Interior  
Bureau of Land Management  
Cody Field Office  
1002 Blackburn Avenue  
Cody, Wyoming 82414  
Phone: (307) 578-5900  
Fax: (307) 578-5939

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## 1.0 PURPOSE AND NEED

The purpose of this Environmental Assessment (EA) is to analyze the impacts from a proposed gas well pad and associated access road and buried power/flow lines. Wesco Operating, Inc. (the proponent), has applied to the BLM to construct the well pad on lease WYW-140131 in the McCullough Peaks area, east of Cody, Wyoming.

**Table 1.**

EA PROJECT DATA				
Project Type	Gas Well, Pad, Roads, Buried Lines		EA Number	WY-020-E07-064
Proposed Action	West Branch #1 Well and Access Road			
Lease Number(s)	WYW-140131			
Applicant	Wesco Operating Inc.		Date	May 22, 2007
Case Number	Well Number & Name	Township	Range	Section(s)
CA7-013	West Branch #1	53N	98W	11 & 14

## 1.1 INTRODUCTION

This EA has been prepared to disclose and analyze the environmental consequences of the West Branch # 1 well pad and associated access road and buried power/flow lines (see map, Appendix C).

The EA is a site-specific analysis of potential impacts that could result with the implementation of the proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 CFR 1508.27.

An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, then an EIS would be prepared for the project.

If impacts are found to not be significant, then a Decision Record (DR) may be signed for the EA approving the selected alternative, whether it is the proposed action or another alternative is chosen.

A Decision Record (DR), including a FONSI statement, details the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects).

## **1.2 BACKGROUND**

The Bureau of Land Management (BLM) proposes to permit the Wesco West Branch #1 well, access road, and utility lines which are located in Park County, Wyoming, west of the Whistle Creek drainage approximately 25 miles east of Cody, Wyoming. If approved, pad construction, rig up and drilling would begin within two years of approval.

## **1.3 NEED FOR THE PROPOSED ACTION**

Wesco Operating Inc., has filed an Application for Permit to Drill (APD) to develop Federal Lease WYW-140131, by drilling an exploratory well, and if successful, to produce commercial quantities of oil and or gas from its Federal oil and gas lease.

## **1.4 CONFORMANCE WITH BLM LAND USE PLAN(S)**

The proposed action and alternatives described below are in conformance with the Cody Resource Management Plan, approved November 8, 1990.

Although the proposed action and alternative(s) are not specifically mentioned in the plan, they are consistent with its objectives, goals, and decisions as they relate to Minerals program as stated on page 21 of the Record of Decision (ROD).

The minerals management objective is to maintain or enhance opportunities for mineral exploration and development, while providing protection or enhancement of other resource values consistent with the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming

The McCullough Peaks Wilderness Study Area (WSA) is closed to oil and gas leasing under the interim management provisions for WSAs. The remainder of the planning area is open to oil and gas leasing, subject to appropriate restrictions for surface-disturbing activities.

Throughout the planning area, oil and gas reclamation plans will be prepared to improve reclamation in old fields and to allow for orderly development of new fields.

## **1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS**

BLM policy requires that environmental effects be properly assessed and documented in a National Environmental Policy Act (NEPA) review to assure the decision on the permit is informed and the affects are not significant. The primary regulation governing the analysis process is 40 CFR 1500, (The President's Council on Environmental Quality, implementing regulations for procedural provisions of NEPA).

BLM regulations for oil and gas development are found in 43 CFR 3100. The principal statutes governing oil and gas production on public lands are the Mineral Leasing Act of 1920 and the Federal Land Policy and Management Act of 1976.

The above cited federal laws meet the public need to develop federal mineral resources for fulfillment of America's social, economic and other objectives.

The applicable laws ensure this public need is met by making public lands available to U. S. citizens and privately funded organizations to explore and produce mineral commodities. They do this by mandating agencies to facilitate private sector development of minerals on public lands as a matter of vital public interest.

This action conforms to the Cody RMP/EIS (ROD signed 11/8/90) as required by 43 CFR 1610.5. The RMP specified an objective "to maintain or enhance opportunities for mineral exploration and development, while providing protection or enhancement of other resource values". The plan anticipated the drilling of between 40 and 50 wildcat wells and 620 and 630 development wells in the decade following signature of the ROD. At this time, less than 60% of anticipated wells have been drilled.

To improve surface management of oil and gas operations, BLM issued Instruction Memorandum No. 2004-194, which mandates use of Best Management Practices (BMPs) to limit long term surface disturbance, protect wildlife habitat, protect open space and scenic values and achieve similar objective. The web site shown below contains BLM's current Best Management Practices:

[http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html)

The BMPs are, however, subject to limitations imposed by safety concerns, available technology, and other factors. This is to ensure that development and operation of individual wells and fields do not suffer repeated failure because of faulty design that resulted from inappropriate compliance with BMPs, which are guides rather than absolute mandates. Appendix 'A' lists the Best Management Practices applicable to the West Branch # 1 Well. Appendix 'B' lists the Conditions of Approval (COAs) which would be attached to the authorization to drill.

## **1.6 IDENTIFICATION OF ISSUES**

Four issues were identified as a result of scoping. Those issues are: wild horses, visual resources, sage grouse, and paleontology.

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has developed a range of alternatives. These alternatives, as well as the no action alternative, are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in Chapter 4, for each of the identified issues.

## 2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

As this analysis was prepared, identified effects would be mitigated by adding changes to the Proposed Action – there is no separate mitigation section. All mitigation is included in the description of the Proposed Action or alternatives; no further mitigation is needed.

### 2.1 INTRODUCTION

Three alternatives, including the proposed action, are being analyzed for this proposed project. Those alternatives analyzed in this document are: Alternative A) the Proposed Action; approving the permit with more or less standard Conditions of Approval (COAs) and Best Management Practices (BMPs); Alternative B) Relocated well-site; closer to the Whistle Creek Road, and Alternative C) the No Action Alternative.

The major difference between Alternatives A and B is that Alternative B would have a shorter access road and thereby less acreage of disturbance associated. Alternative B is also closer to existing improvements such as the Whistle Creek Road and the Marathon Pipeline right-of-way (ROW) and pipeline facility.

**Table 2.**

TOTAL MAXIMUM ACREAGE DISTURBED FOR ALT. A & ALT. B					
FEATURE	DESCRIPTION COMMON TO BOTH ALTERNATIVES	ALTERNATIVE A – PROPOSED ACTION		ALTERNATIVE B – RELOCATED WELL SITE CLOSER TO WHISTLE CREEK ROAD	
		LENGTH	ACRES	LENGTH	ACRES
PAD	<b>NEW SURFACE</b> DISTURBANCE: 350' X 350' Pad plus cut and fill slopes, spoil & topsoil	NA	3.6	NA	3.57
NEW ROAD	<b>NEW SURFACE</b> DISTURBANCE: Up to 26' wide	2,030'	1.54	385'	0.23
EXISTING ROAD	<b>EXISTING SURFACE</b> DISTURBANCE: Up to 26' wide	39,960'	23.85	39,255'	23.41
TOTAL DISTURBANCE (NEW)		NA	5.14	NA	3.8
TOTAL DISTURBANCE (NEW & EXISTING)		NA	28.99	NA	27.21

## **2.2 ALTERNATIVE A – PROPOSED ACTION**

Under this alternative the action would be approved as applied for under the APD with more or less standard COAs and BMPs. Additionally, BLM national and statewide policies seasonal timing restrictions for sage grouse, pronghorn, and wild horses would be adhered to.

All aspects of this project would follow timing restrictions set forth in the Cody RMP. Sage grouse nesting, brooding, rearing and wild horse foaling season are between the dates of February 1 and July 31. Pronghorn use this area for wintering and birthing habitat, but the habitat is not considered crucial.

The proposed action would consist of a new well pad measuring approximately 350 x 350 feet, plus cut and fill and retention of soil and topsoil spoil piles. A new access road would be built to standard specifications up to 26 feet in width for a length of over 2000 feet. In addition, the proposed action includes use of the existing Whistle Creek road for approximately 7.5 miles. The table above illustrates the total acreage that would be involved in the proposed action.

The following discussion details the four typical construction/completion phases for a proposed oil or gas well:

### **Stage 1 - Initial Construction**

Topsoil –Six inches (6”) of topsoil is stripped from the pad area and stored for later reclamation; Four (4) inches will be removed on the road.

Work Area - For pad construction, equipment use may extend 40' outside the outer limits of stockpiles, cut slopes and fill slopes.

Pad – The pad is graded large enough for safe drilling operations; the reserve pit excavated and the rat and mouse holes drilled. Finally, the well is spudded (start of drilling) and surface casing is set. In this case, a small diversion will be constructed along the north side of the pad to ensure that runoff from the small drainage does not enter the pad and the reserve pit.

Road – The road is graded to permit reasonable, all-weather access for all drilling, completion and production.

### **Stage 2. - Drilling**

Drill rig setup and drilling (rotary rig) generally begins immediately after pad construction. A BLM petroleum engineer reviews the drilling (8-point) plan including the proposed casing and cementing program.

Geology – As part of APD review, the geological formations to be penetrated during drilling are reviewed by BLM’s geologist(s).

APDs must be assessed for estimated stratigraphic tops, potential for subsurface faulting, abnormal formation pressures, lost circulation potential, shallow gas, potential for poisonous gas such as hydrogen sulfide, bottom hole temperatures, the proposed logging program, aquifers that may be penetrated, groundwater quality issues, and any other relevant geologic factors. This information is vital to proper approval of new APDs.

Casing – Casing is inspected to ensure that it meets or exceeds standard safety factors required for tension, collapse, and burst criteria; it is properly set to isolate contaminants and protect fresh-water aquifers.

Cementing – Cementing depths properly set with material that meets approved specifications.

Blowout Prevention – A blowout preventer is used in all drilling operations; the rated working pressure of the stack and choke manifold is reviewed to ensure it is adequate to handle anticipated bottom hole pressures

Drilling Mud – The drilling fluids are of a density sufficient to contain wellbore pressures, but not so high that they exceed fracture gradients of formations to be encountered.

Hydrogen Sulfide Gas – An H<sub>2</sub>S contingency plan is prepared, approved and followed to control drilling operations so that sour gas does not endanger public safety.

Reserve Pit – The reserve pit is to be properly lined, and adequately designed to contain all drilling fluids. If hydrocarbons enter the pit, they will be removed within 24 hours or the pit will be netted.

The reserve pit would be sized so all anticipated contents can be contained with at least one (1) foot of free board, and so contents can be covered with at least three (3) feet of fill, after the pit is no longer needed.

The pit would be reclaimed as soon as possible after removal of the drilling rig, and after the cuttings have been allowed enough time to dry out.

All reserve and cuttings pits would be lined with an impermeable liner having permeability less than  $10^{-7}$  cm/sec. The liner would be installed so that it would not leak, and would be chemically compatible with all substances that may be put in the pit.

Liners made of any man-made synthetic material would be of sufficient strength and thickness to withstand normal installation and pit use.

Liquid hydrocarbons produced during completion operations would be placed in test tanks on the location. Any release of pit fluids or cuttings would be remediated and reported in compliance with standard practice and regulations.

Management of Waste - All garbage and non-flammable solid waste materials would be contained in a self contained, portable dumpsters or trash cages on site. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash cage would be cleaned up and removed from the well location.

Sewage disposal would be in strict accordance with Wyoming Department of Environmental Quality (WDEQ) rules and regulations regarding sewage treatment and disposal. Portable self-contained chemical toilets will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holdings will be pumped and the contents thereof disposed of in an approved sewage disposal facility.

Hazardous materials, such as flammable or combustible substances and acids/gels, may be needed for well completion/stimulation activities. The opportunity for *Superfund Amendments and Reauthorization Act* (SARA) listed Extremely Hazardous Substances (EHS) at the site would be generally limited to proprietary treating chemicals. All hazardous and EHS and commercial preparations would be handled in an appropriate manner to prevent leaks or spills to the environment.

### **Stage 3. - Production**

After drilling, an oil well must be produced or plugged. If the well is produced the following steps can occur without further approval. Additional permits are required for deepening, sidetracks, and re-completions to review for bursts in the casing, leakage, blowouts or other problems. Wells must be produced or plugged.

Generally operators are given about a year to begin production, but this requirement may be modified if the operator is diligent in solving unique problems relating to the well or if unusual problems are encountered.

Workover/Maintenance - Throughout its useful life, the well requires periodic workover or maintenance to replace or repair sucker rods, pumps, tubing, etc.

Production Stimulation – To increase production the paying formations are fractured under pressure to increase the flow of hydrocarbons to well bore; acids are also injected into carbonate formations to open pore space.

Dirt Work - Unused portions of the pad would be graded to blend with surrounding contours, top soiled and seeded to blend with landscape; the road is graded for permanent use. Mounding would be installed to make facilities generally invisible from west and south and to prevent them from being sky lined from the east.

Production Facilities – Vessels would be enclosed with low berms to contain unintended releases of fluids. Structures would be painted BLM's Covert Green. All temporary facilities would be painted in BLM environmental colors. The height of production facilities would not exceed twelve (12) feet and they would be placed to be generally invisible from lands to west and south.

The pad and road bed would be seeded for production and gravel aggregates, would be color compatible. By regulation the reserve pit may be used for up to ninety days for production without any special approval.

Any berms necessary to contain spills on the outside edge of the pad will be constructed with the remaining topsoil. (Topsoil will not be used to construct fire walls around tank batteries.) The berms shall be at least 24" inches in height and at least six feet in width (3 feet on either side of the apex) and then seeded and mulched. During the life of the well, spills will be promptly cleaned.

Contaminated soil will then be flushed free of hydrocarbons and treated with applications of fertilizer as needed until bioremediation is complete. At abandonment, the topsoil in the berms will be used for any residual reclamation.

Note: Berms are containment structures for containing accidental fluid releases on well sites, treatment sites and storage sites. At sites like this they are generally between 18" and 36" in height – at least large enough to contain 1.1 times the volume of the largest vessel. Mounds are earthen structures with 3:1 to 4:1 rounded, seeded slopes on surfaces exterior to the pad that are used to obscure or even conceal tanks, buildings, pump jacks and other production structures.

#### **Stage 4. Abandonment & Reclamation**

The well would be plugged and abandoned, either after drilling or after some extended term of production.

Reclamation Timetable - As required by Part XII. B. of Onshore Order No. 1, earthwork for interim and final reclamation must be completed within 6 months of well completion or well plugging (weather permitting). All pads, pits, and roads must be reclaimed to a satisfactorily re-vegetated, safe, and stable condition.

Equipment - Pump jack, tanks, buildings and other equipment are removed; pipelines are purged for abandonment or other use. If they are abandoned, the ends are capped.

Cement plugs - Oil or gas horizons, fresh water zones, lost circulation zones, casing stubs, and casing shoes are isolated with cement plugs.

Surface plugs – Surface plugs are placed in all casing that extends to the surface, including any annular space.

Remediation - Oily wastes and other contaminants are either stabilized or removed.

Reclamation – Roads, well pads and production pads graded to the approximate original contours. Because of proper design, concealment mounds will be left as originally constructed and seeded.

## **Additional Conditions of Approval**

The following measures would also be added as conditions of approval:

- Mounding would be installed to provide screening of tanks and treaters so they do not attract attention from distant ridges west and southwest of the well pad. The mounds would be constructed with rounded or warped slopes that are no steeper than 3:1 and that blend with nearby low ridges. They would be top soiled, seeded and mulched so they are natural enough to be left in place when final reclamation is completed.
- The size of the pad would be reduced employing a closed mud system and off pad parking of trailers. This may be done by parking trailers on the graveled area adjacent to the compressor directly adjacent to the Whistle Creek Road and about  $\frac{3}{8}$  mile southeast of the well site. Provisions may also be made to park trailers on native grass areas adjacent to the pad, which have been identified in the surface use plan.
- To facilitate pad size reduction and off pad parking, on the southeast third of the pad and topographically below the 4566 foot contour line, the operator would brush beat sage brush existing within the boundaries of the pad shown on drawing “Drilling Pad & Pit Area for West Branch Unit No. 1 Well”.
- To limit surface disturbance and visual impacts, production facilities would be placed as close as possible to the center of the pad, however all distances necessary for safety and proper functioning of the well would be maintained.
- Topsoil would be spread and the pad would be seeded to within 15 feet of well head, flare pits and treatment facilities.
- All measures discussed above would be implemented with constraints of applicable safety regulations and practices necessary for safe and effective drilling. Where the operator cannot comply with the measures and stay within these constraints, he would proceed by implementing the measures consistent with such constraints, document the change and notify the authorized officer within 24 hours.

## **2.3 ALTERNATIVE B – RELOCATED WELL SITE CLOSER TO WHISTLE CREEK ROAD**

This alternative would be located closer to the existing upgraded Whistle Creek Road (BLM Road 1213) and just north of the existing Marathon Pipeline facility. This Alternative would reduce new surface disturbance by about 1.3 acres due to a shorter access road. This location would also require the four potential stages in the life of an oil or gas well (as described in Alternative A, above), the BMPs (Appendix A), and COAs (Appendix B).

## **2.4 ALTERNATIVE C – NO ACTION**

Under this alternative the action would not be approved; other activities like grazing, wild horse viewing, and hunting would continue along with any associated environmental effects.

The decision to lease is discretionary, but after lease issuance the Secretary of Interior must normally allow enjoyment of rights granted under the lease or buy back the lease. In some cases, an operator's permit may be denied without infringement of lease rights if he is offered another opportunity to economically reach his target.

## **3.0 AFFECTED ENVIRONMENT**

### **3.1 GENERAL SETTING**

The proposed West Branch #1 well project is situated in the central portion of the Bighorn Basin of northwest Wyoming, roughly half way between the towns of Cody and Greybull. The Bighorn Basin is a northwest-southeast trending elliptical basin bounded on the northeast and east sides by the Pryor and Bighorn mountains, on the south side by the Owl Creek and Bridger mountains, on the southwest side by the Washakie Range, on the west side by the Absaroka and Beartooth ranges and is open to the north into Montana.

The entire project area is situated on the Eocene Willwood Formation, a thick deposit of interbedded varicolored siltstones, mudstones, paleosols and sandstones. The Willwood Formation (Willwood Fm.) is several thousand feet thick in this area and overlies the Paleocene Fort Union Formation, which does not crop out within the project area. In the project area, the Willwood Fm. is generally overlain by vegetation and native soils, with a veneer of limestone colluvium weathered from the McCullough Peaks area to the northwest overlying the formation in some areas.

The project area is situated northeast of the McCullough Peaks, encompassing an area of rolling, gently bisected topography west of the main Whistle Creek drainage. The entire proposed drilling operation, from surface to the proposed target of ~13,000 feet, would penetrate sedimentary rocks of Eocene, Paleocene and Cretaceous age.

Sandstones of the Willwood, Fort Union and Lance formations are most likely aquifers at this location. Water quality of these sandstone aquifers, however, is typically very high in total dissolved solids and conductivity.

There are no known locatable or saleable mineral resources in the West Branch #1 well project area. The only leaseable mineral resources in the area are fluid/hydrocarbon minerals that may be trapped in the subsurface. No other leaseable minerals such as coal are located in the project area.

No geologic structures such as faults, anticlines or synclines are visible at the surface in the West Branch project area; however, subsurface geologic structures have been tested in the area via past oil and gas drilling.

Structurally, the project area is situated east of the Oregon Basin thrust fault, a major north-south trending reverse fault that forms a major subsurface boundary along the western portion of the Bighorn Basin. It is also situated at north of the Five Mile anticlinal trend, a fifty (50) mile long northwest-trending structure that courses diagonally across the basin ending north of Worland, Wyoming.

The soils support Gardner's saltbush, bottlebrush squirreltail, Indian rice grass, needle-and-thread grass, winter fat, bluebunch wheatgrass, western wheatgrass, and Wyoming sagebrush. Sagebrush is in scattered, small patches in the vicinity of the well.

Past grazing by horses, livestock, rabbits, and other wildlife has diminished range condition. After the grazing regimen was altered, subsequent drought hindered recovery of the grasses and forbs in the sagebrush patches in the immediate vicinity of the project. These combined effects have been damaging enough to reduce the effectiveness of the sage brush patches adjacent to the project for sage grouse nesting and brood rearing.

Mammals that could occur in the project area include mule deer, antelope, coyote, badger, fox, cottontail, and jackrabbits, as well as a host of other small mammals, songbirds, rodents, and snakes. Potentially occurring raptors would include red tail hawks, Swainson hawks, golden eagles, prairie falcons, and owls. There are no known raptors nesting sites within one mile of the proposed or alternative well location(s).

All aspects of this project would follow timing restrictions set forth in the Cody RMP. Sage grouse nesting, brooding, rearing and wild horse foaling season are between the dates of February 1 and July 31. Pronghorn use this area for wintering and birthing habitat, but the habitat is not considered crucial.

This area has been subjected to extensive surface disturbance in the past as evidenced by the network of roads and trails that have been constructed or created into/within the general area with selected roads and trails remaining open for outdoor recreation vehicles (ORV) use. While most of these roads and trails have never been reclaimed, natural restorative processes have resulted in the re-establishment of vegetation on some of these disturbed roadways.

The proposed project is in the Coon Creek Pasture of the East/West Grazing Allotment.

Well activities and H<sub>2</sub>S gas may impair hunting and other recreational opportunities. Mounding and other enhanced visual resource management limits effects to most recreational uses. With mitigation, the pad would cause a slight additional visual effect. During drilling, noise from proposed operations slightly increases impacts to recreation uses.

The McCullough Peaks WSA is approximately 6 miles to the west of the proposed well and will not be affected by this action.

### 3.2 Critical Elements of the Human Environment and Other Resources Brought Forward for Analysis

Critical elements must be considered in every EA or EIS to comply with existing law, Executive Order or regulation. Elements marked with an asterisk “\*” are either not present or are not substantively affected; the words, “see text”, direct attention to the text where environmental consequences are summarized.

Table 3.

CRITICAL ELEMENT	ALTERNATIVE A PROPOSED ACTION	ALTERNATIVE B RELOCATED WELL	ALTERNATIVE C, NO ACTION
Air Quality	See Text	See Text	See Text
Areas of Critical Environmental Concern	*	*	*
Cultural Resources	See Text	See Text	See Text
Farm Lands (prime or unique)	*	*	*
Flood Plains	*	*	*
Native American Religious Concerns	*	*	*
Threatened or Endangered Species	See Text (Sage Grouse)	See Text (Sage Grouse)	See Text (Sage Grouse)
Wastes, Hazardous or Solid	*	*	*
Water Quality Drinking/Ground	See Text	See Text	See Text
Wetlands/Riparian Zones	*	*	*
Wild and Scenic Rivers	*	*	*
Wilderness	See Text	See Text	See Text
Environmental Justice	*	*	*
Invasive, Non-native Species	See Text	See Text	See Text

Other elements of the human environment that were identified during scoping and analyzed in this EA are wild horses, visual resources, sage grouse, and paleontology.

Table 4.

OTHER RESOURCE CONCERNS IDENTIFIED DURING SCOPING			
Resource Concern/Issue	RMP Reference	RMP Mandate	Stipulation Language
Wild Horses	RMP, p. 38	The wild horse management objective in the McCullough Peaks wild horse herd management area (WHHMA) is to maintain a viable herd that will maintain the free-roaming nature of wild horses in a thriving ecological balance and to provide opportunity for the public to view wild horses.	No Lease Stipulations
Recreation	RMP, Map 10 & App. H (p. 99)	Class IV Visual Resource Management Class (determines amount of modification allowed) – “Any contrast attracts attention and is a dominant feature of the landscape in terms of scale, but should repeat the form, line, color and texture of the characteristic landscape.”	No Lease Stipulations
Sage Grouse Nesting	RMP, p.39 & p.40 and App. B (pp. 59-66)	The timing limitation is specified in Cody Resource Management Plan and necessary to assure protection of nesting success in sage grouse use of nesting habitat.	(1) No surface use from February 1 to July 31; (2) as mapped on the Cody Field Office GIS data base; (3) Protecting sage grouse and raptor nesting sites.
Paleontology	RMP, p.9	Areas in the immediate vicinity of significant cultural and paleontological resource sites, and within 0.25 miles or the visual horizon (whichever is closer) ...are avoidance areas for surface disturbing activities.	CSU (1) Surface occupancy or use may be restricted or prohibited if paleontological sites exist unless paleontological sites are avoided or the operator and surface managing agency arrive at an acceptable plan for mitigation of anticipated impacts; (2) as mapped on the Cody Field Office GIS data base; (3) protecting paleontological values.

### **3.2.1 AIR QUALITY**

The existing Bridger 2A well site and access road (less than one mile to the north of the proposed project area) and the existing Whistle Creek road occupy about 25 acres of existing, un-vegetated surface (See Maps, Appendix D). Additional roads, trails and other developments like pipelines add additional disturbed acreage.

Although air quality in the project area is generally good, some dust is generated by traffic along the Whistle Creek road and other un-vegetated areas. Some of this traffic is related to the Bridger 2A well and some is due to recreation and other uses.

H<sub>2</sub>S Potential: This well may penetrate formations where hydrogen sulfide gas has been encountered; and, accordingly, it will be managed with the presumption that hydrogen gas will be encountered.

### **3.2.2 CULTURAL RESOURCES**

A Class III cultural resource inventory was conducted at the proposed project location and nothing was found as a result. This inventory was completed by a BLM permitted archaeologist who inventoried the project area in a pattern of one hundred foot intervals. There are no known sites of Native American, Cultural, or Religious interest in the project area.

### **3.2.3 SOIL & WATER QUALITY (GROUNDWATER & DRINKING/SURFACE)**

The soils are clayey and loamy and rich in sodium and other salts reflecting the chemical composition of the parent material. Slopes range from 1-5%. There is very little upslope runoff across the pad because the project is close to a drainage divide.

There are no perennial streams in the immediate area and when drainages do run water the leading curve of the hydrograph often has a high concentration of dissolved solids because of evaporation which concentrates salts and other dissolvable solids on the stream banks and channels during low/no flow periods.

The system of dry washes naturally transports fairly high levels of sediments during major storm events. Existing development very slightly accelerates run-off and increases erosion.

### **3.2.4 WILDERNESS**

The project area is more than six miles from the eastern edge of the McCullough Peaks WSA. Inventory of the area and identification as a WSA was completed in 1980. The area surrounding the WSA was considered to not contain wilderness qualities and was not identified as a WSA.

In 1990, the Final Grass Creek/Cody Wilderness EIS considered the suitability or non-suitability of the WSA for inclusion in the National Wilderness Preservation System.

Congress has not yet made a decision on this WSA. Today, the BLM manages the WSA with a designation of NO LEASE with multiple-use on the surrounding lands.

### **3.2.5 INVASIVE NON-NATIVE SPECIES (WEEDS)**

Annual weed species are present in the proposed project area. The primary invasive non-native concern would be downy brome (cheat grass) but white top and Canada thistle may also occur. Black henbane has been observed along the Whistle Creek Road and has been a target for chemical treatments in recent years. Any new disturbance increases the potential for spread of weeds and additional vehicular traffic will also increase the potential for spread of weed seeds.

### **3.2.6 WILD HORSES**

The project is within the McCullough Peaks Wild Horse Herd Management Area, which encompasses approximately 109,814 acres of both federal and non-federal lands. Currently the horse population in the McCullough Peaks HMA is 159 adults and a gather is being planned in 2008. The population objective or “appropriate management level” (AML) for the HMA is to maintain a population of horses ranging between 70 and 140 animals with an average population of approximately 100 wild horses as identified in the RMP (BLM 1990). Most of the horse use is centered in the vicinity of Dry Creek, which receives produced water from the Oregon Basin Oil Field and is the only permanent source of water. Wild horse viewing by the public is one of the main activities in the project area.

### **3.2.7 VISUAL RESOURCE MANAGEMENT**

The proposed well pad, ancillary facilities, and access road, lie in a Class IV visual resource management classification area. Surface disturbance/improvements and/or contrasts must repeat the form, line, color, and texture of the surrounding landscape. The landscape is defined by flats, badlands, ridges, and low rolling hills. Colors range from dark green (almost black) to beige with areas of orange, red, white, gray, and brown soils. Textures are predominately smooth in the flat, grassy areas to lightly coarse in areas with sagebrush to moderately coarse in areas with ridges or broken clusters of rock-capped hills.

The lands in and around the project area are a valued area of public open space in close proximity to Cody and Powell. There has been little permanent energy development except the Oregon Basin oil field and extensive urban development farther to the west and closer to Cody and to the north by Powell.

Many local residents and tourists come to the area to view wild horses and find a landscape of long uninterrupted vistas, colorful rock formations and long rolling ridges accented by McCullough Peaks and the Beartooth, Pryor, Big Horn and Absaroka Mountains in the far distance.

Viewers comprehend the basin rangeland as a large, mostly unoccupied, open space that is directly linked to the Yellowstone Plateau and its flanking mountain ranges.

The visual transitional continuity from open ranges, to foothills, and finally to mountains, is unbroken because, from this landscape the urban development in and around the town of Cody is completely concealed.

The project area, the area of effects and the entire landscape are in a Class IV Visual Resource Management Area. This area's value rests in what it lacks: its lack of contrast affords almost transcendental vistas where bright afternoons can gradually lengthen and darken into the rich, complex evening sunsets. Visitors, who come for the horses, may stay because of the landscape.

### **3.2.8 SAGE GROUSE (T&E and/or SENSITIVE SPECIES)**

The proposed project is within a potential sage grouse nesting area and has timing restrictions associated with Oil and Gas Lease No. WYW-140131. The timing is a listed stipulation that lasts from February 1 to July 31. The well site location does not have outstanding sage grouse habitat values. The nearest lek, more than two miles away, has not been occupied in more than five years. Sage brush of suitable size and density to provide nesting cover for sage grouse occurs only in small patches in areas near the proposed well location. No riparian zones to provide brood rearing habitat for sage grouse are located within 1.5 miles of the well location. Visual surveys of the proposed well location alternatives did not indicate much use of this area by sage grouse, but there is some potential that sage grouse could use habitat in the area for winter forage and cover and some nesting could occur near this site.

The latter date of the lease stipulation date may be relaxed for construction and drilling if nesting and chick rearing is advanced enough to sustain drilling without effect. This is generally the case after June 30<sup>th</sup> for this part of the bighorn basin. Some species of wildlife can live in areas that do not have perennial surface water sources or are mobile enough to travel greater distances to utilize water sources. For the immediate area around the proposed well pad and access road, water availability is a limiting factor for wildlife.

### **3.2.9 PALEONTOLOGY**

The proposed West Branch #1 project is situated in an area dominated by outcrops and sub-crops of the Eocene Willwood Formation, which represents an ancient river floodplain depositional environment. The Willwood Formation is well known as a world-class mammalian fossil deposit and is studied by numerous universities and colleges throughout the United States and the world.

The Willwood Formation contains one of the best known records of Eocene mammalian fauna and has the most detailed bio-stratigraphic resolution, with more than 1,100 fossil mammal localities, and over 100,000 mammal fossils tied to measured sections within the Bighorn Basin.

The proposed project area has been assessed for Potential Fossil Yield Classification (PFYC - as required by BLM Instruction Memorandum 2008-009), and a PFYC classification of 4b has been determined for the well site and access road. This classification is further explained below, as per IM 2008-009:

*Class 4b – These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.*

*Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.*

*Areas of exposed outcrop are smaller than two contiguous acres.*

*Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.*

*Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.*

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 INTRODUCTION**

The Wesco Operating Inc., West Branch #1 gas well, access, and associated facilities for the proposed action and alternatives have been discussed. The following describes the impacts (direct, indirect, and residual) associated with the Proposed Action (Alt. A) and alternatives (Alt. B & C). Cumulative impacts are discussed at the end of the section.

### **4.2 INDIRECT, DIRECT, AND RESIDUAL IMPACTS**

#### **4.2.1 AIR QUALITY**

Alt A: Slight effects may occur from engine emissions (drill rig & vehicles), dust from vehicular traffic and hydrogen sulfide (H<sub>2</sub>S) gas.

Alt B: Indirect, direct, and residual impacts for this alternative are the same as alternative A.

Alt C.: (No Action): The existing good air quality would remain.

#### **4.2.2 CULTURAL RESOURCES**

Alt A: A Class III cultural resources inventory revealed that this project will not affect any known National Register Eligible sites. Adverse affects to cultural resources usually occur when permitted operations damage resources undiscovered in the Class III inventory. A slight risk of inadvertent damage to undiscovered cultural resources exists.

Alt B: This alternative was not inventoried. A Class III cultural resource inventory would be required if this alternative is chosen. For the purposes of this analysis, avoidance of cultural resources would be standard regardless of which alternative is chosen.

Alt C.: (No Action): This alternative would result in no impacts to cultural resources.

#### **4.2.3 SOIL & WATER QUALITY (GROUNDWATER & DRINKING/SURFACE)**

Alt A.: The major potential affect results from a casing or cementing leak that could allow unwanted commingling of water or petroleum products with other aquifers or even surface waters. This type of occurrence is rare, but it did occur recently on a well in the vicinity of Clark, Wyoming. Even though they are not anticipated, improper drilling or completion measures could allow contamination.

The project constitutes about five acres of disturbance that results in removal of five acres worth of vegetation with increased compaction, reduced infiltration of rainfall and accelerated runoff both on and off the project. This increases the ability of runoff to both detach and transport soil particles.

Bare pads and spoil piles cause some unavoidable erosion and sediment loading. The system of dry washes naturally transports fairly high levels of sediment during major storm events. Existing development very slightly accelerates run-off and increases erosion.

Alt B.: The shorter access road would reduce the amount of soil run-off and therefore, reduce the amount of water quality issues.

Alt C.: (No Action): This alternative would not impact groundwater resources.

#### **4.2.4 WILDERNESS**

Alt A.: Since the proposed action is approximately 6 miles east of the eastern border of the McCullough Peaks WSA, there would be no impact.

Alt B.: Since Alternative B would also be approximately 6 miles east of the eastern border of the McCullough Peaks WSA, there would be no impact.

Alt C.: (No Action): There would be no impact to the McCullough Peaks WSA.

#### **4.2.5 INVASIVE, NON-NATIVE SPECIES**

Alt A.: Construction of a new well pad, access road, and facilities, would increase the potential for weeds to become established where there currently are none. Mitigation for weeds is built into the proposed action in that it would require immediate reseeding of the disturbed well pad and replacement of topsoil. The operator would also be responsible for monitoring and controlling any weed infestations that might occur on any disturbed areas related to this APD and the access road. The access road would be kept weed free by monitoring and treatments as needed and would be coordinated with BLM to keep potential weed sources controlled along the Whistle Creek road.

Alt B.: The potential for weed establishment would be less because the access road would be shorter in length so there would be a reduction in total surface disturbance. Additionally, the trailers placed during construction would be placed on the existing Bridger 2A well-site, which reduces the amount of traffic going in and out of the well drilling site. Closer proximity to the main public access road and increased traffic between this well site and the Bridger 2A may increase potential for weed introduction and off-set the reduction in disturbed area. Mitigation would be similar to Alternative A in requiring reclamation of disturbances and requiring operator to be responsible for weed monitoring and control on all associated disturbances related to this APD.

Alt C.: (No Action): The no action alternative would result in no impacts and no introduction of weeds.

For Alternatives A&B: Best Management Practices and Conditions of Approval would include language requiring all equipment being brought into the well site to be cleaned using air pressure or water pressure to remove weed seed and/or plant parts. This would help to insure that no new weeds brought from outside sources would be introduced to disturbed areas.

#### **4.2.6 WILD HORSES**

Alt A.: The well pad would have minimal impacts on wild horses due to the loss of vegetation and access to the well pad area. Increased vehicular traffic in the HMA may cause the chance of injury or fatalities to wild horses. In the past few years, increased traffic as a result of visitors, recreationists, hunters, and oil and gas activities have resulted in horses being made aware of human beings and traffic. Horses would most likely move out of the area once activities begin and traffic increases at the proposed project location. Therefore, no fatalities would be expected from the building of the West Branch well. Seasonal timing restrictions for foaling season would apply.

All aspects of this project would follow timing restrictions set forth in the Cody RMP. Sage grouse nesting, brooding, rearing and wild horse foaling season are between the dates of February 1 and July 31. Pronghorn use this area for wintering and birthing habitat, but the habitat is not considered crucial.

Alt B.: Impacts associated with alternative B, are the same as alternative A.

Alt C.: (No Action): There would be no impacts to wild horses as a result of Alternative C.

#### **4.2.7 VISUAL RESOURCES MANAGEMENT**

Alt A.: The majority of this location would not be visible from the Gilmore Hill overlook (Key Observation Point B). The Gilmore Hill overlook was selected as a Key Observation Point (KOP) due to its popularity as a viewpoint. It is located in T.53 N., R.98 W., Section 27, SE $\frac{1}{4}$  SE $\frac{1}{4}$  and lies about three miles to the south of the proposed and alternate well locations. The proposed access road and about 4/5<sup>th</sup> of the pad would not be visible, even with binoculars. Using low profile tanks and/or locating tanks on the pad in the unseen area would mitigate effects on visual resources as would painting the tanks to blend in with the surrounding landscape. In the long term, the development would have a weak contrast in the form and line of the land, vegetation, and structures and no contrast in the color and texture of the land, vegetation, and structures.

Key Observation Point A lies about  $\frac{1}{2}$  miles south of both the proposed and alternate well locations. It is a high point on the Whistle Creek Road where a vehicle would begin to drop down into the immediate vicinity of the proposed well. From this viewpoint, the proposed well and access road would be visible.

In the long term, the development would have a moderate contrast in the form and line of the land and vegetation and a strong contrast in the form and line of structures.

Topography helps to shield views of the proposed location from the north, south, east, and west. Portions of the pad and road could be slightly visible from high points to the west and the north on the McCullough Peaks Road but this would be a very distant view. Northbound travelers on the Whistle Creek Road, one mile north of the Gilmore Hill overlook, may see portions of the proposed project.

In a Class IV Visual Resource Management area a contrast can attract attention and can be a dominant feature of the landscape in terms of scale but should repeat the form, line, color, and texture of the characteristic landscape.

Alt B.: The majority of this location would not be visible from the Gilmore Hill overlook (KOP B). About 1/5<sup>th</sup> of the graded pad and the spoil pile could be visible in the short term (using binoculars). Using low profile tanks and/or locating tanks on the pad in the unseen area would mitigate effects on visual resources as would painting the tanks to blend in with the surrounding landscape.

In the long term, the development would have a weak contrast in the form and line of the land, vegetation, and structures and no contrast in the color and texture of the land, vegetation, and structures.

From KOP A, the well and access road would be visible. This location is closer to the Whistle Creek Road and would be visible as visitors travel the road in the vicinity for about ½ mile. The proximity of low ridges on the flanks of the pad offers an opportunity to integrate mounding with existing ridges. This replicates the low contrast subtlety of the characteristic landscape. Because of mounding opportunities it may be possible to conceal some of the features on the new pad. In the long term, the development would have a moderate contrast in the form and line of the land and vegetation and a strong contrast in the form and line of structures.

In a Class IV Visual Resource Management area a contrast can attract attention and can be a dominant feature of the landscape in terms of scale but should repeat the form, line, color, and texture of the characteristic landscape.

Alt C.: (No Action): There would be no impact to visual resources from the No Action Alternative.

#### **4.2.8 SAGE GROUSE**

Alt A.: The closest sage grouse lek from the proposed action is 2 miles to the south. This lek has not been occupied in more than five years. This lek is still shown on the data base and because the lease has a sage grouse nesting stipulation, it is still pertinent for discussion. Other occupied leks are located within 3-5 miles to the south and east of the proposed well site. The proposed project area lacks dependable water making it less desirable habitat for grouse. Furthermore the sage stands in the vicinity of the West Branch #1 well lack the understory needed for good nesting habitat. Accordingly, potential nesting habitat is marginal and is expected to remain so irrespective of any short term plans for energy development. Some sage grouse use of the well area is possible, however much better quality habitat exists south and east of the site and most grouse use would occur in these preferred habitat areas. Including the seasonal timing stipulation to limit activity during potential nesting periods should minimize potential for activities to impact sage grouse as a result of the proposed action.

All aspects of this project would follow timing restrictions set forth in the Cody RMP. Sage grouse nesting, brooding, rearing and wild horse foaling season are between the dates of February 1 and July 31. Pronghorn use this area for wintering and birthing habitat, but the habitat is not considered crucial.

Alt B.: The impact to sage grouse from this alternative would be the same as from Alternative A, the proposed action. Seasonal timing restrictions would apply at this location as well and less surface disturbance (shorter access road) should reduce habitat alteration potential.

Alt C.: (No Action): There would be no impact to sage grouse as a result of the no action alternative.

## 4.2.9 PALEONTOLOGY

Alt A.: The Potential Fossil Yield Classification for this area has been determined to be a 4b. Because fossil-bearing bedrock in the area is covered with a substantial amount of top and subsoil, a paleontological survey prior to surface disturbing activities is not requested. The presence of an on-site paleontologist to monitor for potential significant paleontological resources during well pad preparation and road building for this project is also determined not to be necessary; however, stipulations to protect any scientifically significant paleontological resources would be attached to any approval of this well.

Alt B.: Under this alternative, the environmental consequences would be the same as under Alternative A – the Proposed Action.

Alt C.: (No Action): There would be no impact to paleontological resources under this alternative.

## 4.3 CUMULATIVE IMPACTS ANALYSIS

Cumulative impacts are those that would result from the incremental impacts of the Proposed Action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. These reasonably foreseeable future actions refer to future action projections, or estimates, of what is likely to take place when a given proposed action is implemented.

They are not part of the proposed action, but are projections being made so that future impacts, cumulative and otherwise, can be estimated as required by NEPA.

Cumulative impacts are the total effect on a given resource or ecosystem, of all actions taken or proposed. The document entitled “Considering Cumulative Effects under the National Environmental Quality Act” dated in January 1997, prepared by the Council on Environmental Quality (CEQ), was consulted during preparation of this section. The following discussion was derived from that document as it pertains to this analysis.

***“Cumulative effects result from spatial (geographic) and temporal (time) crowding of environmental perturbations (CEQ, 1997 – Chapter 1, page 7). The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effect of the first perturbation.”***

**Past, present and reasonably foreseeable future actions are analyzed in this section:**

Past – Grazing, wild horses, rights-of-way, recreation, and oil and gas exploration are just some of the uses in the project area. Reservoirs and produced water in Dry Creek have provided water sources for all wildlife including, native and non-native ungulates and has enhanced grazing distribution. There are existing roads and trails causing some erosion and sediment loading.

At least one pipeline right-of-way (ROW) crosses through the project area. The pipeline ROW is 50-feet wide and is issued to Marathon Oil, Co. A pipeline access facility is located east of the proposed well and is maintained and fenced.

The Whistle Creek Road is a crowned and ditched road that connects Highway 14, 16, 20 and Highway 14A.

The completed Bill Barrett Corporation, Red Point 3-D Seismic prospect added some temporary effects to the watershed, sage grouse and wild horses.

Special recreation use permits (SRPs) typically consist of guides and outfitters, wild horse tours, photographers, and horse riding events.

The open space values of the area, wild horse viewing opportunities, increased population growth of the surrounding communities and “offshoot” use, associated with Yellowstone National Park and adjacent areas, have resulted in increased recreation growth of this area. Road and trail access has facilitated viewing opportunities, in the Red Point area, to view wild horses.

Nearly all of the project area and surroundings have existing oil and gas leases present. Oil and gas development, in the form of an existing well re-entry, a few plugged wells, and a pipeline transportation system, have added an industrial component to the landscape in the few areas. Bill Barrett Corporation had proposed two wells in the summer of 2006, but withdrew them. A forty-four square mile seismic exploration project was completed in the fall of 2007.

Combined, these effects have caused some changes to the area, but in general this area consists of large tracts of BLM managed public land with environments and natural features that have received little modification by human activities (except for numerous roads and trails).

Present – The recently drilled Bridger Trail 2A adds about three and one-half acres of new disturbance. In addition, the Bill Barrett Corporation has applied for seven (7) Notices of Staking, approximately 6 miles southwest of the project area. These wells pads are projected to be approximately 5.5 acres each, with associated access roads and a pipeline transportation system.

Future – The recently completed McCullough Peaks Travel Management Plan, which has identified roads and trails for abandonment and the need to stabilize existing roads and trails, would reduce some of the erosion and sediment loss in the future. The West Branch Exploratory Unit, the Red Point 3-D Seismic prospect, and, the seven (7) proposed wells by Bill Barrett Corporation all suggest an interest in developing oil and gas resources in the general area.

Most of the land in the area has current oil and gas leases in place. Drilling success could lead to development in one or more places. Additional infrastructure for energy development would also be needed (e.g. transportation pipelines, electricity, etc.). At this point in time, too little is known of the nature and extent of any potential production to make valid predictions regarding future field development. An attempt to project a development scenario would merely be an exercise in unfounded speculation.

## **5.0 MITIGATION MEASURES**

All mitigation measures have been incorporated in the proposed action or alternatives. For clarification they are listed here.

Alt A: COAs and BMPs would be employed

Alt B: The same as Alternative A.

Alt C: No discussion needed.

## **5.1 MONITORING AND/OR COMPLIANCE**

This well would be listed as a high priority in the Bureau of Land Management's Automated Fluid Minerals Support System (AFMSS). Since the operator is under outcome based conditions of approval, inspections would be completed before interim reclamation is accepted and stated objective met. The recreation and wild horse programs would continue to monitor opinions and concerns of public land users.

## **6.0 CONSULTATION AND COORDINATION**

A public scoping session was not held, but this document was posted for a 30-day comment period on the BLM NEPA website. The comment period began July 26, 2007 and ended on August 26, 2007.

Public comments have been incorporated into this analysis or discussed in the Decision Record and Finding of No Significant Impact (DR/FONSI).

APDs are made available to the public for comment for 30 days from the date that they were received. The Wyoming Game and Fish Department was given an opportunity to comment on this project. The BLM contacted the Wyoming State Historic Preservation Officer (SHPO) in items related to cultural resources.

## 6.1 LIST OF PREPARERS

This document was prepared by Vic Seefeldt. Reviewers are shown below.

**Table 5.**

Staff Reviewer, Resource Concerns	Signature (Reviewed)	Date
Mike Bies, Cultural/Historic	Kierson Crume (for)	10- Dec- 07
Dennis Saville, Wildlife/T&E		
Ann Perkins, NEPA Coordinator		
Shirley Bye-Jech, Visual Resource Management		
David Seward, Natural Resource Specialist		
Tricia Hatle, Range Mgmt Specialist		
Jerry Jech, Watershed		
Gretchen Hurley, Geologist (& Paleontology)		
Mary D'Aversa, Assistant Field Manager		

**APPENDIX A**  
**SUMMARY OF BEST MANAGEMENT PRACTICES (BMPs) APPLIED**  
**TO WEST BRANCH #1**

**PART I – SELECT THE PROPER SITE SELECTION**

Proper site selection can be the most important tool for reducing visual contrast. Where practical, avoid construction in highly scenic areas

- A. Move facilities – Move facilities further from key observation points to reduce their apparent size. This may necessitate moving facilities from the shoulder of roads and trails, and placing them in the background of the view.
- B. Screening and Hiding - Use natural or artificial features such as topography, vegetation, or an artificial berm to help screen facilities. Locate facilities in a swale, around the bend, behind a ridge, or create a natural looking, vegetated berm.

**PART II - REDUCE UNNECESSARY DISTURBANCE**

The second step to minimizing visual contrast is through the reduction of soil and vegetative disturbance. This is done by limiting features to those that are absolutely necessary and restricting the size of each feature to what is absolutely necessary. They should avoid steep areas limit surface disturbance and facilitate interim and final reclamation. Riparian areas and buffers, sage brush suitable for successful nesting, prairie dog burrows and similar high-value micro environments should be avoided.

- A. Avoid locating roads and pipelines on steep slopes. A linear road is highly visible because of the large cuts and fills which result from constructing a road on a steep, exposed slope. Avoid straight lines and follow the contours of the land to reduce earthwork/disturbance and visual effects.
- B. Avoid locating well pads on or adjacent steep slopes, where they result large cut slopes and long, side-cast fill slopes that are nearly impossible to reclaim and will be permanently visible against the natural landscape.
- C. Construct the minimum road necessary. The BLM 9113 Roads Manual states – “Bureau roads must be designed to an appropriate standard no higher than necessary to accommodate their intended functions...” But, recognize that an under designed road can my result in unsafe working conditions and increased environmental impact.
- D. Begin interim reclamation immediately after construction by returning topsoil to cuts, fills, and borrow ditches and reseeding.

- E. Reduce the pad size and minimize topsoil removal by brush-beating, mowing the well location, and/or parking on the grass for drilling and production operations. Only excavate topsoil and subsoil where it is absolutely necessary, such as for the reserve and mud pits or for leveling the drill rig.
- F. Employ low profile structures to limit or eliminate their visibility from identified Key Observation Points.
- G. Employ ultra-low structures may be suitable to protect scenic quality in very sensitive areas. In some cases, the solution may be to bury the well head.
- H. For production, consider all reasonable practices to minimize the disturbed areas of producing well locations through interim reclamation. Interim reclamation is critical to reducing the visual impact of well production, which can run from several to many years. Interim reclamation that is done well will greatly reduce visual contrast. Paradigm shift: It is OK to drive, park, and set up a work-over rig on restored vegetation. Just fix it up when you leave.
  - 1. Plan for interim reclamation by placing production facilities on the well location to allow maximum room for re-contouring of the well location. Production facilities should typically be placed near the center of the well location while allowing for separation distances between facilities to assure safety.
  - 2. Employ the following or similar interim reclamation steps:
    - a. Leave enough flat area to enable setting up the work-over rig and re-contour everything else to the original, natural contour
    - b. Re-spread stockpiled topsoil so that vegetation extends up to, or within 10 to 15 feet of the production facilities; and gravel a drive-around or load-out area, only if necessary.
    - c. Consider seeding the drive-around and access spur road. (Re-spreading and seeding topsoil allows it to maintain its long-term viability for future use. The rapid reapplication of topsoil that has only been stored only a short period of time encourages the re-establishment of native plants from viable seed in the soil.)
    - d. Encourage the re-establishment of native vegetation. Proper interim reclamation can lead to the re-establishment of local, native vegetation resulting in the “restoration” of the landscape to nearly its original character.

### PART III – CHOOSE THE BEST COLOR

Match colors to the entire landscape - do not select colors to simply match the exposed soil. Consider the overall dominant color in the landscape, especially when the background consists primarily of vegetation, not soil. To minimize adverse visual contrast, work with affected parties to ensure proper color selection prior to the submission and approval of the permit application.

- A. Match colors in the landscape by considering the overall dominant color in the landscape, especially when the background consists primarily of vegetation, not soil. Avoid the use of “BLM Desert Tan” or “Desert Brown” because most landscapes are not this light.
- B. Choose the appropriate color that allows production equipment to blend with the background. But in highly scenic areas frequently viewed by the public, the proper color choice becomes even more critical. It is not necessary to experiment with custom mixed colors. The BLM has done that for you with the creation of two color charts. When choosing a color consider the following:
  - 1. Identify key observation points from where equipment will be seen. Determine the predominant color of the background landscape. (Hold the chart up to the background at arm’s length to help with color selection.)
  - 2. Consider primary seasons of use, but never paint white to match snow.
  - 3. Consider the most common lighting conditions: front vs. back-lighted.
- C. Select the appropriate color shade, which will usually be one or two shades darker than the predominant background color, typically a vegetated background. Squinting can help determine the best overall color choice. Use semi-gloss paint, because it resists weathering and staining.
- D. Ensure complete color conformance. Pay attention minor items like white well signs or silver electrical boxes that will remain highly visible and attract attention to the entire site.

#### PART IV – REGRADE AND SEED THE PAD AND ROAD FOR FINAL RECLAMATION

Always consider the long-term impacts of oil and gas production. Imagine what the former road and well location look like 3 years or even 300 years from abandonment. Do not allow any permanent scars. Oil and gas development is a temporary use of the land and its impacts should be temporary as well.

**APPENDIX B**

**CONDITIONS OF APPROVAL**

## APPENDIX B - CONDITIONS OF APPROVAL

EA PROJECT DATA					
<b>Project Type</b>	Well, Pad, Roads, Buried Lines			<b>EA Number</b>	WY-020-E07-064
<b>Proposed Action</b>	West Branch #1 Well and Access Road				
<b>Lease Number(s)</b>	WYW-140131				
<b>Applicant</b>	Wesco Operating Inc.	<b>Author</b>	Seefeldt	<b>Date</b>	May 22, 2007
<b>Case Number</b>	<b>Well Number &amp; Name</b>	<b>Township</b>	<b>Range</b>	<b>Section(s)</b>	
CA7-013	West Branch #1	53N	98W	11	

### GENERAL INFORMATION

THIS APD APPROVAL IS VALID FOR 2 YEARS AS LONG AS THE LEASE DOES NOT EXPIRE DURING THAT TIME. AN APPROVED APD MAY BE EXTENDED FOR UP TO 2 YEARS AT THE DISCRETION OF THE AUTHORIZED OFFICER, IF A WRITTEN REQUEST IS FILED BEFORE THE 2 YEAR EXPIRATION DATE.

It is the responsibility of the operator to ensure that ALL surface disturbing activities and operations comply with the following: 43 CFR 3101.1-2; 3101.1-3; 43 CFR 3160, Onshore Oil and Gas Orders Nos. 1, 2, 6 & 7, Notice to Lessees (NTL's) 2-B, 3-A, 4-A, and the BLM-USGS-USFS brochure, "Surface Operating Standards for Oil and Gas Exploration and Development" (Gold Book) and appropriate, current State of Wyoming standards regarding storm water discharge requirements of Section 401 Water Quality Division of the Wyoming Department of Environmental Quality, Section 404 of the Clean Water Act with the U.S. Army Corps of Engineers and any/all county, state and federal regulations that may be applicable.

**Point Source Primary Contacts:**

*Leah Kraft, Permitting Supervisor*  
307-777-7093

[lkraft@state.wy.us](mailto:lkraft@state.wy.us)

[http://deq.state.wy.us/wqd/WYPDES\\_Permitting/index.asp](http://deq.state.wy.us/wqd/WYPDES_Permitting/index.asp)

*Brian Lovett, Inspection/Compliance Supervisor*  
307-777-5630

[blovet@state.wy.us](mailto:blovet@state.wy.us)

**Non-point Source Primary Contact:**

*Barb Sahl, Program Coordinator*  
307-777-7570

[bsahl@state.wy.us](mailto:bsahl@state.wy.us)

[http://deq.state.wy.us/wqd/WYPDES\\_Permitting/WYPDES\\_Storm\\_Water/stormwater.asp](http://deq.state.wy.us/wqd/WYPDES_Permitting/WYPDES_Storm_Water/stormwater.asp)

**WY DEQ Water Quality Division Contact Information:**

DEQ/Water Quality Division  
122 West 25th Street  
Herschler Building, 4th Floor-West  
Cheyenne, Wyoming 82001  
307-777-7781

<http://deq.state.wy.us/wqd/>

**Wyoming USACE Contact Information:**

US Army Corps of Engineers  
Wyoming Regulatory Office  
2232 Dell Range Boulevard, Suite 210  
Cheyenne, Wyoming 82009-4942  
Telephone: (307) 772-2300, Fax: (307) 772-2920

Program Manager: Matthew A. Bilodeau  
Senior Project Manager: Chandler J. Peter  
Other Project Managers: Michael A. Burgan, Thomas B. Johnson  
<https://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm>

To protect sage grouse nesting, activities related to drilling and construction on the pad, pipeline, etc. will not occur between March 1 and July 31 without written approval of the authorized officer.

If additional wells are drilled or a field is developed in this area, the authorized officer reserves the right to require relocation of some or all production facilities on the West Branch #1 pad to a central location so that cumulative visual effects are minimized.

RESOURCE CONCERN	LEASE STIPULATION
Sage Grouse and Raptor nesting sites	No surface use from Feb. 1 to July 31 to protect sage grouse and raptor nesting sites (Operations and maintenance excluded). If sage grouse activities warrant, may be excepted to allow construction and drilling to begin on July 1.

**1. EXISTING ROADS**

All traffic will be confined to new and existing lease roads and ways. Existing lease roads will be maintained, bladed and graveled to keep them in a good usable condition for safe vehicular traffic and free of surface erosion. Culverts, ditches, water turnouts and other features will be fully functional and maintained.

Snow will be plowed only when necessary to keep roads open for orderly operation of the field. Generally, unrestricted public access will be allowed on the lease roads, however, The operator may restrict the public and its own employees when essential to protect them from hydrogen sulfide as specified in Onshore Order No. 6 and other significant dangers. The operator may also (**with BLM concurrence**) post trails to restrict the public and its own employees on trails when other access is available.

**2. ACCESS ROADS TO BE CONSTRUCTED AND RECONSTRUCTED**

Access During Construction - Construction-related traffic will be restricted to the disturbed area needed for construction of the roadway.

CLEARING AND GRADING

Suitable topsoil will be stripped to an average depth of six inches and stockpiled for subsequent application on the in-slopes and back slopes of ditches; **or** roads without stockpiled topsoil receive special reclamation procedures of mulching, seeding, and fertilization at final abandonment in order to make up for lost topsoil. The seeding mixture to be utilized for each field is shown in Point 10.

## DRAINAGE

Culverts, ditches and other drainage features will be designed to handle anticipated runoff events, i.e. 25 year event. Surface cover, slope, length of drainage, return times, channel cross sections and gradients will be considered as appropriate in the hydraulic and engineering analysis of upstream areas to determine the amount of runoff during the life of the access road. To assure proper drainage, the normal standard road will be ditched and crowned and constructed to the following specifications:

<b>WIDTH OF RUNNING SURFACE</b>	16-18 Feet
<b>DISTURBED AREA (DITCH TO DITCH)</b>	33 Feet
<b>DEPTH OF DITCHES</b>	1 Foot Minimum

Culverts will be used for drainage crossings, unless debris problems, low runoff volume, or traffic volume indicate the use of drainage dips. Culvert installation will comply with general discussions in the following paragraphs.

In most cases culverts will be 18 inches in diameter. Backfill will be thoroughly compacted, and minimum cover over culverts will be 12 inches or ½ the culvert diameter, whichever is greater.

Culverts used as laterals to provide cross drainage between natural drainage.. They will be skewed to form an entrance angle of 45 degrees to 60 degrees with the side ditch, and have a gradient equal to or slightly greater than the approach ditch gradient. Suitable ditch blocks will be constructed below culvert inlets.

Culverts in drainage will be placed on firm, uniform beds that have been shaped to accept them, aligned with the natural channel and set at a gradient that maintains the natural drainage velocity so sedimentation or erosion is not increased.

The inlets and outlets of culverts will be modified as necessary to protect from debris, and limit excessive channel scour and erosion. The modifications may include racks, cribs, raisers, drop inlets, downspout, energy dissipaters, flared ends, headwalls, or rip-rap.

The newly constructed sub-grade will be bladed and shaped as necessary to prepare a safe, stable roadbed, compacted, and then graveled if necessary for safety, drainage or stability.

### **3. LOCATION OF EXISTING WELLS**

Not applicable.

### **4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES**

Any new permanent production structures including signs and other small features will be painted in BLM Supplemental color Covert Green (18-0617-TPX). This applies to facilities at the wellhead and the offsite production facilities. The exception to these painting requirements will apply only to those items requiring Safety Colors.

Temporary production vessels and facilities that are painted red, yellow, white, blue, silver, black or other highly contrasting colors will not be placed on the pad. Temporary production facilities

will be painted earth tone tans, greens, browns or other earth tones that blend into the surrounding landscape.

The height of production facilities will not exceed twelve (12) feet and they would be placed to be generally invisible from lands to west and south.

The pad and road bed will be seeded for production. Before applying aggregates, the operator will consult with the authorized officer to ensure that the least visually impacting, economically available aggregate will be employed. In general, sources less than fifty (50) miles from the project area will be considered economical.

The following conditions of approval will be applied to the well pad as appropriate for drilling and production:

Mounding will be installed to provide screening of tanks and treaters so they do not attract attention from distant ridges west and southwest of the well pad. The mounds will be constructed with rounded or warped slopes that are no steeper than 3:1 and that blend with nearby low ridges. They will be top soiled, seeded and mulched so they are natural enough to be left in place when final reclamation is completed.

The size of the pad will be reduced employing a closed mud system and off pad parking of trailers. This may be done by parking trailers on the graveled area adjacent to the compressor directly adjacent to the Whistle Creek Road and about 3/8 mile southeast of the well site. Provisions may also be made to park trailers on native grass areas adjacent to the pad, which have been identified in the surface use plan.

To facilitate pad size reduction and off pad parking, on the southeast third of the pad and topographically below the 4566 foot contour line, the operator will brush beat sage brush existing within the boundaries of the pad shown on drawing "Drilling Pad & Pit Area for West Branch Unit No. #1 Well".

To limit surface disturbance and visual impacts, production facilities will be placed as close as possible to the center of the pad, however all distances necessary for safety and proper functioning of the well will be maintained.

Topsoil will be spread and the pad will be seeded to within 15 feet of well head, flare pits and treatment facilities.

All measures discussed above will be implemented with constraints of applicable safety regulations and practices necessary for safe and effective drilling. Where the operator cannot comply with the measures and stay within these constraints, he will proceed by implementing the measures consistent with such constraints, document the change and notify the authorized officer within 24 hours.

**5. LOCATION AND TYPE OF WATER SUPPLY**

Drilling water will be transported by truck.

**6. SOURCE OF CONSTRUCTION MATERIALS**

Onsite materials will be used for building locations and roads.

**7. METHODS FOR HANDLING WASTE DISPOSAL**

Cuttings and drilling fluids will be disposed of in the reserve pits. Produced water and oil will be contained in steel tanks then hauled to and treated at the field battery. The reserve pit may be used for disposal of produced water for up to 90 days without additional permits as outlined in Onshore Order No. 7.

**A) CUTTINGS AND RESERVE PIT FLUIDS - RESERVE PITS**

The reserve pit will be lined with an impermeable liner having a permeability less than  $10^{-7}$  cm/sec. The liner will be installed so that it will not leak and will be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material will be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand will be used prior to installing the liner.

Following rig release, reserve pits will be fenced with a properly braced “sheep tight” fencing four-strand barbed wire fence built that keep out livestock. Should there be oil on any pit, the oil will be removed or overhead flagging will be installed until the oil can be removed.

Final backfilling will comply with Point 10.

**B) WASTE AND SANITATION**

1) The operator will comply with all State and Local laws and regulations pertaining to disposal of human and solid waste. All Fields will be maintained in a sanitary condition at all times. Garbage and other waste material will be gathered and disposed of in an approved sanitary landfill.

2) Hazardous substances specifically listed as hazardous waste or demonstrating a character of a hazardous waste (see 40 CFR Part 261 - Identification and Listing of Hazardous Wastes; and 40 CFR Part 355 - Emergency Planning Notification) will not be improperly used, produced, stored, transported or disposed of in permitted (lease, unit) operations.

3) The operator and its contractor(s) maintain a file, per 29 CFR 1910.1200 (g) containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances which are used during the course of construction, drilling completion, and production operations for this project. Hazardous materials (substances) which may be found at the site may include drilling mud and cementing products which are primarily inhalation hazards, fuels (flammable and/or combustible), materials that may be necessary for well completion/stimulation activities such as flammable or combustible substances and acids/gels (corrosives). The opportunity for Superfund Amendments and Reauthorization Act (SARA) listed Extremely Hazardous Substances (EHS) at the site is generally limited to proprietary treating chemicals. All hazardous and Extremely Hazardous Substances and commercial preparations will be handled in an appropriate manner to minimize the potential for leaks or spills to the environment.

**8. ANCILLARY FACILITIES**

Ancillary facilities will be temporary. No camps or airstrips will be constructed.

9. **WELL SITE LAYOUT & USE**

The location of mud tanks, reserve pit, incinerator, pipe racks, living facilities, topsoil and spoil piles will be shown as on Exhibit "G" All drill pads will be designed to comply with safety regulations for a frac using volatile fluids.

Before any dirt work or pit construction begins, a minimum of six inches of topsoil will be removed from the location and stockpiled. Topsoil will be scraped from all areas here where dirt work is necessary except wheel pits and other small areas less than 40 square feet in size. It will not be buried under fill material.

During construction and restoration, surface use and disturbance will not extend more than 40' beyond the drill pad. Traffic may also extend up to 40' beyond the drill pad for rigging up and rigging down.

10. **PLANS FOR RECLAMATION OF THE SURFACE**

All equipment, hardware, waste or debris will be removed prior to any reclamation or stabilization actions.

For production, unused areas around well pads, unused pits, and any other surfaces not occupied for field use, will be graded to form stable slopes, blending with the natural terrain. Water bars or other erosional control structures will be built as needed, the areas will be ripped, the topsoil replaced and the areas seeded.

A) **FINAL RECONTOURING AND ABANDONMENT**

The following practices will be employed for final abandonment.

- 1) Pipelines will be purged of all fluids; the fluids will be disposed in approved field facilities.
- 2) Before recontouring takes place, the stockpiled topsoil and vegetative material will be scraped from cut and fill slopes of roads and pads where stable vegetation has occurred. It will be stockpiled for final distribution after the area is recontoured. The point is **NOT** to bury good topsoil that has been previously placed on pad edges or road back slopes.
- 3) Before well pads and battery areas are recontoured, oily surface material and cuttings (provided they are not regulated under RCRA, CERCLA, or other applicable regulations) should be worked and broken into aggregates of one inch in diameter or smaller, then treated with at least 200 lbs. of ammonium nitrate (33-0-0)/ acre, working it into the material. This should be conducted before available topsoil and vegetation is spread on the surface for seed bed preparation. Additional fertilizer may be needed to establish the desired plant growth.
- 4) All disturbed areas (roads, pads, flowline, etc.) will be graded to the original approximate contour. This practice may be modified in situations where an area would be far more stable in the long term if normal reclamation-recontouring practices were not followed; or where an area is stable and the costs of recontouring would prove excessive. Modifications will be undertaken in consultation with the BLM.
- 5) Drainages will be reclaimed to approximate the original bank configuration, stream bottom width, and channel gradient.

B) PITS

Burn pits, reserve pits and any other pits will be filled, leveled or sloped to resemble adjacent terrain, when no longer needed. Cuttings and drilling muds will be allowed to dry, and then, all contents including liners will be covered with at least three feet of uncontaminated soils.

C) SEEDING AND SOIL AMENDMENTS

- 1) All disturbed areas (linear disturbances less than one foot in width exempted) will be seeded according to seed mix shown below:

<b>SEED VARIETY*</b>	<b>LBS/A.</b>
'Secar' Bluebunch Wheatgrass	2
Western Wheatgrass	2
Needle and Thread grass	2
Indian Ricegrass	2
Bottlebrush Squartail	2
Sweet Vetch	.5
Cicer Milk vetch	.5
Green Rabbit Brush	1
Winterfat	2
Gardner's Saltbush	1
The operator will include at least one pound of two more of the species shown in this box. (Globe Mallow, Yarrow, Rocky Mountain Penstemon, Evening Primrose, Indian Paintbrush, Rocky Mountain Bee Plant, Dotted Gay Feather)	1
<b>Totals</b>	<b>16</b>

Fertilizer (16-20-0 or similar rating) will be spread on all seeded areas at a rate of 200 lbs/acre.

- 2) Preparation of the seedbed, application of seed and any soil amendment, and coverage of the seed is critical to successful re-vegetation. Unless otherwise approved, the following cultural methods will be followed:
- a) The site may be ripped or otherwise scarified up to a maximum depth of 18" on 24" centers to prepare a rough seedbed and eliminate compacted soils. The objective is to leave an extremely rough surface for maximum snow and rainfall retention, as well as ridges to protect the surface from wind erosion.
  - b) Seed will be applied together by mechanical broadcasting to assure even coverage over the entire area to be reclaimed. The seed will be covered by harrowing, discing, or any other mechanical method of scarifying that assures seed coverage after seeding. (Note: Seeding can occur before final scarifying to leave a rough surface and provide seed coverage).
  - c) After the first year, seeded areas will be fertilized if seedling establishment is sparse.
  - d) Soil pitting, imprinting, or similar methods of seeding can be used, but must have prior approval from the AO.
  - e) All seeded areas will be mulched with native hay, grass hay or straw that is sufficiently free of weeds to meet Park County noxious weed standards. Mulch will be applied evenly at a rate of 2,000 lbs./A. Where possible, it will be anchored by means of a disc set straight at a depth of 2-3

inches, but on steep slopes, where mechanical spreaders don't work, it will be applied by hand and anchored by other suitable means.

3) As much as possible, seeding will be take place in fall between the first of September and the fifteenth of October, or in spring from the time the ground is workable to the first of May. It will be repeated if a satisfactory stand is not obtained.

#### D) WEED MANAGEMENT

The operator will be responsible for prevention and control of noxious weeds and weeds of concern on all areas of surface disturbance associated with this project (well locations, roads, water management facilities, etc.). Use of pesticides shall comply with the applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of Interior. Prior to the use of pesticides on public land, the holder shall obtain from the BLM authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer to such use.

To manage noxious weeds the operator will have key a employee certified as applicators or retain theses services from a certified professional.

Before bringing construction equipment into the oil field the operator will spray it to remove weed seeds. This may be done with high pressure air or by a water power wash at an appropriate facility. The spraying will employ a place and method that ensures that the detached weed seeds are contained so they do not infest new areas. Before construction begins, weeds will be identified in the project area and sprayed. Following construction, the operator will closely monitor all disturbed areas and will control weeds as necessary as part of the annual weed spraying and management program. Monitoring and treatment, as needed, will continue for at least three seasons. Noxious weeds will be controlled in accordance with the operator's weed management program that was established in compliance with EPA, BLM, State, and local pesticide requirements. For BLM requirements, contact Rance Neighbors at 307/347-5148 or Dennis Saville at 307/578-5926.

#### **11. SURFACE OWNERSHIP**

The surface and mineral estates are federal.

#### **12. OTHER INFORMATION**

A) New construction will not take place in wet and unstable soils. Routine maintenance off prepared road and pad surfaces will take place when soils are dry enough to prevent rutting or serious erosion. Unplanned construction to control spills, fires, and other undesirable events will occur at any time. Inadvertent surface damage will be fixed within a reasonable time.

The operator will inspect the construction area for the presence of utility facilities both surface and subsurface, and notify the Wyoming One Call System 1-800-849-2476 before construction activities begin. The operator will use extra safety precautions when working near or around buried lines, power lines, power poles, underground cables, **or other utility installations.**

B) Normal day-to-day routine operations shown below do not require written approval from the BLM:

- 1) Routine maintenance of existing lease roads which does not widen or otherwise extend existing surface disturbance.
- 2) Repairing or replacing existing culverts (which does not require additional surface disturbance, or is limited to active stream channels and does not include terraces or cut banks).
- 3) Repair or replacement of 500' or less of existing pipelines which does not require additional surface disturbance outside the original right-of-way.

### C) CULTURAL RESOURCES

Cultural Resources, Standard Stipulation Wesco is responsible for informing all persons associated with this project that they may be subject to prosecution for knowingly damaging, altering, excavating or removing any archaeological, historical, or vertebrate fossil objects or site. If archaeological, historical, Native American, or vertebrate fossil materials are discovered, Wesco is to suspend all operations that further disturb such materials and immediately contact the Authorized Officer. Operations are not to resume until written authorization to proceed is issued by the Authorized Officer (AO).

The authorized officer will evaluate, or will have evaluated such discoveries not later than five working days after being notified, and will determine what action shall be taken with respect to such discoveries. The decision as to the appropriate measures to mitigate adverse effects to significant cultural or Paleontological resources will be made by the authorized officer after consulting with the operator/holder.

The operator/holder is responsible for the cost of any investigations necessary for the evaluation, and any mitigative measures required by the Authorized Officer. The AO will provide technical and procedural guidelines for the conduct of evaluation and mitigation. Upon verification from the AO that the required evaluation and/or mitigation has been completed, the operator will be allowed to resume operations.

Native American Resources The area under consideration contains no known areas or locations of religious or cultural concern to Native Americans. If such areas are subsequently identified or become known through the Native American notification or consultation process they would be considered during the implementation phase. The BLM would take no action that would adversely affect these areas or locations without consultation with the appropriate Native Americans.

Human Remains If human remains are discovered or suspected the operator/holder shall suspend operations immediately, physically guard the area, and notify BLM immediately.

### **Paleontological Resources Protection Stipulations**

1. **Collecting:** The project proponent/operator is responsible for informing all persons associated with this project including employees, contractors and subcontractors under their direction that they shall be subject to prosecution for damaging, altering, excavating or removing any vertebrate fossils or other scientifically significant paleontological resources from the project area. Collection of vertebrate fossils (bones, teeth, turtle shells) or other scientifically significant

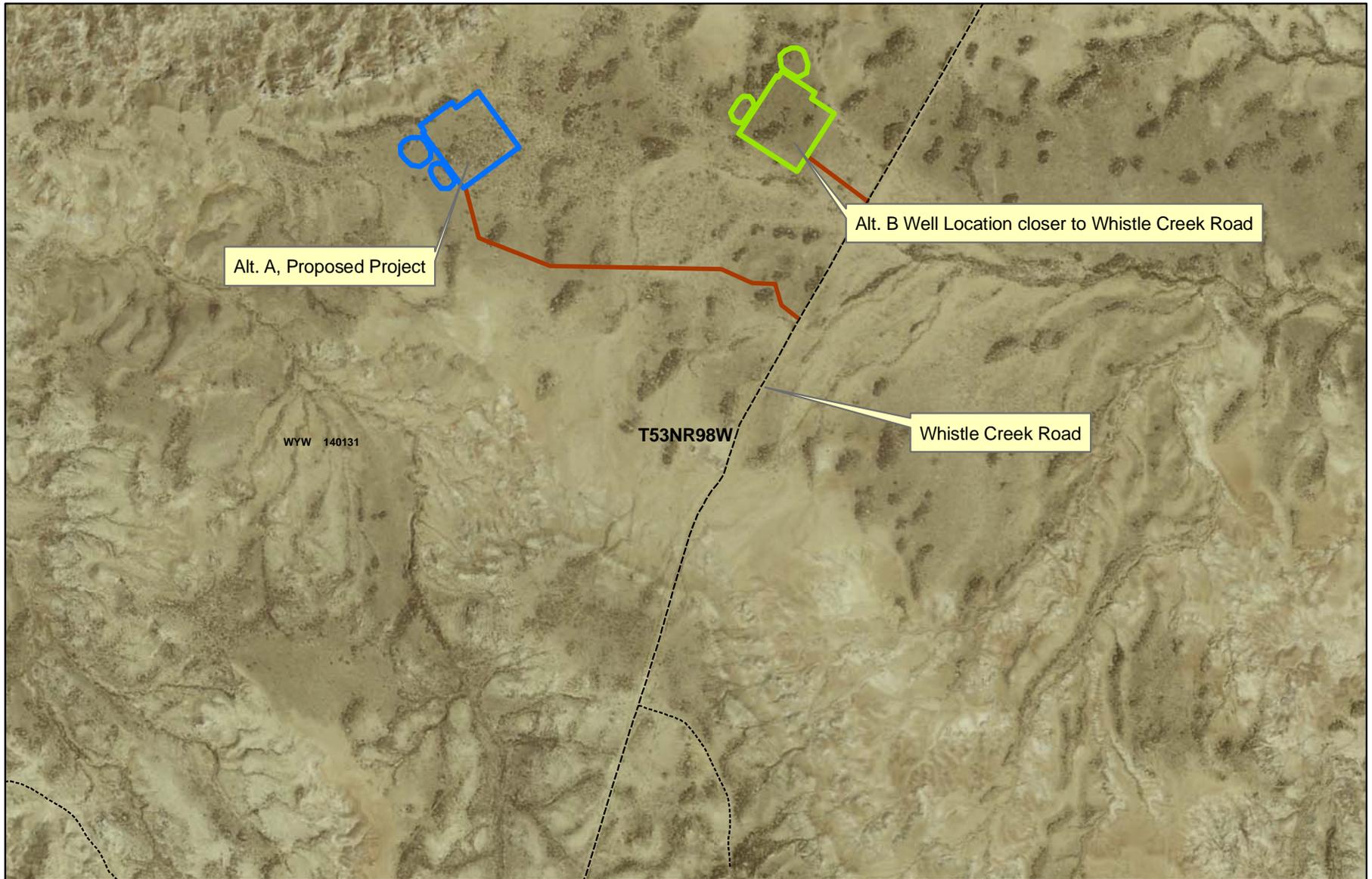
paleontological resources is prohibited without a permit. Unlawful removal, damage, or vandalism of paleontological resources will be prosecuted by federal law enforcement personnel.

2. **Discovery:** If vertebrate or other scientifically significant paleontological resources (fossils) are discovered on BLM-administered land during operations, the Operator shall suspend operations that could disturb the materials, stabilize and protect the site, and immediately contact the BLM Cody Field Office Manager (Authorized Officer). The Authorized Officer would arrange for evaluation of the find within an agreed timeframe and determine the need for any mitigation actions that may be necessary. Any mitigation would be developed in consultation with the Operator, who may be responsible for the cost of site evaluation and mitigation of project effects to the site. If the operator can avoid disturbing a discovered site, there is no need to suspend operations; however, the discovery shall be immediately brought to the attention of the Authorized Officer.

3. **Avoidance:** All vertebrate or scientifically significant paleontological resources found as a result of the project/action will be avoided during operations. Avoidance in this case means “No action or disturbance within a distance of at least 50 feet of the outer edge of the paleontological locality.

**APPENDIX C**

**PROJECT MAPS**



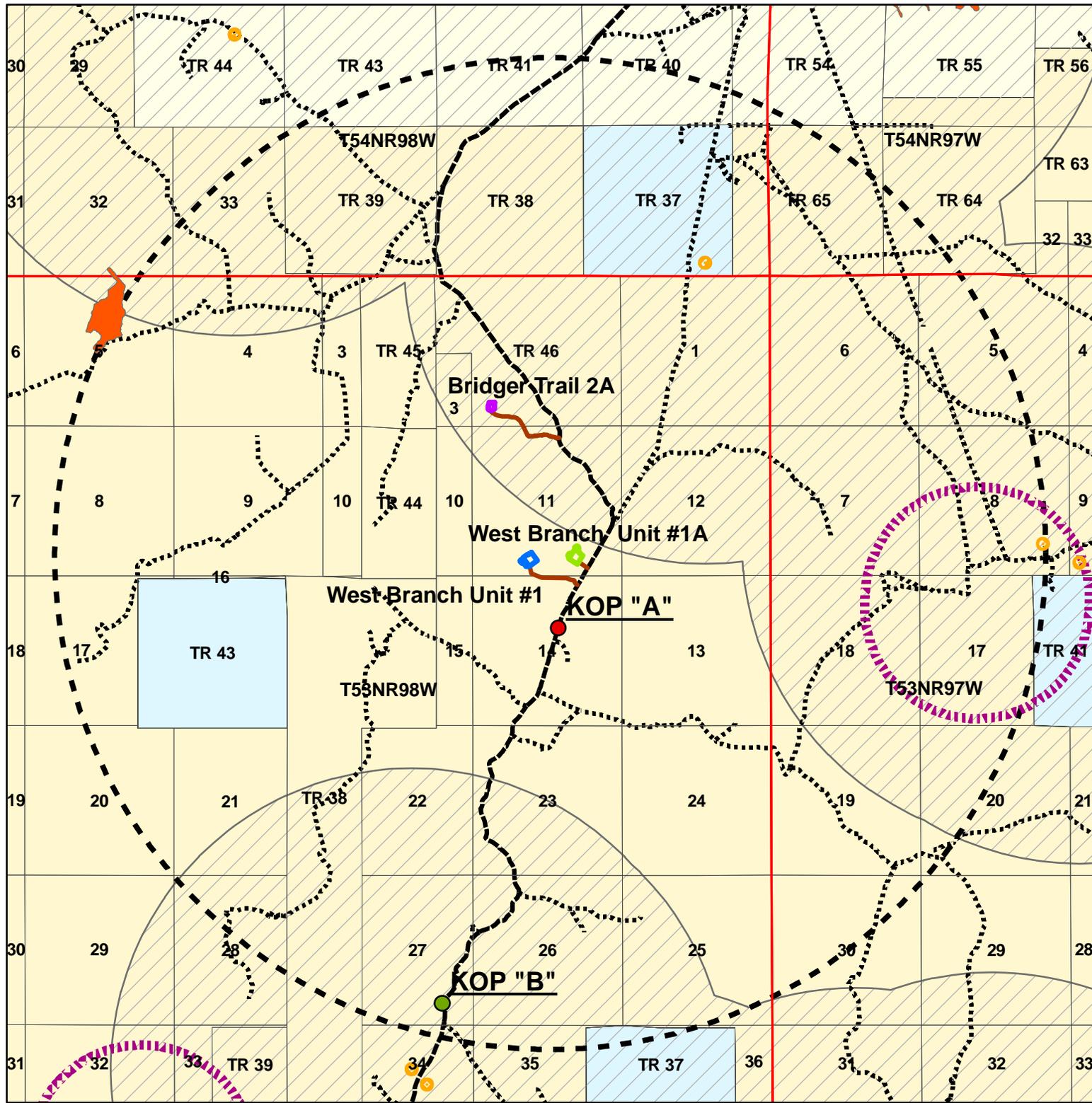
**MAP I**  
**West Branch Unit #1 & West Branch Unit # 1A**



# MAP II West Branch Unit #1, West Branch #1A, and Bridger Trail #2A shown with Associated Resource Values



- Legend**
- Prairie Dogtowns
  - Sage Grouse Leaks
  - Sage Grouse Nesting - 2 Mi. Buffer
  - Raptors - 3-4 Mi. Buffer
  - Bridger Trail 2A
  - West Branch Unit #1A
  - West Branch Unit #1
- Key Observation Points**
- KOP "A"
  - KOP "B"
- Roads**
- Graded Dirt Rd.
  - 2-track trail
- Background**
- Bureau of Land Management
  - Bureau of Reclamation
  - State
- Scale**
- 0 0.5 1 2 Miles



# MAP III West Branch Proposed and Alternative Wells



## Legend

-  Highway
-  Secondary Rd.
-  Gravel Rd.
-  Graded Dirt Rd.
-  2-track trail
-  BCA Proposed Wilderness
-  West Branch Area of Effects
-  McCulough Peaks WSA
-  West Branch Exploratory Unit
-  Red Point project area
-  Wild Horse Herd Mgmt. Area
-  Bureau of Land Management
-  Bureau of Reclamation
-  State

