

SUMMARY OF
WEST TAVAPUTS PLATEAU
CULTURAL RESOURCE MONITORING PLAN
FALL 2011

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Prepared for:

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INTRODUCTION

As per the Programmatic Agreement (PA) regarding The West Tavaputs Plateau Natural Gas Full Field Development Plan in Carbon and Duchesne Counties, Utah, the Bill Barrett Corporation (BBC) is required to fund a Cultural Resource Monitoring Plan (CRMP) with the express goal of avoiding, minimizing, and mitigating adverse effects to historic properties. More specifically, the PA states that “the objectives of the Cultural Resource Monitoring Plan are to determine baseline information about a sample of sites, monitor those sites over time, and collect samples of dust from sites to determine if dust is being deposited on them.” This summary details the first collection of baseline data from a discretionary sample of sites in the West Tavaputs Plateau (WTP) Area of Potential Effect (APE) and the second year of data collection from a predetermined sample of sites (see Patterson 2010 for the initial baseline data collection from the predetermined sample).

In August, September, and October 2011, Montgomery Archaeological Consultants, Inc. (MOAC) implemented the baseline data collection for the discretionary site sample. The work was authorized by Mr. Scot Donato, Bill Barrett Corporation, Denver, Colorado, and overseen by Ms. Julie Howard, Bureau of Land Management (BLM) Utah State Office. MOAC personnel responsible for collecting the baseline data included Jody Patterson, Kelly Jo Jackson, Roger Stash, and Adam Thomas. Data collection and assessments of the initial predetermined sample of sites was also completed at this time.

SITE SELECTION AND IMPLEMENTATION

In June 2010, Julie Howard, Blaine Miller (BLM Price Field Office), and Jody Patterson (MOAC) visited the WTP APE to compile a list of possible monitoring sites for both the predetermined and discretionary site samples. The compiled list of predetermined sites was presented to the WTP consulting parties for review. The list of sites in the discretionary sample were determined solely by the BLM. Documentation protocols were developed for how to establish the monitoring program and collect the baseline information. The BLM finalized the list of discretionary sites and provided MOAC with the necessary fieldwork authorization forms on 25 August 2011.

Between the two samples, a total of 39 sites were visited as part of the 2011 WTP site monitoring program (Figure 1; Appendix A). The predetermined site sample included 42Cb0016, 42Cb0031, 42Cb0041, 42Cb0238, 42Cb0239, 42Cb0240, 42Cb0241, 42Cb0242, 42Cb0446, 42Cb0829, 42Cb0891, 42Cb0956, 42Cb0970, 42Cb0972, 42Cb0974, 42Cb1279, 42Cb1733, 42Cb2000, 42Cb2702, 42Cb2817, 42Cb2896, 42Dc0229, 42Dc0950, and 42Dc1111. The discretionary site sample for 2011 included 42Cb0089, 42Cb0253, 42Cb0808, 42Cb0903, 42Cb0967, 42Cb1909, 42Cb2007, 42Cb2541, 42Cb2545, 42Cb2774, 42Cb3025, 42Dc0256, 42Dc0258, 42Dc1302, and 42Dc2702.

METHODS

The collection of baseline data consisted of identifying and documenting the current impacts to each site in the discretionary sample and completing the second year of photographs and site evaluations for the predetermined site sample. In general, this consisted of updating existing site documentation, examining each feature or panel for impacts, new documentation (photographs, sketches, descriptions, site maps), and qualitatively assessing the impacts in regard to site condition. With road construction tied to the Nine Mile Canyon Road Improvement Project (NMRIP) and emergency road maintenance on the Nine Mile Road between Cottonwood Canyon and Devil's Canyon, it was necessary to re-establish several of the photograph control points established in 2010 during the initial baseline data collection for the predetermined sample. Reset control points were located as close as possible to their original points where safety was not a concern. New control point forms were created for all the reset points and are included in the site documentation (Appendix A).

Site condition assessments were made using the site condition criteria provided in the Intermountain Antiquities Computer System (IMACS) manual. The criteria include:

Excellent	– virtually undisturbed
Good	– 75 percent undisturbed
Fair	– 50-75 percent undisturbed
Poor	– more than 50 percent disturbed
Inundated	– covered with water
Destroyed	– no longer exists
Unknown	– no information available

In addition to overall site condition, these criteria were also applied to subsurface disturbance and rock art condition. For example, if a rock art site contained graffiti or some other impact on nearly every panel, the criteria could be applied specifically to the rock art.

New site maps were completed for each site in the discretionary sample and updates were made to site maps in the predetermined sample where necessary. Data was collected using a combination of survey-grade Trimble GPS units and a Sokkia total station. In addition to the site boundary, topography, and the location of features, the mapping effort focused on documenting the spatial location of impacts (looter holes, social trails, etc.), and placing the site in the context of its constructed environment (e.g., how the site is situated in regards to roads, pipelines, trails), both of which may be directly or indirectly impacting the site. Based on the site examination, site documentation, and professional judgement, qualitative assessments were made utilizing the WTP site assessment form included in the PA (Appendix B).

Two types of photographs were taken at each site: control point monitoring photographs (Appendix B) and general (snapshot) photographs. For the control-point photograph documentation, three to five control points were established at each site and marked by a short length of rebar with an aluminum cap. Control points were established at places that offered a good overview of the site or gave a representative view of a specific feature(s), panel(s), or impact(s). Additional control points, marked by 10-inch brite spikes, were placed at topical photograph locations. The purpose of these secondary points is to help realign future photographs and to provide specific reference points as a control. General photographs, or snapshots, were taken of most panels and features to document their condition. Although not as directly replicable

as the control point photographs, these snapshots will provide valuable information during future assessments.

Control point photographs were taken using both a 35 mm SLR camera and a comparable digital camera. The aperture and shutter speed settings, the date and time, the weather conditions, and the tripod settings (height, bearing, and tilt) were recorded (Appendix B). Additional information pertaining to each camera's make and model, film, lenses, and filters were noted. For each control point photograph, a tripod was set over the control point, leveled, and aligned to true north. The bearing and angle of each photograph could then be recorded. In some instances, a meterboard was placed on the secondary control point for scale and contrast. Snapshots were taken only with a digital camera.

RESULTS

Predetermined Site Sample

The 24 sites in the predetermined sample were revisited in 2011. In general, most of the sites in the sample remained unchanged from 2010 when the baseline information was collected. New impacts were observed at 12 of the sites in the sample, though the impacts vary considerably (Table 1). The most commonly noted impacts were related to construction related to the Nine Mile Road Improvement Project. While none of the sites in the sample were directly or negatively impacted by the project, the road improvements in many instances have altered the sight picture of the location. The road is now much more distinct with shaped cut lopes, a raised bed, and borrows on either side of the road. The most notable difference related to the road improvements can be seen at 42Cb0446 where a "shot-crete" wall was constructed on a steep slope immediately below the site boundary to keep new erosion from damaging the site above the wall.

Evidence of camping was identified at three sites, one of which had shown past indications of camping use. New pedestrian impacts, mostly footprints, were identified at two sites, one of which also exhibited camping Impacts.

New graffiti were observed at six sites, though some examples may have been overlooked during the initial baseline data collection. Potentially new graffiti were observed at 42Cb0016, 42Cb0031, 42Cb0239, and 42Cb0240; however, these did not appear particularly recent. New graffiti were documented at 42Cb1279 and 42Cb0242.

Discretionary Sample Sites

Baseline information was collected from 15 sites for the initial set of sites in the discretionary site sample. Various impacts were noted at each site in the sample, though some were in considerably better overall condition than others (Table 2). In regards to overall condition, two sites were evaluated as excellent, 10 were evaluated as good, and 3 were evaluated as fair. None of the sites in the discretionary sample were rated as being in poor overall condition.

Impacts to rock art mostly include dust accumulation and graffiti (scratches, initials, inscriptions, art images). In some cases, dust accumulation could be tied to runoff from above or from road dust, but in many instances the source of the dust was ambiguous at the qualitative level

of the evaluation. Dated initials and inscriptions were uncommon, but most of the observed recent dates are from the 1980s and 1990s.

Litter and pedestrian impacts (e.g., foot prints, social trails) were the most common impacts observed at most of the sites in the sample. Remnants of campfire rings and other camping related activities were noted at four sites, which are located on the plateaus above Nine Mile Canyon. ATV tracks were note on or very near to artifact scatters in the Peters Point/Horse Canyon area.

Site impacts from agricultural activities are uncommon, though livestock related impacts (animals trails, dung) were observed at four sites.

Evidence of looting was identified several sites, but all the observed evidence of looting has been previously documented. No evidence of new looting was identified at any of the sites in the predetermined sample.

SUMMARY

To date, condition assessments have been made at 39 sites in as part of the WTP CRMP. Fifteen of the sites are in the BLM's discretionary monitoring sample and 24 are in the predetermined sample. Baseline assessments were conducted at the sites in the discretionary sample, while a second set of evaluations were conducted at each site in the predetermined sample. Overall, several changes at 12 of the predetermined sites were noted, but most were minor and neither directly or negatively impacted the sites. However, at two sites new graffiti were documented.

Table 1: Update of West Tavaputs Plateau Predetermined Site Sample Evaluation

Site	Type	Location	Ownership	Overall Condition	Subsurface Condition	Rock Art Condition	Impacts								
							Litter	Camping	ATV	Pedestrian	Agriculture	Livestock	Development	Rock Art Impacts	
42Cb0016	Rockshelter, Rock Art	Nine Mile Cyn	Private	Poor	Poor	Poor	X	X			X				Dust, Chalking, Latex, Bullet Holes, Possible New Initials
42Cb0031	Rock Art	Dry Cyn	BLM	Good	Excellent	Good	X	X			X				Dust, Possible New Graffiti
42Cb0041	Rock Art, Historic Inscriptions	Dry Cyn	BLM	Good	Excellent	Good	X					X	X		Dust, Graffiti
42Cb0238	Rock Art	Cottonwood Cyn	SITLA	Good	Excellent	Fair	X	X			X			X (RI)	Dust, Graffiti
42Cb0239	Rock Art	Cottonwood Cyn	SITLA	Poor	Unknown	Poor	--				X			X	Dust, Chalking, Latex, Possible New Graffiti
42Cb0240	Rock Art	Cottonwood Cyn	BLM	Fair	Excellent	Good	X				X			X (RI)	Dust, Possible New Graffiti
42Cb0241	Rock Art	Jacks Cyn	BLM	Fair	Fair	Excellent	X	X			X		X		
42Cb0242	Open Residential, Rock Art, Historic	Nine Mile Cyn	BLM	Fair	Excellent	Fair	X	X			X	X	X	X (RI)	Dust, New Graffiti
42Cb0446	Open Residential, Rock art	Nine Mile Cyn/Cottonwood Cyn	BLM	Good	Good	Excellent	X				X			X (RI)	
42Cb0829	Rock Art	Nine Mile Cyn/Daddy Cyn	BLM	Good	Good	Good					X		X	X	Dust, Bullet Holes, Mud Splatter
42Cb0891	Open Residential, Rock Art	Nine Mile Cyn	BLM	Fair	Fair	Excellent	X				X		--		--
42Cb0956	Rockshelter, Midden	Cottonwood Cyn	BLM	Poor	Good	N/A								X (RI)	
42Cb0970	Rock Art	Nine Mile Cyn	BLM	Excellent	Excellent	Excellent	X								Natural Weathering
42Cb0972	Open Residential	Nine Mile Cyn	BLM	Poor	Excellent (?)	N/A					X			X	
42Cb0974	Rock Art	Nine Mile Cyn	BLM	Fair	Excellent	Fair	X				X		X		Dust, Graffiti
42Cb1279	Rock Art, Rockshelter	Nine Mile Cyn	BLM	Poor	Fair	Poor	X	X			X		X	X (RI)	Dust,, Attempted Removal, New Graffiti
42Cb1733	Open Camp, Linear Berm and Corral	Prickly Pear	BLM	Poor	Excellent	N/A	X	X (new)			X		--	X	
42Cb2000	Residential, Granary, Rockshelter, Rock art	Nine Mile Cyn	BLM	Good	Excellent	Good	--		--		X		X		Dust, Graffiti
42Cb2027	Rock Art	Nine Mile Cyn	BLM	Good	Excellent	Good	--							--	Dust, Graffiti
42Cb2817	Rock Art	Nine Mile Cyn	BLM	Good	Excellent	Good	X	X			X				Dust, Bullet Holes
42Cb2896	Rock Art	Nine Mile Cyn	BLM	Fair	Excellent	Fair	--				X			X (RI)	Dust, Bullet Holes, Attempted Removal
42Dc0229	Granary	Nine Mile Cyn	Private	Fair	Excellent	N/A	--								
42Dc0950	Open Residential	Nine Mile Cyn	Private	Fair	Fair	N/A	X				X		--		
42Dc1111	Rock Art	Nine Mile Cyn	Private	Good	Excellent	Excellent	X				X				Dust, Fading
Totals							16	8	0	19	1	7	12		

Red = Negative Change From 2010 Site Evaluation; **Green** = Positive Change From 2010 Site Evaluation; RI = Road Improvement

Table 2. Summary of West Tavaputs Plateau Monitoring Baseline Data Assessment for the Discretionary Site Sample

Site	Type	Location	Ownership	Overall Condition	Subsurface Condition	Rock Art Condition	Impacts							
							Litter	Camping	ATV	Pedestrian	Agriculture	Livestock	Development	Rock Art Impacts
42Cb0089	Rock Art, Sheltered Residential, Granary, Rock Shelter	Jacks Cyn	BLM	Fair	Poor	Good	X	X		X		X		Dust
42Cb0253	Other (Artifact Scatter)	Peters Point	BLM	Good	Excellent	N/A	X	X	X	X			X	Dust, Erosion
42Cb0808	Rock Art	Nine Mile Cyn	BLM	Excellent	Excellent	Excellent				X				
42Cb0903	Rock Art, Sheltered Residential, Granary, Rock Shelter	Nine Mile Cyn	BLM	Good	Excellent	Good	X			X				Graffiti
42Cb0967	Rock Art/ Rock Shelter	Nine Mile Cyn	BLM	Fair	Poor	Fair				X				Graffiti
42Cb1909	Open Residential	Prickly Pear	BLM	Fair	Excellent	N/A	X	X		X			X	
42Cb2007	Rock Art	Nine Mile Cyn	BLM	Good	Excellent	Good	X							Dust, Graffiti
42Cb2541	Other (Artifact Scatter)	Peters Point	BLM	Good	Excellent	N/A	X	X		X			X	
42Cb2545	Other (Artifact Scatter)	Peters Point	BLM	Good	Excellent	N/A	X		X			X		
42Cb2774	Other (Artifact Scatter)	Peters Point	BLM	Good	Excellent	N/A	X							
42Cb3025	Open Residential, Rock Art	Nine Mile Cyn	BLM	Good	Good	Excellent				X			X	Erosion
42Dc0256	Rock Art	Nine Mile Cyn	BLM	Good	Excellent	Good	X			X				Graffiti
42Dc0258	Rock Art	Nine Mile Cyn	BLM	Good	Excellent	Fair	X			X		X		Dust, Graffiti
42Dc1302	Rock Art	Nine Mile Cyn	BLM	Excellent	Excellent	Excellent						X	X	Dust, Graffiti
42Dc2702	Rock Art	Nine Mile Cyn	Private	Good	Excellent	Good				X				Dust, Graffiti
Totals							10	4	2	11		4	5	

APPENDIX A
MONITORING SITE LOCATION MAP
(Contains Sensitive Information-Not for Public Distribution)

APPENDIX B

IMACS Site Forms

(Part A, Maps, Photographs, Photo Logs, and Assessment Forms)

APPENDIX C
Forms

BBC WEST TAVAPUTS PLATEAU SITE MONITORING
CONTROL POINT LOCATION FORM

Site: _____ Date Set: _____
 Control Point (CP) Number: _____
 CP Label: _____
 Location: UTM: Z 12 _____ East _____ North _____
 Description
 Control Point (CP) Type: ___ General ___ Topic ___ Other
 Meterboards (MB) Used: ___ Yes ___ No

MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 CP # _____ m at _____° from CP# _____

Site: _____ Date Set: _____
 Control Point (CP) Number: _____
 CP Label: _____
 Location: UTM: Z 12 _____ East _____ North _____
 Description
 Control Point (CP) Type: ___ General ___ Topic ___ Other
 Meterboards (MB) Used: ___ Yes ___ No

MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 CP # _____ m at _____° from CP# _____

Site: _____ Date Set: _____
 Control Point (CP) Number: _____
 CP Label: _____
 Location: UTM: Z 12 _____ East _____ North _____
 Description
 Control Point (CP) Type: ___ General ___ Topic ___ Other
 Meterboards (MB) Used: ___ Yes ___ No

MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 CP # _____ m at _____° from CP# _____

Site: _____ Date Set: _____
 Control Point (CP) Number: _____
 CP Label: _____
 Location: UTM: Z 12 _____ East _____ North _____
 Description
 Control Point (CP) Type: ___ General ___ Topic ___ Other
 Meterboards (MB) Used: ___ Yes ___ No

MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 MB # _____ m at _____° from CP# _____
 CP # _____ m at _____° from CP# _____

West Tavaputs Plateau Photopoint Monitoring Photograph Log
 BASELINE COLLECTION

Site #: _____

Camera Type: _____

Film Type: Print Digital

Photographer: _____

Lens/Filter: _____

ASA/ISO: _____

PHOTO #	CONTROL POINT #	DESCRIPTION	GENERAL			CAMERA		CAMERA MOUNT		
			Date	Time	Weather	Aperture	Shutter Speed	Height	Bearing	Tilt
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										

Additional Comments: