APPENDIX F.10

Plan of Development

Pacific Connector Gas Pipeline, LP

Plan of Development

Pacific Connector Gas Pipeline Project

September 2019

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1.1 INTRODUCTION

Pacific Connector Gas Pipeline, LP (PCGP) proposes to construct and operate a new approximately 229-mile, 36-inch diameter intrastate natural gas transmission system and related facilities that will traverse parts of Coos, Douglas, Jackson and Klamath counties (Pipeline). The Pipeline will obtain gas from interconnections with the Ruby pipeline and the Gas Transmission Northwest pipeline near Malin, Oregon and transport the gas to a proposed liquefied natural gas terminal to be constructed by Jordan Cove Energy Project, L.P. (JCEP) that will be located on the North spit of Coos Bay in Coos Bay, Oregon.

This Plan of Development (POD) has been prepared to identify the conditions that will be specified in the Right-of-Way Grant for the construction and operation of the Pipeline on lands managed by the United States Department of the Interior (DOI) Bureau of Land Management (BLM) and Bureau of Reclamation (Reclamation), and the United States Department of Agriculture (USDA) Forest Service. The Pipeline will cross 46.9 miles of federal land managed by the BLM; 30.7 miles managed by the Forest Service, and 0.31 mile managed by Reclamation (see Table 1.1-1). The temporary and permanent acres of impact from the specific components are also provided in Table 1.1-1. Tables 1.1-2 and 1.1-3 show the breakout by National Forest and by BLM District of the miles crossed through the various Northwest Forest Plan (NWFP) and 2016 BLM Resource Management Plan (RMP) land allocations. Tables 1.1-4 and 1.1-5 provide the specific mileposts where the Pipeline crosses National Forests and BLM Districts. Finally, Table 1.1-6 lists the Reclamation jurisdictional facilities, with their milepost locations, easement widths, acres of impact, and townships, ranges, and sections.

Table 1.1-1
Federal Lands Affected by the Pipeline Project

Pipeline Facility/Component	Jurisdiction		
	BLM	**Forest Service**	**Reclamation**
Miles Crossed by Pipeline	46.9	30.7	0.31
Temporary Construction Acreage Requirements (acres)			
Construction Right-of-Way	535.36	351.14	3.69
TEWAs	165.19	103.34	0.46
UCSAs	178.84	126.08	0.00
Off-site Source/Disposal	6.99	9.26	0.00
Contractor and Pipe Storage Yards	0.00	0.00	0.00
Existing Roads Needing Improvements in Limited Locations [1]	4.71	1.00	0.00
Temporary Access Roads (TAR)	0.00	0.24	0.00
Total Temporary Impacts (acres)	**891.08**	**591.06**	**4.15**
Permanent Easement (50 feet)	284.24	186.11	1.90
Permanent Access Roads (PAR)	0.22	0.00	0.00
Aboveground Facilities	0.17 [2]	0.00	0.00
30-Foot Maintained	170.38	111.66	1.14

[1] Includes those existing roads requiring widening in specific locations; does not include limbing/brush clearing or blading/grading for potholes.
[2] BVA #7 and #12 are located on BLM lands.

Table 1.1-2
Forest Service Federal Land Allocations – Miles Crossed by the Pipeline

Jurisdiction	Late Successional Reserves (miles)	Matrix (miles)	Total	Riparian Reserves [1] (miles)
Forest Service – Umpqua	5.00	5.80	**10.80**	0.80
Forest Service – Rogue River-Siskiyou	13.88	0.00	**13.88**	0.24
Forest Service – Fremont-Winema	0.00	6.02	**6.02**	0.32
Total	**18.88**	**11.82**	**30.70**	**1.36**

[1] Riparian Reserves overlay other land use allocations.

Table 1.1-3
BLM Federal Land Allocations – Miles Crossed by the Pipeline

Land Use Allocation	Coos Bay District	Roseburg District	Medford District	Lakeview District	Total
District-Designated Reserve (No Harvest)	0.09	0.37	5.02	0.00	**5.48**
District-Designated Reserve (Non-Forest)	0.76	1.62	2.31	0.04	**4.73**
Eastside Management Area	0.00	0.00	0.00	0.26	**0.26**
Harvest Land Base (Low Intensity Timber Area)	0.72	0.00	0.68	0.00	**1.40**
Harvest Land Base (Moderate Intensity Timber Area)	2.56	1.70	0.00	0.00	**4.26**
Harvest Land Base (Uneven-Aged Timber Area)	0.00	2.77	2.00	0.98	**5.75**
Late-Successional Reserve (Dry Forest)	0.00	5.08	4.21	0.00	**9.29**
Late-Successional Reserve (Moist Forest)	11.45	1.51	0.00	0.00	**12.96**
Riparian Reserve* (Dry Forest)	0.00	0.16	0.93	0.02	**1.11**
Riparian Reserve* (Moist Forest)	1.52	0.11	0.00	0.00	**1.63**
Totals	**17.10**	**13.32**	**15.15**	**1.30**	**46.87**

* Calculated using 2016 RMP DATA\RWO_ROD_SWO.gdb/RWO_ROD_SWO_LUA_poly and 2016 RMP DATA\RWO_ROD_NCO.gdb/RWO_ROD_NCO_LUA_poly.

Table 1.1-4
Forest Service Managed Lands by Milepost [1]

Begin MP	End MP	National Forest/	Length Crossed (miles)[1]
99.31	99.83	Umpqua NF	0.52
100.39	100.68	Umpqua NF	0.29
101.20	101.89	Umpqua NF	0.69
102.32	102.85	Umpqua NF	0.52
104.10	113.20	Umpqua NF	8.78
		Total	**10.80**
153.81	154.93	Rogue River-Siskiyou NF	1.12
155.45	168.15	Rogue River-Siskiyou NF	12.76
		Total	**13.88**
168.15	169.37	Fremont-Winema NF	1.42
170.04	171.39	Fremont-Winema NF	1.36
171.59	172.71	Fremont-Winema NF	1.11
173.11	174.81	Fremont-Winema NF	1.70
174.95	175.37	Fremont-Winema NF	0.43
		Total	**6.02**
		Grand Total	**30.70**

[1] Because equations have been inserted to prevent the mileposts from changing, it is no longer possible to use the distance between mileposts as an accurate length (e.g., the centerline is now 229.40 miles long but the ending MP is 228.81).

Table 1.1-5
BLM Managed Lands by Milepost [1]

Begin MP	End MP	BLM District	Length Crossed (miles)[1]
Coos County			
12.5 R	13.78 R	Coos Bay District	1.28
14.04 R	14.17 R	Coos Bay District	0.13
15.87 BR	15.92 BR	Coos Bay District	0.06
16.71BR	17.9BR	Coos Bay District	1.19
18.48BR	22.11BR	Coos Bay District	3.64
22.68BR	23.09BR	Coos Bay District	0.41
23.35BR	23.79BR	Coos Bay District	0.44
24.84 BR	21.81	Coos Bay District	0.49
23.19	23.87	Coos Bay District	0.68
23.99	24.36	Coos Bay District	0.38
25.36	25.57	Coos Bay District	0.22
26.82	27.08	Coos Bay District	0.26
27.11	27.47	Coos Bay District	0.36
28.40	28.79	Coos Bay District	0.38
31.59	32.47	Coos Bay District	0.87
33.77	34.21	Coos Bay District	0.44
35.12	38.93	Coos Bay District	3.78
40.17	40.22	Coos Bay District	0.05
41.44	42.01	Coos Bay District	0.67
43.19	43.50	Coos Bay District	0.30
44.63	45.72	Coos Bay District	1.08
		Coos Bay District Total	**17.11**
Douglas County			
46.90	47.17	Roseburg District	0.27
48.27	49.20	Roseburg District	1.05
51.04	51.29	Roseburg District	0.25
52.61	52.95	Roseburg District	0.33
53.11	53.70	Roseburg District	0.60
54.38	54.43	Roseburg District	0.05
60.85	61.66	Roseburg District	0.80
64.38	64.50	Roseburg District	0.13
64.61	64.88	Roseburg District	0.27
73.96	74.45	Roseburg District	0.59
74.59	75.30	Roseburg District	0.71
75.57	75.65	Roseburg District	0.08
76.02	76.11	Roseburg District	0.09
78.18	78.79	Roseburg District	0.61
79.59	80.56	Roseburg District	0.99
82.71	83.32	Roseburg District	0.61
84.91	85.27	Roseburg District	0.36
86.14	87.49	Roseburg District	0.90
89.90	90.49	Roseburg District	0.64
91.26	91.94	Roseburg District	0.68
93.03	93.04	Roseburg District	0.01
93.64	93.93	Roseburg District	0.28
95.15	95.82	Roseburg District	0.66
97.07	98.47	Roseburg District	1.40
99.83	100.39	Roseburg District	0.55
101.89	102.32	Roseburg District	0.41
		Roseburg District Total	**13.32**
Jackson County			
115.11	115.39	Medford District	0.29
115.42	116.77	Medford District	1.35

Begin MP	End MP	BLM District	Length Crossed (miles)[1]
116.84	117.80	Medford District	0.96
118.91	119.92	Medford District	0.94
120.27	120.46	Medford District	0.19
121.26	121.55	Medford District	0.29
123.33	124.23	Medford District	0.90
124.38	125.54	Medford District	1.17
126.28	126.58	Medford District	0.31
126.86	127.11	Medford District	0.25
127.39	128.42	Medford District	1.03
128.73	129.45	Medford District	0.70
131.36	131.93	Medford District	0.57
133.20	133.45	Medford District	0.25
136.82	137.12	Medford District	0.30
139.88	140.57	Medford District	0.69
140.83	141.92	Medford District	1.09
148.27	149.90	Medford District	1.09
150.49	151.65	Medford District	1.18
152.19	153.81	Medford District	1.62
		Medford District Total	**15.17**
Klamath County			
176.15	177.04	Lakeview District	0.89
179.58	179.72	Lakeview District	0.15
216.49	216.75	Lakeview District	0.26
		Lakeview District Total	**1.30**
		Grand Total	**46.90**

[1] Because equations have been inserted to prevent the mileposts from changing, it is no longer possible to use the distance between mileposts as an accurate length (e.g., the centerline is now 229.40 miles long but the ending MP is 228.81).

Table 1.1-6
U.S Bureau of Reclamation Administered Lands and Canals

U.S Bureau of Reclamation (Reclamation) Jurisdictional Facilities (Easement Width) [1]	Approximate Pipeline Milepost	Length of Pipeline Crossing (feet)	Index No. Easement Width	Waterbody ID [2]	QQ	Township	Range	Section
C-4-E Lateral [3]	NA	Not Crossed [3]	KO-20-080 30-feet	ADX293	SWNE	39S	9E	20
Withdrawn Land	NA	Not Crossed	KO-20	N/A	SWNE	39S	9E	20
No. 1 Drain	200.54	14.59	KO-20-276 60-feet	ADX294	SWNE	39S	9E	20
C-4-E Lateral	201.63	15.49	KO-20-164 40-feet	ADX096	NENW	39S	9E	28
C-4 Lateral	204.12	48.18	KO-09-013 50-feet	ADX100	NWNE	40S	9E	3
C-4-F Lateral	204.33	12.91	KO-09-013 50-feet	ADX101	NWNE	40S	9E	3
No. 3 Drain	204.74	17.80	KO-09-14 60-feet	ADX105	NWNW	40S	9E	2
C-4-C Lateral	205.50	18.28	KO-09-018 60-feet	ADX109	SWNE	40S	9E	2
C Canal	205.96	54.90	KO-09-027 75-feet [4]	ADX111	NWSW	40S	9E	1
D-2 Lateral	206.51	23.76	KO-09-050 60-feet	ADX113	NWNE	40S	9E	12
5-A-1 Drain	207.11	4.00	KO-09-053 60-feet	AW-114	NESE	40S	9E	12
5-A Drain	207.26	28.61	KO-09-054 50-feet [4]	ADX115	NESE	40S	9E	12
C-4-7 Lateral	207.40	15.20	KO-10-031 60-feet	ADX116	NWSW	40S	10E	7
5-A Drain	207.42	16.84	KO-10-032 50-feet	ADX117	NWSW	40S	10E	7
5-A Drain	207.60	61.56	KO-10-032 50-feet	ADX118	SWSW	40S	10E	7
5-A Drain	207.99	25.26	KO-10-034 50-feet	ADX119	NENW	40S	10E	18
5-A Drain	208.18	19.94	KO-10-034	ADX123	SENW	40S	10E	18

U.S Bureau of Reclamation (Reclamation) Jurisdictional Facilities (Easement Width) [1]	Approximate Pipeline Milepost	Length of Pipeline Crossing (feet)	Index No. Easement Width	Waterbody ID [2]	QQ	Township	Range	Section
			50-feet					
5-K Drain	209.02	24.95	KO-10-048 30-feet [4]	ADX130	SESE	40S	10E	18
C-9 Lateral	209.15	16.03	KO-10-047 30-feet	ADX134	NWNW	40S	10E	20
No. 5 Drain	210.26	17.90	KO-10-061 50-feet	ADX143	SESE	40S	10E	20
5-H Drain	210.85	10.71	KO-10-074 20-feet	ADX260	SWNW	40S	10E	28
G Canal	213.87	43.90	KO-10-086 165-feet	ADX275	SESE	40S	10E	26
	Total	**490.81**						

[1] Reclamation Facility Name, (easement width) Reclamation ID, and Index No included as attributes in Bureau of Reclamation PCGP-Crossing Shapefile provided to PCGP - January 7, 2009. Easement widths determined from scanned easement plats provided by Reclamation.
[2] Waterbody ID from PCGP wetland and waterbody surveys as shown on the Environmental Alignment Sheets in Appendix AA to the POD.
[3] The C-4-E Lateral is not crossed by the centerline but the easement for the lateral is within the construction right-of-way for approximately 270 feet.
[4] Canal easement widths not provided on easement plats provided by Bureau of Reclamation; therefore crossing widths estimated based on photography and similar canal easements on adjacent canals.

1.2 SCHEDULE

PCGP's schedule will be consistent with FERC's FEIS and Certificate of Public Convenience and Necessity as well as the FWS and NMFS Biological Opinions. Generally speaking, Early Works (MPs 0 – 7.34R, including the two horizontal directional drills [HDDs] across Coos Bay), civil survey, and road improvements will be completed initially, followed by mainline and facility construction, and ending with restoration and monitoring.

Timber clearing in areas of northern spotted owl and marbled murrelet would be conducted outside the critical breeding seasons[1]. Construction activities will be scheduled to take advantage of the drier periods of the year to minimize winter construction, and to reduce potential environmental impacts and construction safety risks.

PCGP plans to conduct forest clearing (Year One) prior to mainline construction (Year Two), to minimize overall work space and TEWA requirements. TEWA requirements have been minimized by proposing a two-year construction window because the same work areas used to stage right-of-way logging timber clearing activities and provide log storage and decking space would then be utilized for construction activities. Logging concurrently with pipeline construction would require additional space to work safely and efficiently. Scheduling clearing and mainline construction activities over a two-year period will minimize winter construction requirements resulting from seasonal and biological construction windows. The detailed schedule for clearing activities will include areas of known seasonal restrictions along the route. Temporary erosion control and stabilization measures will be installed where necessary in areas of disturbance. These measures will be maintained throughout construction until the Pipeline is in-service and disturbed areas are stable.

The schedule allows for reasonable time requirements to remove timber and construct the Pipeline to reduce potential environmental impacts and construction safety risks associated with winter construction. If stipulated in-water work timing windows for two or more resources conflict with each other or cannot be considered for environmental and safety reasons, efforts have been taken to reduce the seasonal constraints near the ends of recommended in-water work windows (ODFW, 2000a) and/or NSO and MAMU breeding seasons. The use of access roads for construction and/or timber removal will adhere to the timing restrictions and wet weather access procedures as outlined in the Transportation Management Plan (see Appendix Y).

[1] Timber clearing in areas of active NSO sites would occur between 10/1 and 2/28 and in areas of known MAMU between 9/16 and 3/31.

PCGP has determined that to efficiently construct the Pipeline construction will be divided into at least five construction spreads. The construction spreads will include timber clearing, construction, and restoration activities within the Right-of-Way Grant area and within specific milepost ranges along the Pipeline. The extent of each construction spread is provided in Table 1.2-1 (subject to revision prior to construction).

Table 1.2-1
PCGP Construction Spread Locations

Spread	Milepost Range [1]
Early Works	0.00-7.34R
1	7.34R-29.54
2	29.54-51.58
3	51.58-71.37
4	71.37-94.75
5	94.75-132.52
6	132.52-162.40
7	162.40-228.81

[1] Equations have been inserted to prevent mileposts from changing throughout the NEPA process; Arithmetic distance between milepost values may not be an accurate indication of length.

1.3 GENERAL LOCATION AND DESCRIPTION OF FACILITIES

In an effort to maintain milepost continuity while adjusting the route, milepost equations have been incorporated into the alignment. This allows the mileposts, for the most part, to remain unchanged. However, the ending milepost no longer reflects the actual length of the proposed Pipeline. The equation incorporation process results in two possible conditions near a milepost equation – the first being an overlap in or duplicate of milepost values (longer reroute) and the second being a gap in the milepost values (shorter reroute).

The Pipeline is comprised of a pipeline and aboveground facilities. Pipeline facilities include approximately 229.40 miles of 36-inch diameter pipeline requiring new pipeline right-of-way. The Pipeline will be co-located within a number of existing powerline, road, and pipeline corridors for approximately 100.3 miles or 43.7 percent of its length; the remaining 56.3 percent will be cross-country construction.

Aboveground facilities associated with the Pipeline include:

- the Klamath Compressor Station with two operating compressor units totaling
- approximately 61,200 ISO horsepower (with one additional standby unit of 31,100 ISO horsepower)at MP 228.81 (located on private land);
- three meter stations (Jordan Cove/MP 0.00; Klamath-Beaver Meter Station [GTN]/MP 228.81; and Klamath-Eagle Meter Station [Ruby]/MP 228.81 (located on private land);
- 5 pig launcher/receivers (co-located with other aboveground facilities on private land);
- 17 mainline block valves spaced along the pipeline according to Department of Transportation requirements (2 on BLM-managed lands); and
- 15 new communications towers and usage of existing communications towers (4 new towers on BLM-managed lands and 1 new tower on NFS lands).

Additionally, a Cathodic Protection (CP) system designed to protect the Pipeline will be installed within 1 year after completion of construction. CP prevents corrosion from forming on a pipeline by making the pipeline cathodic to the surrounding environment. The Corrosion Control Plan (see Appendix F) provides more detail as to the methods and placement of the CP system.

During routing analysis of the Pipeline, PCGP reviewed more than 1,000 miles of alternative alignments for development of the proposed route. The route was developed considering the construction requirements for a large-diameter, high-pressure natural gas transmission pipeline. Constructability/stability requirements were of primary consideration for routing the pipeline concurrent with minimizing potential impacts to sensitive resources such as minimizing the number of waterbody crossings and landowner encumbrances, where feasible. Avoidance of wilderness areas, known cultural resource areas, national parks and monuments as well as scenic waterways and byways was also a factor in development of the proposed alignment.

Where practicable, the alignment utilized existing pipeline and powerline corridors while providing a safe distance between these existing utilities. Although the alignment parallels existing roads and railroads in a number of areas, routing within existing transportation easements was avoided because of the potential impact to traffic flow during construction. Many roads are located in valleys or drainage bottoms adjacent to streams where it is not feasible to install a large-diameter, steel pipeline due to large temporary extra work area (TEWA) requirements, confining topographic conditions, and waterbodies running parallel to the alignment. Many forest roads are located on steep side slopes where it is impractical to route a pipeline because of constructability/stability requirements and concern with the long-term safety and integrity. To ensure the Pipeline is installed properly within consolidated (non-filled) materials and to provide the necessary equipment space, construction on steep side slopes requires significantly more TEWA to accommodate the necessary cuts or excavations. Long-term safety and the potential for third-party damage to the Pipeline must be considered. Future road expansions or improvement projects may require the Pipeline to be relocated where it has been constructed within road easements, which may create unforeseen environmental, landowner, and system impacts. An alternatives analysis was provided in PCGP's September 2017 application to the Federal Energy Regulatory Commission (FERC) for authorization under the Natural Gas Act to construct the Pipeline. The alternatives analysis is set out in Resource Report 10, which is part of the application.

1.3.1 Pipeline Facilities

Construction of the Pipeline will require acquisition of temporary construction rights-of-way, TEWAs, and uncleared storage areas (UCSAs), which are described in this section.

Construction Right-of-Way

Temporary Construction Right-of-Way. PCGP proposes to utilize a standardized 95-foot wide temporary construction right-of-way with a 50-foot Operational Right-of-Way easement. The 50-foot Operational Right-of-Way easement will be authorized under the terms of the Right-of-Way Grant, which is expected to be in effect for the life of the Pipeline (i.e., 50 years). Typically, large diameter pipeline projects (i.e., 30-inch diameter or greater) utilize at least a 100-foot or wider temporary construction right-of-way. The temporary construction right-of-way configuration is required to accommodate

the necessary clearing and grading activities to prepare the right-of-way, temporarily store spoil materials for construction, and to provide a passing lane during construction for movement up and down the right-of-way. The temporary construction right-of-way will be used as the primary transportation corridor during construction. Eliminating the passing lane by narrowing the right-of-way width would significantly restrict traffic flow along the right-of-way. Proper traffic flow minimizes project impacts by reducing the number of access roads that may need to be constructed and by minimizing construction duration. The proposed 95-foot right-of-way configuration will accommodate many of the necessary cuts and spoil storage area requirements along the proposed alignment, thereby reducing the number of additional TEWAs that will be required to safely construct the Pipeline and will minimize the total overall disturbance.

Where feasible (i.e., where topographic conditions allow), at palustrine forested and scrub shrub wetland crossings, the construction right-of-way will be reduced to 75 feet in width to minimize impacts to these resources. The neckdowns are shown on the Environmental Alignment Sheets (Appendix AA). Because TEWAs are typically required on either side of neckdowns, neckdowns within emergent wetlands were determined on a case-by-case basis depending on the quality of the wetland and the quality of the adjacent vegetation that would be disturbed by the TEWAs.

Steep slope or side slope areas will require the construction right-of-way to be greater than 95 feet in width. These conditions require unique construction techniques such as a "two-tone" right-of-way. Additional TEWAs are necessary for adequate spoil storage/staging and to ensure a safe working plane during construction. Sharp angles or points of intersection (PIs) along the alignment also require TEWAs on the working side of the right-of-way to provide adequate space to install pipeline field bends or "factory" bends and to ensure that stringing trucks (which will be greater than 100 feet in length) have the necessary turning radius to navigate the corner and stay within the "certificated construction limits." Areas where the construction right-of-way is greater than 95 feet in width are shown on the Environmental Alignment Sheets.

Temporary Extra Work Areas. In addition to the 95-foot wide construction right-of-way, site-specific characteristics of the right-of-way make it necessary to obtain TEWAs. Generally, these TEWAs are required for (but not limited to) the following:

- Steep slopes and side sloping areas to accommodate cuts and spoil storage requirements;
- Bore pits and spoil storage at road, canal, pipeline, and railroad crossings;
- Spoil storage, staging, and construction of drag sections such as at wetland crossings, residential/industrial areas, and road crossings, etc.;
- Waterbody and wetland crossings;
- Pipe and equipment staging;
- Areas where tie-ins require additional trench widths to allow workers to enter the trench and perform welds and to ensure Occupational Safety and Health Administration (OSHA) trench safety requirements are met;
- Sharp angles or PIs where additional area is required to account for the wide turning radius of stringing trucks (which can be greater than 100 feet in length);
- Topsoil segregation areas to ensure topsoil and subsoils are not mixed; and
- Timber staging/decking.

Road and stream crossings and tie-in locations are typically conducted with a separate construction crew to fabricate and install the pipeline across these features. To construct these crossings, additional work area is required to stage or accommodate the equipment, crew vehicles, pipeline materials, dig the trench, store the spoil and safely install the pipeline. Consequently additional TEWAs are required at these locations.

All of these areas are considered temporary disturbance and will be reclaimed in accordance with applicable regulations and any conditions of approval included in the right-of-way Grant.

Uncleared Storage Areas. During design of the construction footprint for the Pipeline, PCGP identified the need for additional work areas in various locations such as in dense, mature forested areas; in areas of steep slopes; and in areas where the route follows steep, narrow ridgelines. However, to minimize overall project disturbance, PCGP has specifically designated some areas as uncleared storage areas (UCSAs) rather than TEWAs. Unlike the TEWAs, the UCSAs will not be cleared of trees during construction. These areas will be used to store forest slash, stumps and dead and downed log materials that will be scattered across the right-of-way after construction. The amount of this type of material is expected to be large enough to hinder construction activities if it were stored on the right-of-way. Therefore, these UCSAs will be important construction footprint features.

In some locations, the UCSAs may be used to store spoil or to temporarily park equipment between the mature trees. However, storage and temporary parking of equipment/vehicles will not occur immediately adjacent to the tree so as to minimize potential impacts (soil compaction or tree damage). In extremely steep and side sloping topography, the UCSAs may be required as a contingency location to contain rock which rolls beyond the construction limits. Along extremely steep and narrow ridgeline areas, logs, slash, and dead and downed material may be used as cribbing to contain excavated materials during construction (right-of-way grading and trenching activities). During restoration, some of the materials that are pulled out of the cribbing may roll beyond the construction limits. In these areas, it would be infeasible and impractical to retrieve all of the overcast materials because additional tree clearing and grading would be required to reach the materials.

The UCSAs are considered temporary disturbance because they will not be cleared and the materials (i.e., slash, stumps and downed and dead material, etc.) stored within them will be removed during restoration activities (see Appendix P – Leave Tree Protection Plan).

1.3.2 Construction Access Roads

Existing egress and ingress points to and from the construction right-of-way have been identified. These points have been identified to allow for safe, efficient construction and movement of equipment and materials. Appendix Y provides the Transportation Management Plan.

1.3.3 Contractor and Pipe Storage Yards and Rock Source and Permanent Disposal Sites

Contractor and Pipe Storage Yards

PCGP has identified yards and rail ports that may be used during project construction to off-load and store pipe and stage contractor equipment. The yards would also be used to stage equipment and store materials used during construction. Stored materials may include but are not limited to: construction mats, fencing materials, fuel and lubricants and stormwater control materials (straw bales, erosion control fabric, silt fence materials, etc.). The yards would also be used for contractor office trailers and employee parking facilities.

The priority locations for the off-site facilities that would be used for the Pipeline are existing industrial sites that have been previously paved, graded, and/or graveled; are proximate to the Pipeline route; and have rail service. The pipe storage yards and rail ports that will be used during construction will be secured during the easement acquisition phase and will depend on the availability of these sites at that time.

No contractor and pipe storage yards have been located on federally-managed lands.

Rock Source and Permanent Disposal Sites

Permanent disposal sites may be required to handle excess rock, spoil, or drilling mud that are generated during construction. Prime disposal sites for these materials include existing rock/gravel quarries and pits near the Pipeline route. Where existing quarries or pits are not available, PCGP has identified stable sites along the right-of-way as permanent disposal sites. The rock source and permanent disposal sites identified on federally-managed lands are listed in Attachment A to Appendix Q (Overburden and Excess Material Disposal Plan).

1.3.4 Aboveground Facilities

Aboveground facilities located on federally-managed lands include 2 mainline block valves and 5 communication towers and associated communications equipment buildings.

Launchers/Receivers and Mainline Block Valves

Mainline block valves will be located along the Pipeline according to DOT spacing requirements in 49 CFR §192.179. Generally, mainline block valves are manually operated. Each mainline block valve will occupy a site 50 x 50 feet (0.06 acre) located within the Operational Right-of-Way easement, and will be enclosed by a 7-foot high chain-link fence. PCGP has attempted to locate final placement of block valves adjacent to existing roads to minimize the length of new permanent access roads.

Permanent disturbance associated with the block valve assemblies located on federally-managed lands is summarized in Table 1.3-1.

Table 1.3-1
Summary of Disturbance Associated with Aboveground Facilities on Federally-Managed Lands

Facility	MP	Acres Disturbed [1, 2]	Jurisdiction
BVA #7 (Pack Saddle Road)	80.03	0.09	BLM
BVA #12 (Heppsie Mtn Quarry Spur)	150.70	0.09	BLM
	Total	**0.18**	

[1] Represents permanent/operation disturbance because construction disturbance associated with the aboveground facilities is included within the pipeline construction right-of-way.
[2] The mainline block valves will be located within areas disturbed by the construction right-of way or within associated aboveground facility footprints (i.e., meter stations and the Klamath Compressor Station); however, the acres provided will remain as permanent disturbance associated with these graded, graveled and fenced facilities.

Gas Control Communications

The meter stations and compressor station will require a communications link with the gas control monitoring system Therefore, radio towers will be required at each meter station and the compressor station. In order to communicate with these sites, PCGP plans to utilize space at existing mountaintop radio communications sites. Appendix D provides the Communication Facilities Plan for federally-managed lands. Table 1.3-2 provides the locations of the proposed communication system required for the Pipeline on federally-managed lands.

Table 1.3-2
Location of Existing Communication Towers on Federally-Managed Lands

Site Name	Location							Jurisdiction
	Latitude			Longitude			County	
Blue Ridge	43	16	16	124	5	9	Coos	BLM
Signal Tree (Kenyon Mtn.)	43	0	7.4	123	46	44.3	Coos	BLM
Flounce Rock	42	43	40.4	122	36	33.1	Jackson	BLM
Robinson Butte	42	21	51.4	122	22	54.1	Jackson	Forest Service
Stukel Mountain	42	5	46.0	121	38	1.0	Klamath	BLM

1.4 CONSTRUCTION PROCEDURES

The Pipeline will be designed, constructed, operated and maintained in accordance with DOT regulations in 49 CFR Part 192, *"Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards;*" 18 CFR § 380.15, "*Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing, and Maintenance of Rights-of-Way and the Construction of Aboveground Facilities;*" and other applicable federal, state, and local regulations. In addition to the DOT requirements listed above, PCGP will construct and reclaim the Pipeline and aboveground facilities in accordance with this POD. Multiple plans, summarized below (see Table 1.4-1), have been developed in coordination with the BLM, Forest Service, and Reclamation. These plans detail the construction and protective methods/measures, which PCGP will implement on federally managed lands. (The Upper Rock Creek ACEC Plan – formerly Appendix AA – has been removed from the POD due to the revised boundary in the 2016 BLM RMP; the Pipeline route will not cross the ACEC.)

Table 1.4-1
Summary of POD Appendices

Appendix	Plan	Summary
A	Aesthetics Management Plan for Federal Lands	This Plan describes actions designed to protect and/or meet the visual resource management objectives.
B	Air, Noise and Fugitive Dust Control Plan	This Plan describes the practices that will be implemented during construction of the Pipeline to minimize or control the potential impacts to air quality or the impacts caused by noise or fugitive dust.
C	Blasting Plan	This Plan provides guidelines for the safe use and storage of blasting materials proposed for use during construction of the Pipeline. This Plan also includes the actions PCGP and the BLM will undertake prior to use and development of the Heppsie Mountain Quarry for construction of the Pipeline.
D	Communication Facilities Plan	This Plan describes the construction, modification, operation and maintenance of communication facilities necessary for the operation of the Pipeline.
E	Contaminated Substances Discovery Plan	This Plan outlines practices to protect human health and worker safety; and, to prevent further contamination in the event of an unanticipated discovery of contaminated soil, water or groundwater during construction of the Pipeline
F	Corrosion Control Plan	This Plan illustrates methods used to identify the corrosion control needs for the Pipeline (external, internal, and atmospheric), as well as methods to provide the required protection and mitigation.
G	Environmental Briefings Plan	This Plan outlines the environmental reporting procedures, briefings, or notifications that PCGP will provide to the federal land-managing agencies prior to construction, during construction, post construction, and during operations of the Pipeline. This Plan describes the information that will be communicated to the federal land-managing agencies' appointed supervisory and field staff, who will be involved in the Pipeline, to keep them informed of status, construction schedule, and progress.
H	Emergency Response Plan	The Plan identifies the standards and criteria which PCGP will follow to minimize hazards.
I	Erosion Control and Revegetation Plan	This Plan outlines the erosion control and revegetation procedures that PCGP will utilize during construction (as well as pre and post construction) of the Pipeline Project to minimize erosion, sedimentation and enhance revegetation success.
J	Federally-Listed Plant Conservation Plan	This Plan describes the conservation measures that will be implemented to minimize the potential effects to federally-listed plants that occur within the Pipeline area.
K	Fire Prevention and Suppression Plan	This Plan describes the measures to be used by PCGP and its contractors to ensure that fire prevention and suppression techniques are carried out in accordance with federal, state and local regulations.
L	Fish Salvage Plan	This Plan describes the salvage methods that will be utilized to minimize adverse effects to ESA-listed salmonids.
M	Hydrostatic Test Plan	This Plan details the hydrostatic testing process and associated BMPs.
N	Integrated Pest Management Plan	This Plan provides PCGP's management and staff with the necessary BMPs and decision-making tools to address the control of noxious weeds, invasive plants, forest pathogens, and soil pests across the Pipeline Project.
O	Klamath Project Facilities Crossing Plan	This Plan identifies Reclamation facilities and the crossing methods for these facilities.
P	Leave Tree Protection Plan	This Plan describes the measures that will be implemented during construction of the Pipeline to identify, conserve, and

Appendix	Plan	Summary
		protect selected trees within or along the edges of the certificated work limits (i.e., construction right-of-way, UCSAs, and TEWAs).
Q	Overburden and Excess Material Disposal Plan	This Plan identifies the proposed locations on federal lands that may be used for the permanent and temporary storage of excess rock, timber, and spoil generated during timber removal and construction of the Pipeline.
R	Prescribed Burning Plan	This Plan provides the applicable protocols and BMPs that would be implemented if it is necessary to burn excess forest slash generated from right-of-way clearing operations.
S	Recreation Management Plan	This Plan provides the protocols that will be followed to aid in maintaining recreation opportunities, limiting right-of-way access, and preventing user conflict on public lands and in the waterway within the Pipeline area,
T	Right-of-Way Marking Plan	This Plan identifies the survey standards and types of survey markings that will be used by PCGP on federal lands during the pre-construction, construction, and operational phases of the Pipeline.
U	Right-of-Way Clearing Plan for Federal Lands	This Plan outlines the methods that PCGP will implement during timber removal within the construction right-of-way and TEWAs.
V	Safety & Security Plan	This Plan identifies measures to be taken by PCGP and its contractors to minimize hazards to persons working on and visiting the Pipeline during construction as well as to the general public and to comply with all applicable safety requirements and regulations.
W	Sanitation and Waste Management Plan	This Plan outlines the procedures that will be implemented by PCGP and its contractors to manage sanitation and waste materials during construction and operations of the Pipeline. The Plan is the principal source of direction for the management of solid and construction wastes that will be generated during construction.
X	Spill Prevention, Containment, and Countermeasures Plan	This Plan outlines the measures that will be implemented to minimize spill potential, contain any spillage, and protect areas of environmental concern from spills.
Y	Transportation Management Plan	This Plan covers all Pipeline transportation-related activities involving agency roads or rights-of-way. It also identifies ongoing cooperative procedures as well as Agency requirements for roads that are sub-standard and may be used for either timber haul or pipeline construction during the life of the Pipeline.
Z	Unanticipated Discovery Plan (Cultural Resource Preservation)	This Plan provides general guidelines for dealing with unanticipated cultural resource discoveries.
AA	Environmental Alignment Sheets	A set of photo-based maps depicting the centerline and construction right-of-way at a scale of 1":200' and the associated environmental features and requirements.
BB	Wetland and Waterbody Crossing Plan	This Plan outlines the construction methods, restoration procedures, and Best Management Practices (BMPs) that PCGP will utilize during construction of the Pipeline to avoid, minimize, and restore potential impacts associated with wetland and waterbody crossings, as well as to minimize potential effects to aquatic resources.

1.4.1 Construction Spreads

Each construction spread (see Table 1.2-1) will consist of all construction activities necessary to construct the Pipeline including:

- preconstruction survey, marking and staking (see Appendix T);

- forest/timber clearing (see Appendices U and P);
- grading (see Appendix I);
- installation of erosion control BMPs (see Appendix I);
- topsoiling (where required) (see Appendix I);
- trenching (see Appendix I);
- pipe stringing (see Appendix I);
- welding and coating pipe (see Appendix I);
- lowering pipe and backfilling (see Appendix I);
- hydrostatic testing (see Appendix M); and
- restoration (see Appendix I).

The construction spread activities will occur in sequence or in assembly-line fashion along the right-of-way with one crew following the next from clearing until final cleanup. As work proceeds, there are often periods between job tasks when work at a specific location on the right-of-way is delayed such as between trenching and pipe stringing or pipe stringing and welding.

PCGP will confine project-related disturbance to those areas shown on the Environmental Alignment Sheets (see Appendix AA). No disturbance will be allowed to occur outside of these areas without appropriate surveys (cultural, threatened and endangered species, residential, etc.), other federal, state, or local permits and prior written approval from FERC.

Construction Right-of-Way Egress and Ingress/Equipment Mobilization

Access roads that will be used during construction or crossed by the Pipeline have been identified (see Appendix Y). Appendix Y lists roads which will be used to access the construction right-of-way and identifies roads which will require improvement (i.e., brush clearing, grading, widening, etc.). All access roads/bridges that will require new construction and/or minor improvements such as widening, grading, sloping, and clearing, will be clearly staked and flagged prior to use as indicated in the Right-of-Way Marking Plan (see Appendix T). The construction contractors will not be allowed to use roads not previously identified for use without prior approval. The locations of egress and ingress points are shown on the Environmental Alignment Sheets (see Appendix AA).

Generally, equipment moved to the construction right-of-way will proceed down the right-of-way performing their job tasks and minimizing the need to transport the equipment to various areas along the right-of-way. PCGP has developed an Integrated Pest Management Plan (see Appendix N), which addresses measures (such as cleaning) that will be utilized to minimize the potential spread of noxious weeds, invasive plants, forest pathogens, and soil pests into and out of the construction right-of-way from equipment transport.

Off-Highway Vehicle Control

OHV traffic will be managed as provided in Appendices I (ECRP), S (Recreation Management Plan), and Y (Transportation Management Plan).

1.4.2 Road Crossings

Roads will be crossed in accordance with the Transportation Management Plan provided in Appendix Y.

1.4.3 Waterbody Crossings

In summary, 45 Riparian Reserve features, including 12 perennial streams, 31 intermittent streams and 2 wetlands are crossed by the alignment in 10 fifth field watersheds. Riparian Reserves on Forest Service lands include the Umpqua, National Forest (10); Rogue River-Siskiyou National Forest (4); and Fremont-Winema National Forest (4). Riparian Reserves on BLM-managed lands include Coos Bay District (14); Roseburg District (2); Medford District (9) and Lakeview District (2). See the Wetland and Waterbody Crossing Plan in Appendix BB to the POD for more detail on waterbody crossings.

Pipeline crossings of perennial waterbodies will be made nearly perpendicular to the axis of the waterbody channel, where feasible. The Pipeline route will avoid paralleling a waterbody within 15 feet or less, where feasible. Where possible, PCGP has located TEWAs so that they are no closer than 50 feet from waterbody boundaries. PCGP has applied to the U.S. Army Corps of Engineers and the Oregon Department of Environmental Quality for the necessary permits/certifications under the Clean Water Act and will adhere to these permits, which will govern wetland and waterbody crossings. For the Reclamation facilities, PCGP will implement the Klamath Project Facilities Crossing Plan (see Attachment O).

If water is present in the streambed at the time of construction, PCGP will utilize a dry-ditch crossing method (flume or dam and pump) to cross all minor and intermediate waterbodies consistent with the requirements of Section V.B.6 of FERC's Wetland and Waterbody Procedures (see Attachment B to Appendix I).

Hazardous materials, chemicals, fuels, and lubricating oils will be stored in upland areas at least 150 feet from waterbodies and wetlands (see Appendix X) or in accordance with FERC's Wetland and Waterbody Procedures. Restricted areas for storage of these materials will be clearly marked in the field. Concrete coating, refueling, and equipment maintenance activities will be conducted according to FERC's Wetland and Waterbody Procedures. Concrete trucks will not be washed on the construction right-of-way except at designated wash stations. All hazardous materials will be handled in accordance with the SPCC Plan (see Appendix X). If any unanticipated spill occurs during construction, PCGP will implement the procedures outlined in the SPCC Plan.

If water is present in any streambeds at the time of construction, PCGP will utilize temporary construction bridges during all phases of construction to cross these waterbodies. Equipment bridges will not be installed on intermittent waterbodies which are dry at the time of construction. However, if a storm occurs which results in water in the streambed of the otherwise intermittent waterbody, no equipment will cross the waterbody until the streambed dries up or until a bridge is installed. PCGP will not allow clearing equipment to cross waterbodies prior to bridge placement. Further, where feasible, PCGP's contractors will attempt to lift, span, and set the bridges from the streambanks. However, where it is not feasible to install or safely set the temporary bridges from the streambanks, only the equipment necessary to install the bridge or temporary support pier will cross the waterbody. All stream crossings on National Forest System (NFS) lands (whether intermittent or perennial, wet or dry) will have either: 1) a

bridge; 2) a temporary culvert with temporary road fill to be removed after work is completed; or 3) a low water ford with a rock mat.

These structures will be designed according to FERC's Wetland and Waterbody Procedures as well as according to the U.S. Army Corps of Engineers, Oregon Department of State Lands, Oregon Department of Environmental Quality and Oregon Department of Fish and Wildlife approvals. To provide equipment and material access up and down the construction right-of-way, it will be necessary to install equipment bridges outside the ODFW recommended in-water construction windows.

The temporary equipment bridges will be constructed to maintain unrestricted flow and to prevent soil from entering the waterbody. Soil will not be used to stabilize equipment bridges. Bridges will be designed according to FERC's Wetland and Waterbody Procedures (Section V.B.5.B) and will be maintained to withstand and pass the highest flow expected to occur while the bridge is in place. The highest flow expected will be determined during the season of construction and will take into account an evaluation of regional climate and physical conditions as well as existing historic stream-flow data and peak discharge statistics from nearby USGS gauging stations.

Where feasible, bridges will be designed to span the entire Ordinary High Water Mark (OHWM) of the waterbody. If it is not possible to span the OHWM with a bridge, a temporary culvert or pier may be required. These culverts/piers would be installed to minimize flow restrictions that may deflect stream flow to banks to prevent streambank erosion or scour. The ECRP in Appendix I (see Drawing 3430.34-X-0010) provides additional details for temporary bridges.

Temporary bridges will be set during clearing operations in Year One as well as during mainline construction in Year Two. The temporary bridges set during clearing operations would be temporarily removed after clearing is complete and will not be left in place across a waterbody over the Year One/Year Two winter. During mainline construction in Year Two, the temporary bridges will be reset and will be removed as soon as possible after permanent seeding. If there will be more than one month between final cleanup and the beginning of permanent seeding and reasonable alternate access to the right-of-way is available, equipment bridges will be removed as soon as possible after final cleanup as required by FERC Wetland and Waterbody Procedures (Section V.B.5.f.).

Sediment barriers will be installed immediately after initial disturbance of the waterbody or adjacent upland as shown on Drawings 3430.34-X-0005 and 3430.34-X-0007 in the project-specific ECRP (see Appendix I). Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.

All waterbodies supporting coldwater fisheries will be backfilled with material removed from the trench with the upper 1-foot of the trench backfilled with clean gravel or native cobbles.

Maintenance. During operation of the Pipeline, vegetation maintenance adjacent to waterbodies will be limited to allow for a riparian strip at least 100 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate

across the entire right-of-way using native plant species. On BLM and NFS lands where Riparian Reserves are affected, a 100-foot riparian strip (or less if the preconstruction riparian vegetation did not extend to 100 feet) will be planted adjacent (see Note 4 on Drawing 3430.34-x-0016, in Appendix I) to the waterbody and on both sides of the waterbody. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the Pipeline and up to 10 feet wide will be maintained in an herbaceous state with no vegetation greater than 6 feet in height. Trees that are located within 15 feet of the pipeline will be cut and removed from the right-of-way. Drawings 3430.34-X-0016 and -0017 provided in the ECRP (see Appendix I) illustrate the maintenance corridor along streams described in this section. It should be noted that PCGP will only maintain 30 feet of the Operational Right-of-Way easement (15 feet either side of the pipeline centerline) which will significantly minimize the impacts to forested riparian areas (see Drawings 3430.34-X-0016 and -0017 in the ECRP, Appendix I). Herbicides will not be used in or within 100 feet of a waterbody's mean high water mark, unless allowed by the appropriate agency.

1.4.4 Wetland Crossings

Consistent with FERC's Wetland and Waterbody Procedures (see Attachment B to Appendix I), PCGP has attempted to limit the width of the construction right-of-way through jurisdictional wetlands to 75 feet or less, where feasible. Where topographic conditions or other features or constraints require additional construction right-of-way widths, PCGP has requested modifications as part of its FERC application. The wetlands crossed by the pipeline are shown on the Environmental Alignment Sheets (see Appendix AA). See the Wetland and Waterbody Crossing Plan in Appendix BB to the POD for more detail on wetland crossings.

All TEWAs have been located at least 50 feet away from wetland boundaries according to FERC's Wetland and Waterbody Procedures, except where site-specific conditions prevent the setback (see Wetland and Waterbody Crossing Plan Attachment 1 in Appendix BB).

During construction, clearing of vegetation will be limited to the certificated construction right-of-way. Where feasible, the only access roads that will be used in wetlands are those existing roads that can be used with no modifications and without impacting the wetlands. To minimize potential impacts associated with the Pipeline, PCGP will utilize the measures outlined in FERC's Wetland and Waterbody Procedures.

1.5 OPERATION AND MAINTENANCE

As required by the DOT, FERC's guidance at 18 CFR §380.15, and maintenance provisions of FERC's Upland Plan and FERC's Wetland and Waterbody Procedures (see Attachments A and B to Appendix I), PCGP will test, operate, and maintain the Pipeline and associated facilities in accordance with DOT regulations provided in 49 CFR Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. PCGP will follow procedures specified in the company's Operations and Maintenance (O&M) manual, which is reviewed and audited by the DOT Pipeline and Hazardous Material Safety Administration (PHMSA) to ensure compliance with DOT regulations.

The right-of-way will be clearly marked where it crosses public roads, waterbodies, fenced property lines, and other locations as necessary. All facilities will be marked and

identified in accordance with applicable regulations and as described in the Right-of-Way Marking Plan (see Appendix T).

No herbicides will be used to control vegetation (i.e., brush and trees) on the Operational Right-of-Way easement unless approved or required by the land-managing agency (see Appendix N). Vegetation at aboveground facilities will be periodically maintained through mowing, cutting, trimming, and herbicides (selectively). Likewise, vegetation within the Operational Right-of-Way easement will be periodically maintained by mowing, cutting, and trimming (either by mechanical or hand methods). The Operational Right-of-Way easement will be maintained in a condition where trees or shrubs will be controlled (cut or trimmed) within 15 feet either side of the centerline (for a total of 30 cleared feet). A typical right-of-way cross section configuration for operation and maintenance is provided in the ECRP (see Figure 3430.34-X-0017 in Attachment C to Appendix I). Maintenance activities are expected to occur approximately every 3-5 years depending on the growth rate. During maintenance, vegetation will be cut/trimmed in 4- to 6-foot lengths and scattered across the Operational Right-of-Way easement to naturally decompose and to discourage OHV traffic. Occasionally, where site conditions allow, chipping of this material may also occur. PCGP believes that the slash materials generated and scattered across the Operational Right-of-Way during maintenance activities would not exceed the fuel loading specifications provided in the ECRP in Attachment I.

A typical plan view of vegetation maintenance within the pipeline right-of-way at waterbody crossings is shown in Figure 3430.34-X-0016 in the ECRP (see Attachment C to Appendix I). On federally-managed lands where Riparian Reserves are affected, a 100-foot riparian strip (or less if the pre-construction riparian vegetation did not extend to 100 feet) would be planted adjacent (see Note 4 on Drawing 3430.34-x-0016 to the waterbody and on both sides of the waterbody. To facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide would be maintained in an herbaceous state in this riparian strip. Herbicides would not be used in or within 100 feet of a waterbody's mean high water mark. Herbicides would only be used on federal lands (Forest Service, BLM, or Reclamation) if needed to control invasive species in accordance with each land management agency's management plans (see Appendix N).

To prevent damage or erosion caused by OHV use within the Permanent Right-of-Way, PCGP will install or maintain OHV barriers or controls as specified in the Recreation Management Plan (see Appendix S). PCGP will allow timber removal from the Permanent Right-of-Way easement; however, to ensure safety, PCGP will require a work plan including notification and information regarding the location, proposed activities, type of equipment, and weight-loading. PCGP prohibits digging, blading, grading, or similar activities over the Permanent Right-of-Way easement unless prior written approval is obtained by the encroaching party. Excavation of any type by a landowner or third party requires utilization of the One-Call System prior to the above listed activities.

Generally, repair of erosion control structures, drain tiles, and the need for additional fill may be required in the first year or two following construction in areas where the trench may have settled. Depending on the location of the trench settlement, minor repairs of waterbars or drain tiles may be necessary because the settlement could affect the drainage or proper function of these features and regrading and/or addition of fill material

may be necessary. Erosion control structures, drain tiles, and the need for additional fill will be assessed by either inspectors or operations personnel during routine inspections of the right-of-way. Areas susceptible to damage from large storm events will be inspected and repaired as appropriate depending on the nature of damage. Any disturbance associated with maintenance or repair activities would be appropriately revegetated as outlined in the ECRP in Appendix I. In addition, any areas of concern that are brought to the attention of either the inspector or pipeline operator will be assessed and repaired as necessary. Waterbody crossings will also be inspected periodically to ensure bank stabilization. A supply of emergency replacement pipe, leak repair clamps, sleeves, and related materials will be stored at the local district office for repair activities.

During operations, PCGP will implement a number of routine monitoring measures including:

- Performing land patrols which involve observing surface conditions on and near the right-of-way for indications of leaks, construction activity, and any other factors which might affect pipeline safety and operation. The term "patrolling" means the action of moving about over land or in the air or water for purposes of observing conditions on and adjacent to pipeline right-of-way for leaks, construction activity, facility marking, atmospheric corrosion, and other factors affecting safety and operations;
- Performing aerial patrols at least once per calendar year or after major flood events;
- Inspecting river crossings;
- Ensuring that class location survey is current; and,
- Conducting leak surveys at least once every calendar year as required by 49 CFR Part 192.

Surface travel along the right-of-way during operations will generally be limited to periodic valve inspections, corrosion and leak surveys, right-of-way maintenance including noxious weed control and any pipeline repairs that may be needed. In addition to routine monitoring, potentially affected portions of the pipeline will be inspected during or immediately following any major natural disturbance events, such as an earthquake, floods, wildfires, etc. PCGP may access the right-of-way by foot, truck, ATV, snow mobile, snow cat, or by helicopter depending on the accessibility of the area to be monitored. Precautions outlined in the Integrated Pest Management Plan (see Appendix N) will be taken to minimize the spread of noxious weeds and pathogens during operations and maintenance.

During inspections, PCGP employees will look for signs or indications of unusual activity on the right-of-way. Discoloration of plants or grasses may be indicative of a small leak. Any missing or damaged pipeline markers used to identify the location of the pipeline will be promptly replaced or repaired. Any evidence of unauthorized activity will be reported.

In addition to DOT-required surveys, PCGP will monitor the pipeline system using a supervisory control and data acquisition (SCADA) system. SCADA systems are used to monitor and control facilities or equipment in industries such as telecommunications, water and waste control, energy, oil and gas refining, and transportation. A SCADA system gathers information; transfers the information back to a control center; carries out necessary analysis and control; and displays the information in a logical and organized

fashion 24 hours a day, 7 days per week. The Jordan Cove LNG Terminal in Coos Bay will have the ability to control the pipeline. Oregon. Local maintenance and operations personnel will be available 24 hours a day, 7 days per week.

PCGP would protect the Pipeline from corrosion over time through a cathodic protection system. This system would input a low voltage electrical charge into the pipeline underground. Monitoring and maintenance of the cathodic protection system will be accomplished in compliance with the appropriate DOT regulations at least once per calendar year but with intervals not to exceed 15 months. Problems detected through the monitoring program will be corrected promptly and checked in a follow-up survey no later than 12 months after the initial discovery. Recording and transmitting pressure and temperature data will be controlled and/or monitored by PCGP's gas control monitoring system.

All of the information that PCGP gathers about its system will be used to tailor its safety and integrity management activities, so that parts of the system with the greatest need of attention receive greater scrutiny, such as residential areas or areas subject to growth and development. PCGP will decide where and when to internally inspect the Pipeline based on this information. Risk assessment of the Pipeline system determines what inspection criteria are required. This may include different types of assessment tools which provide specific types of information about the condition of the Pipeline.

1.6 TERMINATION AND ABANDONMENT

Prior to termination or abandonment of the Pipeline or aboveground facilities, PCGP would be required to file a new, separate application with FERC for that action. FERC would consider that action a new undertaking, and conduct an independent environmental review of the proposal, including consultations with other appropriate regulatory agencies. Only after documenting that review in an environmental document that meets the requirements of the NEPA, and public review and comment on that environmental document, as appropriate, would the FERC make a decision about whether or not to authorize the proposed abandonment actions.

The federal land-managing agencies would need to evaluate any proposed abandonment under the terms of the Right-of-Way Grant. The BLM must consider the final disposition of the Pipeline facilities in accordance with 43 CFR § 2886.

PCGP's abandonment or deactivation of the Pipeline and associated facilities would comply with applicable internal guidance documents and the applicable federal regulations, including those at 49 CFR §192.727, Abandonment or Deactivation of Facilities. The Pipeline would be abandoned in place, where necessary, and would be disconnected from all sources and supplies of gas, purged of gas, and have the ends sealed.

For aboveground facilities, once service is permanently discontinued, PCGP would complete one of the following activities:

- fit the valve closest to the abandoned portion of the pipeline with a locking device to prevent gas flow;

- install a mechanical device or fitting in the appropriate service line or meter assembly to prevent gas flow; or
- physically disconnect the piping to the customer from the gas supply source and seal the pipe ends.

Work necessary for abandonment or deactivation would be conducted within the Permanent Right-of-Way, where possible. For example, excavations may have to be constructed to seal pipe ends or remove block valves. PCGP would apply for the necessary authorizations from appropriate federal, state, or local government agencies for any activities related to abandonment that may occur outside of the Permanent Right-of-Way easement.

Pacific Connector Gas Pipeline, LP

Aesthetics Management Plan

Pacific Connector Gas Pipeline Project

September 2019

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1.0 INTRODUCTION

The Pacific Connector Gas Pipeline Project (Pipeline or Pipeline Project) crosses portions of the Southern Coast, Klamath Mountains and Cascade Mountain Range in the southwest region of Oregon. Landscape characteristics in the area are influenced by varying geographic, topographic and vegetation types and human developments (i.e., industrial, timber, agricultural, rural, etc.). Where the Pipeline Project is located on federal lands managed by the U. S. Forest Service (Forest Service) and Bureau of Land Management (BLM), PCGP recognizes a shared responsibility in the management of visual resources. To aid in managing these resources in accordance with respective agency land and resource management plans, PCGP has prepared this Aesthetics Management Plan (Plan).

The Plan is based on the analysis provided in PCGP's certificate application, specifically Resource Report 8, to the Federal Energy Regulatory Commission (FERC). A draft of this Plan was shared with the Forest Service and BLM in October of 2008 during the previous review. In January of 2009, the Forest Service responded to PCGP with a Scenery Management Analysis that provided recommendations for mitigation measures to improve the restoration and mitigation measures proposed in this Plan and determine what visual quality objectives (VQOs) would be met on Forest Service lands. PCGP subsequently met with the Forest Service and BLM in March of 2009 to discuss and clarify the Scenery Management Analysis and agreed on revisions and mitigation measures to be included in the Plan. The Federal Lands Scenery Management Analysis and Mitigation Recommendations is included as a part of this Plan (see Attachment 1). At that time, PCGP and the BLM agreed to implement appropriate mitigation recommendations outlined in Attachment 1 on BLM-managed lands crossed by the Pipeline near MP 123 east of Trail Post Office and Highway 62, in Jackson County and along Clover Creek Road between about MPs 176 and 177 in Klamath County. In 2019 PCGP incorporated a route modification at the Pacific Crest Trail crossing (PCT) which co-located the pipeline with existing FS roads (Routes #3720700 and #3720706) and included a bore underneath the trail at MP 167.78 to minimize impacts to trail users. The Forest Service revised the Federal Lands Scenery Management Analysis and Mitigation Recommendations to update the scenery analysis and recommended mitigation measures for the route modification and bored PCT crossing (see Attachment 1).

1.1 Purpose

The purpose of this Plan is to outline methods that PCGP will implement to ensure compliance with agency land and resource management plans pertaining to visual and aesthetic resources within the Pipeline Project area. This Plan establishes goals for managing visual resources as they relate to construction, reclamation and management of the PCGP Project and describes actions to be taken by PCGP to minimize impacts to visual resources.

1.2 Goals

- Goal 1: Compliance with Aesthetic Management Objectives detailed in BLM's Resource Management Plans (RMPs) issued in 2016 and Forest Service's Land and Resource Management Plans (LRMPs). Throughout the construction phase and pipeline operation, PCGP will utilize the measures set out in this Plan to minimize impacts to the overall aesthetic/visual quality of the Pipeline right-of-way over time.

- Goal 2: Minimize Potential Adverse Project Effects on Aesthetic Resources. Minimize project-related adverse effects on aesthetic/visual resources visible from key observation points.

- Goal 3: Protect Areas of High Visual Sensitivity. Protect and minimize modifications to sensitive viewsheds located along Big Elk Road (NFS Road 37), the Pacific Crest National Scenic Trail, the Scenic Highway 62 corridor near Trail, Oregon, Highway 140, Clover Creek Road, and Dead Indian Memorial Highway.

1.3 Definition of Terms

Table 1-1
Definition of Terms

BLM Visual Resource Terminology	
Term	**Definition/Objective**
Visual Resource Management (VRM)	Element of the BLM's aesthetic resource classification system.
VRM Class I	Preserve the existing character of the landscape. This class allows for natural ecological changes, but does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
VRM Class II	Retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
VRM Class III	Partially retain the existing character of the landscape. The level of change to the landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
VRM Class IV	Provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.
Forest Service Visual Resource Terminology	
Term	**Definition/Objective**
Visual Quality Objectives	Component of the Forest Service's aesthetic resource classification and management system. A management objective for a landscape based on human scenic quality concerns and the local physiographic character of the landscape.
FG	Foreground
MG	Middle Ground
Maximum Modification	Activities including vegetative and landform alterations may dominate the characteristic landscape. However, when viewed as background they must visually appear as natural occurrences within the surrounding landscapes.
Modification	Activities may visually dominate the characteristic landscape. Landform and vegetative alterations must borrow from naturally established form, line, color or texture so as to blend in.
Partial Retention (PR)	Activities must remain visually subordinate to the characteristic landscape. Associated visual impacts in form, line, color and texture must be reduced

BLM Visual Resource Terminology	
Term	**Definition/Objective**
	as soon after the project completion as possible.
Retention (R)	Activities should not be visually evident. Contrasts in form, line, color and texture must be reduced during or immediately after the management activity.

1.4 Consistency with Other Plans

This Aesthetics Management Plan has been developed to be used in concert with PCGP's Recreation Management Plan and Erosion Control and Revegetation Plan (ECRP) for the Pipeline Project. Recreation resources may be impacted where the Pipeline crosses several trails and roads. Any barriers constructed to impede unauthorized off-highway vehicle (OHV), snowmobile and general dispersed recreation access should be designed in a manner that does not adversely impact the area's visual resources, where practicable and safe. Revegetation and mitigation efforts designed to achieve visual management objectives upon construction completion will also conform to methods detailed in the ECRP to meet water and soil quality standards.

2.0 VISUAL/AESTHETIC RESOURCES

Viewshed and scenic resource classifications established by the Forest Service and BLM were used to determine the visual/aesthetic resources found along the proposed pipeline alignment. These classifications categorize visually sensitive areas according to the agencies' visual impact criteria (see Table 1-1). The BLM VRM system consists of two stages – inventory and analysis. The inventory stage involves identifying the visual resources of an area and assigning them to inventory classes using BLM's visual resource inventory process. This process results in assigning VRM classes to visual resources within a BLM district and becomes an important component of the area's RMP. For the analysis stage, the BLM uses its *Manual 8431: Visual Resource Contrast Rating* as a guide to analyze and mitigate potential visual impacts from proposed developments. The rating system was devised to ensure that an earnest attempt is made to minimize potential visual impacts (USDI 2001).

The Forest Service uses the Scenery Management System (SMS) developed in *Landscape Aesthetics: A Handbook for Scenic Management, Agricultural Handbook 701* (1995). The SMS replaces the Visual Management System (VMS), which was developed in The National Forest Management, Vol.2, Agricultural Handbook 462 (1974). However, Forest Service LRMP covering visual management in the Pipeline Project area were written prior to 1995 and use terminology from the older Visual Management System; that terminology is also used here. A crosswalk between the two systems is described in *Landscape Aesthetics*.

2.1 BLM Sensitive Viewsheds

On BLM lands, all of the proposed alignment passes through lands designated as VRM Class IV. These are lands where major modification of the existing landscape character is allowed and the level of change can be high. General mitigation for Class IV areas is provided in Section 3.0 of this Plan.

A previous alternate pipeline crossing of Highway 42 in the Roseburg District would have been visible to motorists along a scenic forested stretch. However, the proposed alignment was relocated. Therefore, the Key Observation Point (KOP) for this area was eliminated, as further noted in Section 2.3.

The BLM Medford District manages the State Highway 62 corridor from Shady Cove, Oregon on BLM lands to north of Lost Creek Reservoir as an area with higher sensitivity, even though this area is VRM Class IV. The right-of-way will cross this viewshed east of the town of Trail from approximately MP 123.33 to MP 124.23. The alignment in this area will follow a ridgeline up from the Rogue River crossing through a stand of mixed evergreen forest interspersed with shrub and brushlands. Past logging, roads, and residential areas comprise some of the land uses in the areas visible from Highway 62. Pipeline construction and the cleared right-of-way where it climbs the forested hill in the foreground/middleground will be visible from the Highway 62 corridor in the immediate vicinity of Trail (see the Trail Post Office KOP description below), and from the Tiller to Trail Highway for approximately one mile.

Other areas with viewshed concerns crossed by the right-of-way include two short BLM Lakeview District segments along Clover Creek Road (approximately MPs 176.15 to 177.04 and 179.58 to 179.72). Here, the alignment runs parallel and immediately adjacent to the road. PCGP's original proposed alignment in this area was rerouted along Clover Creek Road as recommended by the Forest Service and BLM land managers to avoid impacts to nearby Buck Lake resources. Pacific Connector's proposed realignment along Clover Creek Road ran parallel to the road but was off-set and would have remained hidden from road travelers by a buffer of trees. However, the Forest Service recommended that the route be realigned to be immediately adjacent to the road wherever possible to eliminate a forested strip between the Pipeline and Clover Creek Road. KOPs, discussed below, were also established in this area.

2.2 Forest Service Sensitive Viewsheds

Within the Rogue River-Siskiyou and Fremont-Winema National Forests, the Pipeline crosses viewsheds that are managed for Retention and Partial Retention VQOs (USDA 1989, 1990 and 1990a). Areas in these National Forests designated as having high visual sensitivity are clustered around the Cascade Crest in the Pipeline Project area south of Brown Mountain and Lake of the Woods where the Pipeline crosses Big Elk Road, the Pacific Crest National Scenic Trail, Clover Creek Road, and Dead Indian Memorial Highway. Construction, operation and maintenance are not compatible with the VQOs. Attachment 1 – Federal Lands Scenery Management Analysis provides recommendations for mitigation measures to improve the restoration and mitigation efforts of this Plan and determine what VQOs would be met on federal lands. The remaining National Forest System (NFS) lands in the Pipeline Project area are managed for Modification or Maximum Modification, and the Pipeline activities are compatible with these VQOs. Table 2-1 summarizes areas that have been identified as having the most sensitive viewshed characteristics for which the Forest Service and BLM visual impact criteria apply.

Table 2-1
Sensitive Viewsheds and Associated Mitigation within the PCGP Project

Milepost	Viewshed Area/KOP	Agency [1]	Visual Class or Objective	Sensitivity Level	Mitigation Methods[3]
24.37BR	Coos Bay Wagon Road	FERC		Moderate	2, 3, 4
161.07-161.64	Big Elk Road (NFS Road 37)	FS-RRS	FG,R	high	2, 4
167.46-168.15	Pacific Crest Scenic Trail	FS-RRS	FGR, FGPR	high	1, 2, 3, 4
167.49-167.92	Crest Trail/Highway Buffer	FS-FW	MG, PR	moderate	1, 3
168.40-169.00	Dead Indian Highway	FS-FW	FG, R	high	1, 3
169.00-175.4 [2]	Clover Cr. Road	FS-FW	FG, PR	moderate-high	1, 2, 4, 5

[1] FERC= Federal Energy Regulatory Commission; FS= Forest Service; RRS=Rogue River-Siskiyou; FW=Fremont-Winema
[2] MPs 169.37 to 170.04, 171.40 to 171.6, 172.72 to 173.1, and 174.8 to 174.95 are private lands and not subject to federal viewshed classification.
[3] Mitigation Methods are coded as follows: 1—Right-of-way Placement, 2—Revegetation, 3—Construction Practices, 4—Vegetative Screening, 5—Slash and Salvage Usage.

2.3 Key Observation Points

The FS and BLM identified eight representative viewing points or KOPs, described below, in sensitive viewsheds along the Pipeline (this does not include KOPs specific to the Jordan Cove LNG facility). These are areas where residents, motorists, recreationists, and other visitors might see pipeline construction and the permanent easement (upon completion of construction). At FERC's request, PCGP installed another KOP at the crossing of Coos Bay Wagon Road corridor (MP 24.37BR), on private lands, to determine how much of the route would be visible from the Wagon Road. Other KOPs were chosen based on their proximity to federal lands with high scenic qualities, visual sensitivity, and management objectives. These KOPs also serve as locales from which to monitor mitigation implementation and success. Section 3.4 of this Plan addresses specific mitigation measures for each KOP.

Resource Report 8/Appendix H.8 (Visual Assessment Excerpt/2015 FERC FEIS) contains visual simulation photos for the vicinity of the KOPs listed below. In Appendix H.8, representations of visual impacts at the KOPs for short-and long-term are presented.

Coos Bay Wagon Road (MP 24.37BR). At MP 24.37, the Pipeline would cross the historic Coos Bay Wagon Road. At the request of FERC, a KOP was installed at the road crossing to determine the impacts to travelers on the Wagon Road (this KOP is not numbered, and does not appear in the FERC's 2015 FEIS, as the reroute was incorporated after publication of the FEIS). Based on an impact assessment and visual simulation (see Appendix H.8 and Appendix I.8 to Resource Report 8), pipeline construction and the construction right-of-way would be clearly visible in the short-term from this KOP in the foreground/middle ground where the Pipeline crosses the road. However, because the crossing area is within an area of rotational timber harvest, much of the surrounding area, including the perpendicular road crossing, is within younger age-class timber, and the cleared right-of-way would not significantly contrast with surrounding visuals and vegetation types (Appendix I.8 to Resource Report 8). The Coos Bay Wagon Road crossing is on private lands, and views of the pipeline on background area hillsides are on BLM lands which are managed as VRM Class IV. Modification of viewsheds in Class IV areas is allowed under the BLM's RMP.

Highway 42 (Quiet Mountain Road Intersection). This KOP was on a stretch of Oregon State Highway 42 above the Camas Valley, where the proposed alignment previously intersected a BLM VRM Class II viewshed. However, the proposed alignment has been relocated about 0.80 mile south along Highway 42 and does not cross VRM Class II lands. The alignment was relocated to avoid an occupied Marbled Murrelet stand (R3027), and would now only cross VRM Class IV lands more than 1,000 feet west of bored HWY 42 crossing (at approximately MP 51.00 to MP 51.30). This KOP is no longer necessary, and has been eliminated.

Trail Post Office (near MP 123). The KOP (P2) at the Trail Post Office is northwest of where the Pipeline would cross Highway 62 and the Rogue River by a Horizontal Directional Drill. The KOP provides casual observers with foreground, middle, and background views of the forested hills that form the viewshed east of town. The surrounding hill and ridge tops are comprised of BLM Class III and IV viewsheds, but the Pipeline was rerouted to only occur within Class IV viewsheds. Construction and the permanent right-of-way would be partially visible from this KOP in the foreground/middleground where the Pipeline climbs the hill on private lands (and as its on private lands, there is not a VRM classification) and could present a moderate level of change in the short-term. Because the Pipeline right-of-way will clear a swath through what is now closed-canopy forest in the foreground/middleground, the contrast of texture, line, and color will be very apparent in the short term. Where the right-of-way is located along the ridgetop in VRM Class IV, the right-of-way will be in the background and mostly screened by existing vegetation. It is expected to be a moderate to low modification and will not dominate the view.

Appendix H.8 to Resource Report 8 provides photo simulations of the background views of the proposed right-of-way from this KOP—from existing conditions through year 25 after right-of-way restoration. The alignment depicted in Appendix H.8 reveals the ridgeline placement with some forest screening from existing vegetation and subsequent revegetation and color blending over the period of restoration.

Highway 140 (MP 145.57). This KOP (P3) is located along Highway 140, on private lands, east of Medford near Little Butte Creek, and provides a middleground/background view onto BLM land, which is managed as VRM Class IV. From here, observers will see the right-of-way in the foreground as it crosses private lands next to Highway 140, then in the middleground/background as it climbs a hill onto BLM land.

Big Elk Road (MP 161.41). Big Elk Road (FS 37) provides access for snowmobilers as well as paved summer access to anglers, hikers and others traveling to Lake of the Woods. It is in an area with the Foreground Retention visual quality objective on the Rogue River-Siskiyou National Forest and provides observers with both foreground and middleground perspectives of the right-of-way.

Appendix H.8 of Resource Report 8 provides detailed photo simulations of the foreground views of the proposed right-of-way and road crossing from this KOP (P4), presenting existing conditions through year 25 after right-of-way restoration. The images depict how boulders and slash could be placed to deter OHV use.

Pacific Crest National Scenic Trail (MP 167.78). This KOPs is located on the PCT, where the proposed Pipeline intersects the trail on the Rogue River-Siskiyou National Forest. The pipeline crosses the trail within late successional reserve timber at the point where the trail crosses existing Forest Road #3720700. The pipeline would be bored underneath the road and the trail, requiring no surface disturbance or vegetation removal on the PCT or immediately adjacent areas. The bore site and right-of-way to the east of the trail and trail crossing point would be in

Foreground Retention but would be screened from view by retained existing vegetation. The right-of-way to the northwest of the crossing would be adjacent and parallel to Forest Road #3720700 and would be visible from the road/trail intersection in the immediate foreground from 115 to 300 feet from the trail, until the road and right-of-way curve out of view to the west.

The FEIS provides detailed photo simulations of the foreground views of the right-of-way and trail from these KOPs,.

Clover Creek Road (intersection of Dead Indian Memorial Highway and Clover Creek Road (MPs 168.84, and 170.1, to 176.8). Located near a developing neighborhood of resort homes, three KOPs (P5, P6, and P7) provide observers with foreground, middleground and background distance zone perspectives along two scenic backcountry highways. Observers will see the right-of-way as it parallels Clover Creek Road heading east in the foreground, middleground and background.

The Forest Service suggested that the right-of-way be moved as close to Clover Creek Road as possible, based on site-specific conditions, to eliminate the strip of trees between the road and pipeline right-of-way. This puts the right-of-way immediately adjacent to the road, except in a few areas were physical (i.e., stream crossings) and topographic conditions prevented abutting the road. The placement will also potentially reduce impacts on land management for owners of the previously proposed buffer strip. Additionally, this "widening effect" as a result of the abutment along the Clover Creek Road corridor can provide travelers with more extensive views of the forested hills in the background.

Appendix H.8 to Resource Report 8 provides information on the KOPs for the Clover Creek Road area. Descriptions of KOP-P5, P6, and P7 in Appendix H.8 provide simulations of the right-of-way between MPs 170.1 and 176.8. KOP-P5 provides simulated views of the Pipeline-road abutment in the longview. Simulations from this point represent a view of the right-of-way looking east. This shows the extent of visual impacts of the Pipeline in the foreground and middleground. KOP-P6 provides potential views of the immediate foreground where the alignment would be immediately adjacent to Clover Creek Road in an area near the tributary to Spencer Creek. KOP-P7 provides another long-distance view of the right-of-way from the Clover Creek Road at MP 170.1. This series of three simulations in Appendix H.8 shows the typical visual effects that would occur in timbered landscapes along Clover Creek Road.

3.0 MITIGATION

Mitigation for aesthetic resources will be applied on a site-specific basis in areas classified as visually sensitive under agency resource management plans and per agency guidance (see Table 2-1), as well as areas of concern that may arise during and after construction. Generally, visual/aesthetic resource mitigation on all federal lands will be ongoing through all phases of construction. Descriptions of specific mitigation measures are detailed in the sections below. These measures are subject to change and could be expanded, replaced, or abandoned because of ongoing consultations with agency resource managers.

Mitigation measures taken to address other resource issues associated with the pipeline construction and right-of-way will reduce the visual impacts as well. These would include mitigation activities and standards and guidelines associated with wetland and waterbody crossing procedures, critical habitat, upland restoration, timber extraction, etc. These measures are identified in PCGP's other associated Management Plans for Federal Lands (e.g., ECRP, Recreation Management, Right-of-Way Clearing, etc.).

3.1 Project Design

During preliminary project design, PCGP identified visually sensitive areas based on information provided by the BLM and Forest Service. PCGP then designed the construction right-of-way and temporary extra work areas (TEWAs) to minimize impacts in these locations where possible. For example, in sensitive viewsheds at the Pacific Crest Trail, the pipeline alignment was realigned to be co-located with existing FS roads (Routes #3720700 and #3720706) and would be bored underneath the trail, requiring no surface disturbance or vegetation removal on the PCT or immediately adjacent areas. At the Dead Indian Road Memorial Highway crossing, the construction right-of-way has been reduced to 75 feet in width and TEWAs have been set back from the road crossings. At the Big Elk Road crossing, the construction right-of-way has been necked down to 50 feet in width and tapers out to the full 95-foot right-of-way width at 100 feet from either side of the road. These elements will maximize the retention of existing vegetation cover, thereby easing visual contrast during and after construction. Mid-term impacts on sensitive viewsheds are expected in areas where forest vegetation cannot be shaped and blended to soften the linear pattern of the pipeline right-of-way and retain the existing character of the landscape. On a case-by-case basis, PCGP will utilize the BLM's "A Sample List of Design Techniques for Mitigating Visual Impacts" (BLM Manual 8431, Appendix 3). In some cases, PCGP has already incorporated design techniques to mitigate visual impacts as outlined in BLM Manual 8431 (USDI 2001). For example, the alignment is designed to cross some visually sensitive areas at right angles, to set block valves back from crossings, and to minimize viewing time for casual observers. Additionally, Section 3.4 also provides details of the specific mitigation measures to be implemented in sensitive viewsheds. As previously noted, the alignment along the Pacific Crest Trail has been realigned to be co-located with existing roads and the trail would be bored to shorten the potential visual corridor effects. The alignment of the Pipeline along Clover Creek Road has been dictated by the Forest Service and BLM who have requested that the alignment parallel the road as closely as possible. PCGP has complied with this request, and FERC has previously selected the alternative alignment which abuts the road right-of-way where topographic conditions allow.

3.2 Construction Techniques

During construction and restoration in designated visually sensitive areas on federally-managed lands, PCGP and its contractors will strategically place construction debris (slash, boulders, stumps) and will shape and blend the right-of-way to the extent practicable to conform to preconstruction contours and the characteristic landscape to reduce contrast. In areas where the right-of-way creates openings adjacent to trails and roads, providing potential unauthorized access to OHV use, natural barriers will be used to prevent passage. In areas where natural barriers might prove ineffective, PCGP will construct and maintain fences and/or gates, using agency-approved materials and color schemes to better blend in with the characteristic landscape (see also the OHV control measures that are provided in the Recreation Management Plan in Appendix S of the Plan of Development for details on trail barriers and access issues).

Rock and boulder material that may be generated during construction could be used as trench backfill material where appropriate. PCGP has also selected disposal areas for excess rock and boulders. Excess rock could also be utilized to restrict OHV use on the right-of-way at selected road crossings or other potential openings. As described in the ECRP, large rock would also be used on the right-of-way as habitat diversity features where approved by the land management agency. PCGP will use these rock and boulder storage methods to ensure

enhancement and mitigation of visual resources along the right-of-way to the extent they are practicable and safe.

Per land management agency direction, edges of the cleared right-of-way may have additional timber cutting to scallop and feather the edges, to reduce the hard line of forested lands adjacent to the right-of-way. In these areas, Forest Service or BLM, landscape architects will direct PCGP on which trees to specifically cut down. Additionally, during re-planting of the right-of-way, agency landscape architects will also assist in targeting areas to plant more, or larger trees to further help reduce the contrast between the cleared right-of-way and surrounding forest lands (see Section 8.7.2.1 in Resource Report 8).

On-site visual deviations from existing conditions will take place throughout the entire length of the right-of-way. The deviations will be more measurable and lasting in areas that are currently forested, since the right-of-way will be a linear development with 30 feet of the permanent easement (centered over the pipe) maintained in an herbaceous and shrub condition. The 30-foot width will be maintained periodically (approximately every three to five years) with removal of trees within 15 feet of the centerline. Cut and fill slopes will be a short-term impact, since remediation earthwork will return all terrain to its approximate original contours. Use of uncleared storage areas (UCSAs) will not require forest canopy removal, but it is probable that some trees will be damaged in these areas during construction. Where trees are damaged in UCSAs located on federal lands, PCGP will be required to purchase the damaged trees as discussed in the Right-of-Way Clearing Plan and Leave Tree Protection Plan (see Appendices U and P to the POD). Some damaged trees might die eventually, but it is impossible to determine where this might occur. Damaged and/or dead trees would only be visible in the immediate foreground of the observer and would most likely occur at isolated spots in the right-of-way. Overall, these assumed damaged trees will most likely comprise little or no visual deviation when factored in with the greater deviation caused by the linear nature of the pipeline easement in forested areas. PCGP, along with the authorized agency representative on federal lands, will assess potential tree damage within the UCSAs from construction of the Pipeline to determine appropriate payment and to apply appropriate erosion control and restoration measures where determined necessary. Moreover, forest cleared within TEWAs and the right-of-way (except for the 30-foot maintained easement centered over the pipeline) will be allowed to regenerate to pre-construction conditions following restoration of the right-of-way as per the ECRP.

Off-site visual impacts created by construction practices are limited to road widening and upgrading. Depending on the site-specific terrain and existing visual resource conditions, PCGP will revegetate and reclaim these areas to eventually resemble pre-construction conditions.

3.3 Revegetation

In order to mitigate the linear pattern of the right-of-way on all lands, including federal lands, revegetation efforts will be initiated following construction (see the ECRP). These efforts are expected to provide short-term mitigation for visual contrast in color, line, and texture within two to five years. To the extent feasible, PCGP would use revegetation efforts to shape and blend the pipeline easement, enhance the setting, and mimic the natural features of the landscape. These measures would consist of revegetating all disturbed areas and replanting trees in TEWAs and any other areas of the temporary construction right-of-way that were forested prior to construction. On Forest Service and BLM forest lands (including forested areas classified as visually sensitive), PCGP will maintain a cleared 30-foot width centered over the pipe allowing

the remainder of the permanent easement to be reforested (see Drawing 3430.34-X-0017 in Attachment 2). This could allow trees to naturally reestablish along the edges of the permanent easement at a staggered, more natural-looking interval. Replacing slash in forested areas of the right-of-way during restoration activities will immediately affect the visual contrast in color and texture of the disturbed right-of-way areas. Over time, as the right-of-way revegetates and narrows in width and changes in form, texture and color, potential visual impacts would diminish.

Additionally, a row, or if necessary, clusters of trees and/or shrubs will be planted across the right-of-way to provide visual screens at key road and trail crossings in sensitive viewsheds. For all revegetation practices, PCGP and/or its contractors will only use agency-approved tree and plant species, in compliance with management plan objectives and in consultation with agency specialists.

3.4 Specific Mitigation for Key Observation Points and Sensitive Viewsheds

3.4.1 Key Observation Points

These Key Observation Points will provide a baseline from which to monitor mitigation implementation and success. Mitigation techniques may vary from what is listed below, depending upon ongoing monitoring and consultation with agency land managers. Mitigation for KOPs will also include all general mitigation measures detailed in the above sections (3.1 through 3.3). On NFS lands, additional recommendations are presented (see Attachment 1).

Coos Bay Wagon Road (MP 24.37BR). Based on an impact assessment and visual simulation (see Appendix I.8 to Resource Report 8), construction activities and the construction right-of-way would be visible in the short-term from this KOP in the foreground/middleground where the Pipeline crosses the road. However, because the crossing area is within an area of rotational timber harvest, much of the surrounding area, including the road crossing point, is within younger age-class timber, and the cleared right-of-way would not significantly contrast with surrounding visuals and vegetation types. The Wagon Road crossing is on private lands, and views of the Pipeline on area hillsides are on BLM lands which are managed as VRM Class IV. Modification of viewsheds in Class IV areas is allowed under the BLM's 2016 RMP.

As a starting point for reclamation and visual impact mitigation, PCGP will implement the mitigation recommendations detailed in Section 3.2 and 3.3 and further described in the ECRP to minimize potential visual effects in this area. In the middleground where the Pipeline climbs the hills, PCGP will seek to minimize contrast by slash placement and replanting immediately following construction with native trees, shrubs and restoration seed mixtures. During planning and construction, some trees on the edge of the right-of-way may be salvaged to aid in shaping the linear edges to blend in with the existing landscape and reduce contrast, where feasible, and per the direction of the BLM. This measure will be utilized where the Environmental Inspector and Chief Inspector determine it will be practical and safe. Within approximately 5 to 10 years after revegetation, the contrast, line and form of the right-of-way would be minimized in the middleground, although the 30-foot maintained permanent easement would still be noticeable.

Trail Post Office (near MP 123). The KOP at the Trail Post Office is northwest of where the Pipeline would cross Highway 62 and the Rogue River. The hills and ridge tops are comprised of BLM Class IV viewsheds. Revegetation, construction techniques, and slash and salvage usage will serve as essential mitigation measures at this KOP. For the Class IV viewshed in the background, existing tress would mostly mask both the construction and permanent easement

because of the direct ridgetop placement of the pipeline. As a starting point for reclamation and visual impact mitigation, PCGP will implement the mitigation recommendations detailed in Section 3.2 and 3.3 and further described in the ECRP to minimize potential visual effects in this area. PCGP will also implement the mitigation recommendations in the Federal Lands Scenery Management Analysis at this location (see Attachment 1); this would entail , measures to minimize soil color contrast in the foreground/middleground by regrading to approximate original contour, slash placement and replanting immediately following construction in this area with native grasses, shrubs and trees. Slash/chip redistribution and hydro-mulch will be utilized to dampen the color contrast. During planning and construction, some trees on the edge of the right-of-way would be salvaged to aid in shaping the linear edges to blend in with the existing landscape and reduce contrast, where feasible. Further, during restoration, tree planting along the 30-foot maintained easement on BLM lands, can also be shaped to ease the contrast in line, form, and color caused by the pipeline, as directed by the BLM.

These measures will be utilized where appropriate as determined by the BLM landscape architect, in consultation with the Environmental Inspector and Chief Inspector who will determine where it will be practicable and safe. Within approximately 5 to 10 years after revegetation, the contrast in line, form and color of the right-of-way effect would be minimized in the middleground, although the 30-foot maintained permanent easement would still be noticeable.

Highway 140 (MP 145.57). The KOP at the Highway 140 crossing is west of where the Pipeline would cross the highway and private lands in the foreground. The KOP provides casual observers with middle and background views of BLM land where the Pipeline climbs a hill onto a ridgetop. The hill and ridgetop are managed as VRM Class IV. Revegetation, construction techniques, and slash and salvage usage will serve as mitigation measures at this KOP. For the ridgetop in the background, existing trees would mostly mask both the construction and permanent easement because of the ridgetop placement of the pipeline. PCGP will implement the mitigation recommendations detailed in Section 3.2 and 3.3 and further described in the ECRP to minimize potential visual effects in this area.

Additionally, in the middleground where the Pipeline climbs the hill, PCGP will seek to minimize contrast by slash placement and replanting immediately following construction using native trees, shrubs and plants. During planning and construction, some trees on the edge of the right-of-way may be salvaged to aid in shaping the linear edges to blend in with the existing landscape and reduce contrast, where feasible, and per the direction of the BLM. This measure will be utilized where the Environmental Inspector and Chief Inspector determine it will be practical and safe. Within approximately 5 to 10 years after revegetation, the contrast, line and form of the right-of-way would be minimized in the middleground, although the 30-foot maintained permanent easement would still be noticeable.

Big Elk Road (MP 161.41). Within the Rogue River-Siskiyou National Forest, the Pipeline crosses an area managed for Foreground Retention with high scenic integrity. In Foreground Retention areas, management activities should not be visually evident. The viewshed consists of a scenic buffer of large trees on both sides of the Big Elk Road (FR 37). The right-of-way would cross directly perpendicular to the road. PCGP consulted with Forest Service representatives and determined that the construction right-of-way could be necked down to a width of 50 feet immediately adjacent to either side of the Big Elk Road crossing. The construction right-of-way would then expand from 50 feet to the full 95-foot construction right-of-way width at 100 feet from either side of the road. To ensure that the appropriate large trees are conserved on either side of Big Elk Road, PCGP's Environmental Inspectors would verify

the limits of the staked construction limits in conjunction with a Forest Service representative (see Leave Tree Protection Plan in Appendix P to the Plan of Development). PCGP will implement the mitigation recommendations detailed in Section 3.2 and 3.3 and further described in the ECRP to minimize potential visual effects at this road crossing, and a buffer of vegetation will mask the right-of-way on both sides of the road. PCGP will additionally revegetate the right-of-way using large native trees and shrubs to begin the mitigation process. All measures will be subject to agency approval. PCGP will also implement the mitigation recommendations in the Federal Lands Scenery Management Analysis at this location (see Attachment 1), which would entail:

- Soil color contrast mitigation;
- Edge/form mitigation- scalloping and feathering edges;
- Revegetate for Reduction of Width and Improving Form- clustering of planted trees;
- Treatment of TEWAs in highly visible areas- planting clumps of trees and arranging boulders;
- Root wad and boulder placement in immediate foreground- specific placement, burying, and arrangement of root wads and boulders;
- Planting shrubs;
- Screening- selection of leave trees;
- Plant deciduous trees and shrubs for fall color- within the pipeline corridor as well as within ECRP.

Simulations (see Appendix H.8) of the Pipeline crossing of Big Elk Road show the long-term visual effects of the permanently cleared 30-foot right-of-way. Although motorists would not be traveling at high speeds in this area, exposure to the right-of-way from both directions is limited to a few seconds, at most. This limited exposure minimizes any potential visual impacts associated with the Pipeline crossing. The densely forested foregrounds combined with the sharp angle of observation, length of time viewed, and relative size of the crossing's opening is such that the degree of contrast to the landscape is low and only briefly visually evident. However, motorists and year-round recreationists here could likely notice the contrast in landscape form, line, color and texture caused by the crossing. The Foreground Retention objective will not be met during the construction phase prior to successful revegetation. PCGP will revegetate the right-of-way using native trees and shrubs to begin the mitigation process. A buffer of vegetation will mask the right-of-way on both sides of the road and it is expected that within three to five years, Retention objectives can be achieved.

Pacific Crest National Scenic Trail. The area where the Pipeline intersects the PCT on the Rogue River-Siskiyou National Forest supports a stand of old-growth forest and is managed for Foreground Partial Retention and Foreground Retention to maintain the aesthetic forest appeal for trail users. The typical construction right-of-way width is 95 feet, which could devalue this trail crossing segment during construction. However, to minimize impacts to the scenic quality of the area, PCGP has realigned the pipeline construction right-of-way to be co-located with existing FS roads (Routes #3720700 and #3720706) and included a bore underneath the trail, requiring no surface disturbance or vegetation removal on the PCT or immediately adjacent areas. Although the contiguous forest is a landscape which cannot typically absorb a linear feature such as a corridor right-of-way, existing Forest Road #3720700 is a similar linear feature that would help absorb the visual impacts. By aligning the right-of-way with the road and clearing to the road edge, the right-of-way would appear as part of the existing road corridor rather than as a separate corridor. UCSAs (no tree clearing) have also been located behind

these neck downs, outside of the immediate foreground visual area, to minimize disturbance. These UCSAs will be used to store slash and stumps during construction that will be redistributed across the right-of-way during restoration. Additional impact minimization measures include:

- Construct/install scenery mitigation measures under the guidance of a scenery specialist to be on-site during time of construction.
- Reduce width of the corridor clearing to 75 feet in the visible immediate foreground from the trail crossing (out to 300 feet). Prior to construction PCGP will develop a detail bore design footprint, for Forest Service approval, that incorporates the 75-foot construction right-of-way "neck-down" between MPs 167.7 and 167.84 with any necessary TEWA adjustments.
- Flush-cut all stumps in the immediate foreground to less than 6-inch height.
- No grading of the corridor within the 75' neckdown segments below existing ground elevation to retain topsoil & shrubs with the exception of the 10' wide ditch zones and bore area.
- The duff layer (O horizon and A horizon) of the ditch zone and bore area to be stripped, segregated, and stored, then laid down after backfilling.
- Use timber mats during construction on the working-side of the 10' wide ditch zones and to protect soils and shrubs.
- Retain shrubs within the neckdown segments by mowing to six inches in height and protect vegetation with timber mats.
- Hydro-mulch seeding of all disturbed soils with colorant to reduce soil contrast.
- Remove on-site shrubs and ground cover plants from the 10' wide ditch zone and bore area, heeled-in root balls in a safe storage location, and then transplanted back into the ditch zone and bore area.
- Place duff with rubber-tracked equipment to avoid compaction, and hand crews rake the material out. Plant nursery trees along the edges in a scalloped arrangement.
- Logs and fallen trees placed in the corridor consistent with Forest Service direction.
- Provide adequate irrigation of plantings at Forest Service direction for 5 years after completion of the construction phase, and replacement of mortality that exceeds 30 percent.
- Plant nursery stock trees ranging from 5 to 12' in height along corridor edge in a scalloped and irregular manner, and in clusters no closer than 30' feet apart across the entire ROW within the visible foreground from the PCT.
- Root prune and transplant trees in a scalloped and irregular manner along corridor edge.
- Retain a screen of existing vegetation east of the PCT crossing site along Forest Road 3720-700 to screen views of the bore site and cleared ROW.
- Use a tree spade to transplant trees of 15-20 foot height into the ROW in clusters to immediately break up the linear edges and the barren swath, and plant clusters a minimum of 30-feet apart;
- Bury any root wads or boulders in the ROW to at least 1/3 the height of the boulder or root wad in order to maintain natural appearance.
- Monitor revegetation treatments on an annual basis to evaluate success and to determine if VQOs are being achieved or if additional efforts are needed. Continue monitoring efforts until the VQO of Foreground Partial Retention is achieved.

- Plant 1-2 gallon size shrubs to decrease the amount of time needed to address soil color contrast and the single plane of the open forest floor.

Placement of boulders, logs, root wads and planted vegetation would be guided by agency personnel during the reclamation process to further reduce visual impacts (see Attachment 1); these measures would also include:

- Soil color contrast mitigation;
- Edge/form mitigation- scalloping and feathering edges;
- Revegetate for Reduction of Width and Improving Form- clustering of planted trees;
- Treatment of TEWAs in highly visible areas- planting clumps of trees and arranging boulders;
- Root wad and boulder placement in immediate foreground- specific placement, burying, and arrangement of root wads and boulders;
- Planting shrubs and trees.

The expected result of the recommended mitigations is that the visual quality level would meet a foreground partial retention visual quality objective within 2 years. The hikers along this trail are very observant and the speed at which they travel allows them ample to time to view the right-of-way, so it is expected that they would notice more of the effects of the corridor, but the edges would be softened by vegetative growth. Plantings would soften the stark contrast of the corridor as they gain height and breadth; transplantation of 15-20' trees, distribution in irregular clumps, and use of uneven-aged plantings would hasten these effects. The ditch zone soils would quickly return to a color and texture that would blend with the existing ground layer with chip slash and hydro mulching to bring forbs and grasses into view.

Lakewoods Community and Clover Creek Road (intersection of Dead Indian Memorial Highway and Clover Creek Road). Viewsheds in this area are managed for Foreground and Middleground Retention and Partial Retention, but also contain areas of private lands with recently harvested timber and several clusters of rural residential homes. The proposed alignment would cross the Dead Indian Memorial Highway perpendicularly in a thick forest foreground setting (at MP 168.83). PCGP will implement the mitigation recommendations detailed in Section 3.2 and 3.3 and further described in the ECRP. These pipeline restoration efforts will include regrading to the approximate original contours, reseeding, scattering slash across the right-of-way, and replanting, which will minimize visual contrast of the right-of-way. During restoration, PCGP will plant trees within forested areas to within 15 feet of the Pipeline, which will allow a strip of trees to establish along the easement and between the Pipeline and the road in this area. Because the Pipeline was recommended to abut the road and to eliminate the strip of trees between the road and the Pipeline easement, the Forest Service and BLM would specify if tree planting would occur on federal lands between the centerline and Clover Creek Road (but not within 15 feet of the pipeline). PCGP will also implement the mitigation recommendations in the Federal Lands Scenery Management Analysis at this location (see Attachment 1), which include:

- Soil color contrast mitigation;
- Edge/form mitigation- scalloping and feathering edges;
- Revegetate for Reduction of Width and Improving Form- clustering of planted trees;

- Treatment of TEWAs in highly visible areas- planting clumps of trees and arranging boulders;
- Root wad and boulder placement in immediate foreground- specific placement, burying, and arrangement of root wads and boulders;
- Planting shrubs;
- Screening- selection of leave trees;
- Plant deciduous trees and shrubs for fall color.

As shown on the post-construction simulation for these KOPs in Appendix H.8 to Resource Report 8, moderate amounts of woody debris (cull logs, slash, and root wads) would be left on the right-of-way to discourage OHV use, but this could create unacceptable visual contrasts (see Attachment 1). The Year 25 simulation shows pine reforestation on the right-of-way, and in this view, the permanently cleared and maintained area directly over the Pipeline would be partially to completely screened from view of the road. This shows the extent of visual Pipeline impacts, over time, in the immediate foreground and middleground of Clover Creek Road. The series of three simulations shows the typical visual effects that would occur in timbered landscapes along Clover Creek Road.

Motorists on the highway are traveling at high speeds. Therefore, exposure to the right-of-way from both directions at the Dead Indian Memorial Highway crossing is limited to less than a few seconds at most, which minimizes any potential visual impacts associated with the pipeline crossing. The densely forested foregrounds combined with the sharp angle of observation, length of time viewed, and relative size of the crossing's opening is such that the degree of contrast to the landscape is low and only briefly visually evident.

Because of the placement of the right-of-way in relation to the two roads, the multi-land owner setting of the area, and the revegetation methods used at the crossings, it is anticipated that the visual quality objectives can be met at least in the mid-term. Additionally, PCGP plans to incorporate mitigation recommendations in the Federal Lands Scenery Management Analysis at this location (see Attachment 1).

Where the proposed alignment parallels some sections of federally-regulated sensitive viewsheds along Clover Creek Road (MP 169.5 to MP 187.3; approximately 17.8 miles) within the Fremont-Winema National Forest and on BLM (and private) lands, the alignment will abut the current road easement where feasible, as requested by the Forest Service and BLM. The Forest Service and BLM recommended this alignment so that the right-of-way would create more clearing near the road, and "widen" the appearance of the Clover Creek Road corridor. This additional clearing would open northern views to the Mountain Lakes Wilderness and other areas. Potentially, the new views created by abutting the right-of-way to the road easement would mitigate some of the distraction caused by the adjacent clearing. PCGP also relocated Block Valve 13, which was previously located adjacent to the Dead Indian Memorial Highway, at MP 169.48 on private lands. The block valve has been set back from Clover Creek Road and accessed from an existing private road.

While the northern views would increase towards the Mountain Lakes Wilderness, the cleared right-of-way could dominate the foreground view, especially to customary road travelers that are familiar with the existing closed-canopy views along the road. The right-of-way would change the form, line, color and texture of the existing forested conditions along the road which would likely attract attention to the new easement. Project restoration efforts including regrading to the approximate original contour, reseeding, scattering slash across the right-of-way, and replanting

conifers would minimize visual contrast of the right-of-way. Trees planted within forested areas (to within 15 feet of the pipeline), would allow trees to establish along the easement and between the pipeline and the road in this area. Because the alignment was recommended to abut the road and to eliminate the strip of trees between the road and the pipeline easement, the Forest Service and BLM would specify if tree planting would occur on federal lands between the pipeline centerline and Clover Creek Road. However, even with these restoration efforts, the recommended alignment may not be consistent with the Forest Service's visual quality objectives for Partial Retention (the alignment is consistent with BLM VRM Class IV objectives). As indicated in Table 1-1, under the Forest Service's Partial Retention designation, activities must remain visually subordinate to the characteristic landscape. Associated visual impacts in form, line, color and texture must be reduced as soon after the project completion as possible. PCGP will also implement the mitigation recommendations in the Federal Lands Scenery Management Analysis at this location (see Attachment 1), and per agency guidance.

3.4.2 BLM VRM Class IV Viewsheds

In addition to the sensitive areas described in the KOP section above, there are several areas where the right-of-way will cross various viewsheds. In sensitive viewsheds, the route has been confined to ridgelines where a minimal area of the right-of-way will be visible from surrounding lower elevations. The ridgetop placement in many areas also conforms to the line and form of the landscape. In other areas, the viewing distances from major roads are such that contrast to the landscape is minimized. Shaping and blending the right-of-way's often rigid linear shape is not practical for most of the right-of-way, considering that the construction footprint has been designed to construct the pipeline safely and effectively. Therefore, to shape, or feather the edges of the right-of-way, in many areas additional tree clearing would be required. In turn, this could cause additional impacts to other resources (i.e., wildlife habitat, watersheds).

To the extent feasible, PCGP will use revegetation efforts, in the long-term, to shape and blend the permanent easement with the natural features of the landscape and enhance the setting. The revegetation measures will consist of revegetating all disturbed areas and replanting trees in TEWAs and areas of the construction right-of-way that were forested prior to construction. The permanent easement, which is 50 feet wide on all lands, will be allowed to reforest up to 15 feet on either side of the pipeline. The 30-foot width will be maintained by removing trees and shrubs. This will allow trees to naturally reestablish along the edges of the permanent easement at a staggered interval, which will help soften the edge of the construction right-of-way and permanent easement over time.

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Attachment 1

(Federal Lands Scenery Management Analysis)

Pacific Connector Gas Pipeline Project

Final EIS

Appendix F8(b)

Visual Quality Assessment and Mitigation Plan

Rogue River, Winema and Umpqua National Forests

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Pacific Connector Gas Pipeline
Scenery Management Analysis and
Mitigation Recommendations

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August 10, 2015

The Pacific Connector Gas Pipeline (PCGP) project traverses three National Forests along its route from Coos Bay to Klamath Falls. These Forests use the Visual Management System, (VMS) to manage the visual resources and to analyze visual effects of proposed projects. The VMS uses a rating system known as Visual Quality Objectives, (VQO) to establish standards for scenery resource management.

The Visual Management System, Handbook 462 was published in 1974. Since then, Handbook 701 updates the most current Forest Service direction for scenery management. The Landscape Aesthetics, Scenery Management System utilizes a very similar rating system as the VMS that is used to evaluate project impacts to the visual quality. In addition, an appendix has been adopted as part of this direction to address the stability of scenic attributes as well as the direct visual effects of a project. Appendix J utilizes a scenic stability indicator to rate the stability of scenic attributes and how a project will affect that stability.
The three Forests involved in the PCGP planning process and route identification efforts have not formally adopted the Scenery Management System as Forest Plan standards. However, the direction to the Forest Service has been, since 1996, to incorporate the new system as we work on new projects. This analysis will utilize the existing visual quality objectives established in the land and resource management plans for the Rogue River, Winema and Umpqua National Forests, as well as apply the scenic stability indicator of Appendix J to address the conditions and trends that may place the scenery attributes and the proposed and recommended restoration efforts at risk.

The proponent's Aesthetics Management Plan for Federal Lands (AMP) included as attachment A to their Plan of Development proposes restoration efforts and some minimal mitigation measures that broadly address the effects to scenery.
However, where the route is in areas where the Visual Quality Objective is partial retention or retention these measures will not meet these objectives within the target time frame. This analysis has examined these areas and the proposed mitigations within the proponent's AMP and shows why that plan, as proposed is insufficient and would not comply with Forest Service objectives for visual resources.

This analysis looks at the proponents AMP, and then makes recommendations for mitigation measures recommended to improve the restoration and mitigation efforts and determines what VQO would be met.

The PCGP project route traverses National Forest System (NFS) lands in areas that

have very rocky and porous soils. It is expected that restoration efforts related to revegetation may require lengthy periods of time to meet the visual quality objectives. This is particularly true on the eastern side of the Cascade Range where rainfall is significantly less, the temperatures are colder and the species selection for revegetation is more limited.

PCGP Project Effects Incorporating the AMP Construction

Effects

The construction of this gas pipeline will require a 95 to 75 foot construction corridor for placement of the pipe itself. Additionally, temporary work areas (TEWAs) and uncleared storage areas (UCSAs) will be used at locations parallel to the actual pipeline excavation and laydown area. The construction and associated TEWAs would be cleared and graded to a level surface to provide a safe and stable work area. At the edges of this construction zone, the UCSAs will be used to store equipment during construction as well as excess boulders and root wads. The clearing of the right-of-way will create a sharp edged linear feature across a contiguously forested landscape. A ditch zone of 10' will be excavated for placement of the pipe while all tree stumps and shrubs will be removed except where specific design criteria specifies otherwise. (See PCT crossing site) The excavation will expose subgrade soils that will contrast with the color of the forest canopy. It is expected that the amount of boulders and root wads will be excessive in this landscape making it difficult to dispose of in a manner that will not affect scenery. Boulders scattered on top of the ground do not appear natural and root wads with cut stumps are very distracting if found in more than occasional amounts. The compaction of soils and loss of topsoil caused by construction equipment will affect the success of proposed revegetation.

Right-of-way Maintenance Effects

A thirty foot corridor centered directly above the pipeline shall be maintained for the fifty year life of the pipeline by removing trees greater than 15 feet and vegetation greater than 6 feet in height. Depending on the methods of clearing, the effects could be similar to road brushing which uses a thrashing technique that leaves a rough brushed appearance immediately after clearing. The 30 foot corridor, once the construction zone is revegetated and allowed to rehabilitate; will appear as a linear feature that is incongruent with natural terrain or even typical corridors such as roads that gradually climb the side hill rather than rise directly up a slope.

The construction techniques proposed by the proponent in designated visually sensitive areas are as follows:

a. Strategically place construction debris (slash, boulders, stumps,
b. Shape and blend the right of way to the extent practicable to conform with preconstruction contours and the characteristic landscape
c. Rock and log barriers used to prevent passage of OHV's.
d. Utilize rock and boulder material generated during construction as trench backfill material where appropriate.
e. Utilize storage methods to ensure enhancement and mitigation of

visual resources along the right of way to the extent they are practicable and safe.

f. Revegetate all disturbed areas and replant trees in temporary extra work areas (TEWAs) that were previously forested.

Specific Mitigation for Key Observation Points

Big Elk Road (MP 161.41)

a. "Neck-down" construction zone across road from 95' to 50'
b. Route shall cross directly perpendicular to the road
c. Revegetate with native trees, shrubs, and plants
d. Plant a row or cluster of trees and/or shrubs across the right of way to provide visual screens at key road and trail crossings in sensitive viewsheds.
e. Shorten the potential visual corridor by turning the corridor on both sides of the crossing
f. UCSA's eliminated within "necked-down" zones.

Pacific Crest Trail Crossing (MP 167.7-167.84) (PCT)

a. Construct/install scenery mitigation measures under the guidance of a scenery specialist to be on-site during time of construction.
b. Bore underneath PCT at existing road crossing to avoid surface disturbance and minimize scenic impacts.
c. Reduce width of the corridor clearing to 75' in the visible immediate foreground from the trail crossing (out to 300').
d. Flush-cut all stumps in the immediate foreground to less than 6-inch height.
e. No grading of the corridor within the 75' neckdown segments below existing ground elevation to retain topsoil & shrubs with the exception of the 10' wide ditch zones and bore area.
f. The duff layer (O horizon and A horizon) of the ditch zone and bore area to be stripped, segregated, and stored, then laid down after backfilling.
g. Use timber mats during construction on the working-side of the 10' wide ditch zones and to protect soils and shrubs.
h. Retain shrubs within the neckdown segments by mowing to six inches in height and protect vegetation with timber mats.
i. Hydro-mulch seeding of all disturbed soils with colorant to reduce soil contrast.
j. Remove on-site shrubs and ground cover plants from the 10' wide ditch zone and bore area, heeled-in root balls in a safe storage location, and then transplanted back into the ditch zone and bore area.
k. Place duff with rubber-tracked equipment to avoid compaction, and hand crews rake the material out. Plant nursery trees along the edges in a scalloped arrangement.
l. Logs and fallen trees placed in the corridor consistent with Forest Service direction.
m. Provide adequate irrigation of plantings at Forest Service direction for 5

years after completion of the construction phase, and replacement of mortality that exceeds 30 percent.

n. Plant nursery stock trees ranging from 5 to 12' in height along corridor edge in a scalloped and irregular manner, and in clusters no closer than 30' feet apart across the entire ROW within the visible foreground from the PCT.
o. Root prune and transplant trees in a scalloped and irregular manner along corridor edge.
p. Retain a screen of existing vegetation east of the PCT crossing site along Forest Road 3720-700 to screen views of the bore site and cleared ROW.
q. Use a tree spade to transplant trees of 15-20 foot height into the ROW in clusters to immediately break up the linear edges and the barren swath, and plant clusters a minimum of 30-feet apart;
r. Bury any root wads or boulders in the ROW to at least 1/3 the height of the boulder or root wad in order to maintain natural appearance.
s. Monitor revegetation treatments on an annual basis to evaluate success and to determine if VQOs are being achieved or if additional efforts are needed. Continue monitoring efforts until the VQO of Foreground Partial Retention is achieved.
t. Plant 1-2 gallon size shrubs to decrease the amount of time needed to address soil color contrast and the single plane of the open forest floor.

Dead Indian Memorial Road

a. "Neck-down" construction zone from 95' to 75' across the road
b. UCSA's eliminated within "necked-down" zones.
c. Shorten the potential visual corridor by turning the corridor on both ends of the crossing
d. Plant a row or cluster of trees and/or shrubs across the right of way to provide visual screens at road crossing
e. Revegetate with native trees, shrubs, and plants
f. Place barrier to discourage Off-highway vehicle use

Clover Creek Road

a. Relocate Block Valve 12 (this was done prior to FEIS)
b. Regrade to approximate original contour
c. Reseed construction right-of-way (ROW) area
d. Scatter slash across the right of way
e. Replant with seedlings

Site Specific Analysis of Effects on Scenery Resources

Big Elk Road Crossing

Forest Plan Standards
VQO- Foreground Retention

Visibility

The pipeline crosses Big Elk Road (FS RD 37) in a west-east alignment which runs through a mixed conifer forest. The route would be viewed from a foreground distance; however, the duration of the view is very short for those traveling on the highway at an average speed of 50mph. The broad 75' construction swath perpendicular to the road will attract the eye because of the existing vegetation that creates a tunnel effect along the roadway. The visual effect of a cleared corridor will be similar to an intersecting road. The corridor will be the single deviation from the contiguous edge of the timber along the road.

Visual Absorption Capability

The heavy timber canopy is very contiguous, decreasing the visual absorption capability. The terrain is very flat in this area. The view of the ROW is limited by the width and depth to which the viewer can see down the ROW. The visual absorption capability is not a factor in immediate foreground viewing situations.

Visual Effects

The immediate visual effects created by the ROW will be a strong linear feature with strong edges at each side. The color contrast of the exposed soils will be evident, and the scale of the opening will be uncharacteristic to the surrounding landscape. The berm, boulders, and root wads created to block OHV users from accessing the site will draw attention to the corridor as these negative elements detract from the natural appearing landscape.

Seasonal Changes

The ROW corridor will be most evident in the winter when the snow creates the strongest contrast to the coniferous forest. Spring, summer, and fall will be similar in effects other than the changing color of the seeded grasses and shrubs.

Expected Results of Proposed Mitigation

The immediate effects of the PCGP corridor to the visual resource are unacceptable modification. The 75' swath with the tall adjacent tree line edges will be uncharacteristic to the surrounding landscape. A small cluster of trees with a height less than 40' will not screen the open swath created by the corridor. The logs and boulders proposed to be strewn across the PCGP are unacceptable.
Placing root wads in the UCSAs is an unacceptable practice in all areas that are visible, regardless of the sensitivity level. After the grasses and shrubs begin to grow, the soil color contrast will be reduced as the exposed soils are covered. Shrubs will add texture and color variation to the flat plane.

It is expected that creating openings at this location will cause frost pockets and hamper revegetation efforts. Revegetation could take as long as 20-30 years if successful at all. This is seen in strip cut harvests in the area that have taken 30 years to revegetate. Once the PCGP corridor is revegetated the cleared width will be reduced to a minimum of 30 feet in width. The expected results of the proponent's restoration efforts will eventually meet modification, but not within five years. It is

expected that it could take 20 to 30 years to fully revegetate and at that time the PCGP project is expected to meet partial retention.

Forest Service Mitigation Measures

Potential/Recommended Forest Service Mitigation Measures

The following mitigation measures shall be done in the construction ROW and TEWAs from the edge of Big Elk Road to where the corridor makes the turn and is no longer visible from the Big Elk Road.

1.0 Soil Color Contrast Mitigation

1.1 Chip slash to:

a. mulch ROW to manage slash production;
b. reduce soil erosion; and
c. retain soil moisture to increase revegetation success.

1.2 Where using hydro-mulch to avoid erosion, use colorant (commercially available) dark brownish green to reduce color contrast.

2.0 Edge/Form Mitigation

2.1 Scallop edges by removing trees in areas designated by the Forest Service landscape architect in consultation with Pacific Connector's Environmental Inspector(s) to reduce the straight linear edge and change shadow cast patterns.

2.2 Feather edges of ROW by cutting some tall trees (40'+) along the immediate edge, leaving trees with heights of 10-40' in height for a distance of 50-100'. Feathering shall be done in accordance to advisement of Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

3.0 Revegetate for Reduction of Width and Improving Form

3.1 Transplant trees of 15' to 20' height into the ROW in clusters by using a tree spade to immediately reduce the sharp linear edge and break up the wide barren swath. Transplant 15- 20 trees per 1/8th mile to blend the corridor into existing tree densities, in accordance to advisement of Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

4.0 Treatment of TEWAS in highly visible areas

4.1 Transplant trees into the TEWAS in clusters by using a tree spade. Combine with partially buried (1/3-1/2 recess) boulders to create groupings for wildlife use and to appear more natural.

4.2 Treat compacted soils by sub soiling to aerate the soils where necessary as discussed in the ECRP, Section 10.

5.0 Root wad and Boulder Placement in Immediate Foreground

5.1 Every effort shall be made to bury all root wads and boulders within the ROW.

5.2 Boulders larger than one foot in diameter that are placed in the immediate foreground (300') shall be partially buried to approximately 1/3 the height of the boulder. Root wads (that cannot be buried) and boulders within the foreground shall be placed in groupings of approximately 3 root wads and 2 boulders. There shall be no more than about one grouping per 1/8th mile within Retention areas or Class I areas. In partial retention areas/Class II areas there shall approximately 3 groupings per 1/8th mile. See Diagram C – Linear Guideline Template for typical construction. All mitigation measures shall be constructed under the on-site advisement of Forest Service landscape architect in consultation with Pacific Connector's EI(s) during the time of construction.

6.0 Treatment of Soil Compaction

6.1 Subsoiling and other soil compaction mitigations shall occur in areas determined necessary as per the ECRP to reduce soil compaction and to improve success of revegetation efforts.

7.0 Planting Shrubs

7.1 Plant 1-2 gallon sized shrubs and protect with plant guards. This will reduce the soil contrast and the single plane of the open forest floor. Plant as designated on the site plan for the immediate foreground of the site.

8.0 Blocking from OHV use

8.1 Construct a berm with boulders to discourage access from OHV use.

9.0 Screening

9.1 Modify the view of the corridor for the viewer by leaving specific trees near the roadway that can be worked around, and transplanting trees of 10-15ft height in groupings in the immediate foreground, as designated by the Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

10.0 Plant deciduous trees and shrubs for fall color.

10.1 Plant willow, ceanothus, ribes, huckleberry, chinquapin as specified in the ECRP.

Site Specific Design Mitigations

See section with diagrams.

Expected Results of Recommended Mitigation

The expected result of the recommended mitigations is that the visual quality level may be partial retention in 10 years if revegetation efforts and mitigations are successful. The Scenery Management System does not specify a timeframe for meeting Retention or High Scenic Integrity; however, the Visual Management System requires that Retention VQO be met during or immediately after project completion.

Dead Indian Memorial Road Crossing

Forest Plan Standards
VQO- Foreground Retention

Visibility

The pipeline crosses Dead Indian Memorial Road (FS RD 37) in a west-east alignment which runs through a lodge pole ecotone vegetation type. The route would be viewed from a foreground distance; however, the duration of the view is very short. The broad 75' construction swath will attract the eye because the existing vegetation that creates a tunnel effect along the roadway. The northwest pipeline alignment bends approximately 600' from the edge of the road reducing the sight line distance down the corridor.

Visual Absorption Capability

The heavy timber canopy is very contiguous, decreasing the visual absorption capability. The terrain is very flat in this area. The view of the ROW is limited by the width and depth to which the viewer can see down the ROW.

Visual Effects

The immediate visual effects created by the ROW will be a strong linear feature with strong edges at each side. The color contrast of the exposed soils will be evident, and the scale of the opening will be uncharacteristic in the surrounding landscape. The proposed berm, boulders, and root wads created to block OHV users from accessing the site will draw attention to the corridor as these negative elements detract from the natural appearing landscape. This crossing will also likely create a 'daylight' cut into the cut bank along the edge of the road. This cut will also attract the eye to the corridor.

Seasonal Changes

The ROW corridor will be most evident in the winter when the snow creates the strongest contrast to the coniferous forest. Spring, summer, and fall will be similar in effects other than the changing color of the seeded grasses and shrubs.

Expected Results of Proposed Mitigation

The immediate effects of the ROW corridor are unacceptable modification. The 75' swath with the tall adjacent tree line edges will be uncharacteristic to the surrounding landscape. The proposed logs and boulders strewn across the ROW are unacceptable. Placing root wads in the uncleared storage areas is an unacceptable practice in all areas that are visible. After the grasses and shrubs begin to grow, the soil color contrast will be reduced as the exposed soils are covered.

It is expected that creating openings at this location will cause frost pockets and hamper revegetation efforts. Revegetation could take as long as 20-30 years if successful at all. This is seen in strip cut harvests in the area that have taken 30 years to revegetate. Once this occurs the cleared ROW will be reduced to a minimum of 30 feet width. These practices will eventually meet modification, but not

within five years.

The Winema National Forest VQO in this area is foreground retention. This proposal does not meet this objective, and is never expected to meet it, although there will be a filling in of vegetation and softening of appearance overtime.

Forest Service Mitigation Measures Recommended Forest Service Mitigation Measures

The following mitigation measures shall be done in the construction ROW and TEWA(s) from the edge of Dead Indian Memorial Road to 600 feet beyond the immediate foreground.

1.0 Soil Color Contrast Mitigation

1.1 Chip slash to mulch ROW to:

a. manage slash production;
b. reduce soil erosion; and
c. retain soil moisture to increase revegetation success.

1.2 Where using hydro-mulch to avoid erosion, use colorant (commercially available) dark brownish green to reduce color contrast.

2.0 Edge/Form Mitigation

2.1 Scallop edges by removing trees in designated areas to reduce the straight linear edge and change shadow cast patterns.

2.2 Feather edges of ROW by cutting tall trees (40'+) along the immediate edge, leaving tree heights of 10-40' for a distance of 50-100'. Feathering shall be done in accordance to advisement of Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

3.0 Revegetation for Reduction of width and improving form

3.1 Transplant trees into the ROW in clusters by using a tree spade to immediately reduce the sharp linear edge and break up the wide barren swath.

4.0 Treatment of TEWAS in Scenic Areas

4.1 Transplant trees that are root pruned a year in advance, into the TEWAS in clusters by using a tree spade. Combine with boulders to create groupings for wildlife use and to appear more natural.

5.0 Root wad and Boulder Placement in Immediate Foreground

5.1 Every effort shall be made to bury all root wads and boulders within the ROW.

5.2 Root wads and boulders placed in the immediate foreground (300') should be partially buried to approximately 1/3 the height of the boulder and 1/3 the height of the root wad. Cut faces should be directed away from the viewer

platform or concealed by boulders or berms. Root wads and boulders shall be placed in groupings of approximately 3 root wads and 2 boulders. There shall be about one grouping per 1/8th mile within Retention areas or Class I areas. In partial retention areas/Class II areas there shall be approximately 3 groupings per 1/8th mile. See Diagram C – Linear Guideline Template for typical construction. All mitigation measures shall be constructed under the on-site advisement of Forest Service landscape architect and in coordination with Pacific Connector's EI(s) during the time of construction.

6.0 Treatment of Soil Compaction

6.1 Subsoiling and other soil compaction mitigations shall occur in areas determined necessary as per the ECRP Section 4.2.3 to reduce soil compaction and to improve success of revegetation efforts.

7.0 Planting Shrubs

7.1 Plant 1-2 gallon size shrubs and protect with plant guards, in order to decrease the amount of time needed to address soil contrast and the single plane of the open forest floor. Plant as directed by the Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

8.0 Blocking from OHV use

8.1 Construct a berm with partially recessed boulders to discourage the access from OHV use. Construct as designated by the Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

9.0 Screening

9.1 Screen the corridor from the viewer by leaving specific trees near the roadway that can be worked around, and transplanting trees of 15-20ft height in groupings in the immediate foreground, as designated by the Forest Service landscape architect.

10.0 Plant deciduous trees and shrubs for fall color.

10.1 Plant willow, ceanothus, ribes, huckleberry, chinquapin as designated in the ECRP.

11.0 Reconstruct the cut bank

11.1 Recontour the cut bank to discourage OHV access, and to reduce the distractive effect of to the edge of the roadway as advised by Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

12.0 Scenic Stability

12.1 Fund off-site mitigation actions for Forest Service project work related to design, NEPA, and implementation of thinning and a fuel break along the highway. This project would thin trees in a variable transition zone 50 to 500 feet in width along the highway, to reduce tree density, fuel loadings, and percent of canopy closure appropriate to the species. This mitigation project

would open up the stands and reduce the risk of losing existing scenic attributes, and recommended mitigation efforts in the event of a large stand replacement fire.

Expected Results of Mitigation to Meet Partial Retention VQO

The expected result of the recommended mitigations is that the visual quality level may be Partial Retention in 10 years if revegetation and mitigations are successful. The Scenery Management System does not specify a timeframe for meeting Retention or High Scenic Integrity; however, the Visual Management System requires that Partial Retention VQO be met during the first year or immediately after project completion.

Mitigations to Meet Retention VQO

The forest plan standard for this area is Foreground Retention.
This means that impacts are not visually evident from a foreground view.

The pipeline would have continued effects of a 30' overstory strip opening, meaning that for a distance of 600ft in one direction and 600ft in the other there will be an open sky strip. This is due to the removal of trees over 15ft and shrubs over 6ft. Because this strip is retained throughout the existence of the pipeline in this location, retention would not ever be met; given the recommended mitigation measures within and along the edge of the ROW.

Granted this strip would be seen from a moving car only for a short period of time, but the Visual Management system does not address duration of the view of an impact, other than to consider duration in the scenic class inventory. Due to the sensitivity level of this road, along with the scenic attractiveness and viewed distance, this area was assigned a Retention VQO in the Forest Plan standards and guidelines.

The recommended visual mitigation calls for softening the strip effect by scalloping and feathering the edges (2.1 and 2.2). This would soften the effect but would not make the strip "not visually evident". In order to meet retention, the strip effect must be addressed. Address meaning make it "not visually evident". To do this the surrounding timbered area would need to be sufficiently "opened up" to allow the open sky to be visible to the viewer traveling along this route, so that when the viewer drives by the crossing the open sky is not differing from the visual experience provided on either side of the crossing. So, this would be a designed project that would create a gradual thinning that increased the open sky view as the viewer approached the crossing point until the opening sky view was no longer a strip within a contiguous forest, but just an open sky view afforded to the viewer that does not appear unnatural in form, line, color, and texture. This is a project that could occur beyond the ROW, probably a ¼ to ½ mile each direction of the crossing point, and for a 600ft on both sides of the road. This kind of project could mimic a natural occurrence such as an insect and disease opening that often occurs in this lodge pole

vegetation type. Over time this type of thinning would have to be maintained or the contiguous forest would "come back", and the strip over the pipeline would once again become visually evident. This type of treatment could also be considered in the form of a fuel break, which would be considered, within appendix J of the SMS an action that could improve scenic stability by reducing the potential breadth of a stand replacement fire to a scale that is within the natural range of variability.

If this type of approach was included in the chosen alternative, then retention could be met as soon as soil color contrast mitigation was successful, and transplanted trees within the 75' corridor reached 20ft in height. The transplanted tree density would need to mimic the modified basal area of the surrounding area to blend the corridor into the landscape. Retention would not be met immediately nor within a year or one growing season, but it could eventually be met.

Pacific Crest Trail Crossing

LRMP Standards
VQO- Foreground Partial Retention and Foreground Retention

Visibility

The PCGP ROW crosses the Pacific Crest Trail within late successional reserve timber, at the point where the trail crosses an existing road, Forest Road 3720-700. The pipeline would be bored underneath the road and the trail, requiring no surface disturbance of the trail or its immediate surrounds, and requiring no vegetation clearing within 115 feet either side of the trail. The bore site and ROW to the east of the trail and trail crossing point would be in Foreground Retention, but would be screened from view by retained existing vegetation. The ROW to the northwest of the crossing would be adjacent and parallel to Forest Road 3720-700, and would be visible from the road/trail intersection in the immediate foreground, from 115 to 300 feet from the trail, until the road and ROW curve out of view to the west.

Visual Absorption Capability

Although the contiguous forest is a landscape which cannot typically absorb a linear feature such as a corridor ROW, the existing Forest Road 3720-700 provides a similar feature that would help to absorb the visual impacts. By aligning the ROW with the road and clearing to the road edge, the ROW would appear as part of the existing road corridor, rather than as a separate corridor, which would help to absorb it into the existing landscape.

Visual Effects

The immediate visual effects would include soil color contrast to existing adjacent vegetation, excessive vegetative clearing uncharacteristic in width and breadth, hard, and hard linear edges.

As trees grow to a height of 20 feet, the edges would begin to soften as tree boughs would begin to blend with adjacent trees, and the width of the vegetatively cleared ROW would eventually be reduced to 30 feet.

Seasonal Changes

The ROW corridor would be most evident in the winter when the snow would create the strongest contrast to the coniferous forest. Spring, summer, and fall would be similar in effects other than the changing color of the seeded grasses and shrubs.

Expected Results of Proposed Mitigation Measures

The immediate effects of the cleared ROW corridor would be unacceptable modification.

The broad linear opening would create an excessive amount of visual disturbance,

with the effects of the proposed activity being visually unrelated to the characteristic landscape despite the visual absorption capacity lent by the existing road corridor. Seeding and transplanting would not be successful in blending the proposed changes in the foreground view with the existing landscape until the ground vegetation is restored and the hard linear edges of the clearing are softened. It is expected that the proposed mitigation measures would be successful in achieving partial retention within two years, given a revegetation survival rate of 70% or greater. Opening the forest canopy as proposed could create a frost pocket that would be difficult to revegetate in a timely manner; therefore, nursery stock, transplanting existing shrubs and trees, and irrigation would be necessary. Additionally, annual monitoring would be needed to evaluate revegetation success and recommend/implement any needed adjustments to attain partial retention within two years.

Proposed/Recommended Forest Service Mitigation Measures

The following mitigation measures shall be done in the construction ROW and TEWA(s) in the visible foreground, from the edge of the PCT to where the corridor makes the turn and is no longer visible from the PCT.

1.0 Soil Color Contrast Mitigation

1.1 Chip slash to mulch the cleared ROW to:
a. manage slash production
b. reduce soil erosion
c. retain soil moisture to increase revegetation success.

1.2 Where using hydro-mulch to avoid erosion, use colorant (commercially available) dark brownish green to reduce color contrast.

2.0 Edge/Form Mitigation

2.1 Scallop edges by removing trees in designated uncleared storage areas to reduce the straight linear edge and change shadow cast patterns.

2.2 Feather edges of ROW by cutting tall trees (40'+) along the immediate edge, leaving trees of heights at 10-40' in height for a distance of 50-100' to graduate the edge from mid-sized to full height. Feathering shall be done in accordance to advisement of forest service landscape architect and in coordination with Pacific Connector's EI(s).

3.0 Revegetate for Reduction of width and improving form

3.1 Plant nursery stock trees of 10' to 15' height into the ROW in clusters by using a tree spade to immediately reduce the sharp linear edge and break up the wide barren swath. Transplant existing trees 15-20' in height into the ROW. Space clusters a minimum of 30' apart.

4.0 Treatment of TEWAS in highly visible areas

4.1 Plant nursery stock trees of 10' to 15' height into the ROW in clusters by using a tree spade to immediately reduce the sharp linear edge and break up the wide barren swath. Combine trees with groupings of boulders to create clumps for wildlife use and to appear more natural. Transplant trees 15-20' in height into the ROW. Space clusters a minimum of 30' apart.

5.0 Root wad and Boulder Placement in Foreground

5.1 Every effort shall be made to bury all root wads within the pipeline ROW where visible from the trail.

5.2 Root wads shall not be placed in the immediate foreground (300'). Those placed within the foreground should be partially buried to approximately 1/3 the height of the root wad. Cut faces should be directed away from the viewer and cut ends concealed with soil and boulder placement. Root wads and boulders shall be placed in groupings of approximately 2 root wads and 3 boulders. There shall be about one grouping per 1/8th mile within Retention areas or Class I areas. In partial retention areas/Class II areas there shall be approximately 3 groupings per 1/8th mile. See Diagram C – Linear Guideline Template for typical construction. All mitigation measures shall be constructed under the on- site advisement of a scenery specialist during the time of construction.

6.0 Treatment of Soils, Forbs and Shrubs

6.1 Timber mats shall be used on the working side of the ditch zone to reduce soil compaction and save the existing forb and shrub layer.
6.2 Subsoiling and other soil compaction mitigations shall occur in areas determined necessary as per the ECRP Section 10 to reduce soil compaction and to improve success of revegetation efforts.
6.3 The corridor shall not be stripped or graded outside of the ditch zone and bore area. Shrubs shall be mown to a 6" height and trees shall be flush cut. Protect vegetation with timber mats.
6.4 On site shrubs and ground cover plants dug from the 10' wide ditch zone and bore area, heeled in root balls in a safe storage location, and then transplanted back into the trench zone.
6.5 The duff layer (O and A horizon) of the ditch zone and bore area shall be stripped, segregate, and stored, then laid down after backfilling. Duff shall be place with rubber-tracked equipment to avoid compaction, and hand crews shall rake the material out.

7.0 Planting Shrubs

7.1 Plant 1-2 gallon size shrubs and protect with plant guards to decrease the amount of time needed to address soil color contrast and the single plane of the open forest floor. Plant shrubs of varying sizes and species in groupings of 5 to 8.
7.2 Plant transplanted and root balled shrubs back into ROW and irrigate.

7.3 Replace all plants that are in exceedance of the 30% mortality criteria.

8.0 Plant Nursery Stock Trees and Transplant Trees

8.1 Plant nursery stock trees along the edges of the corridor to feather and scallop the edges. Trees shall be of varying heights from 5' to 12' in height and planted in an irregular manner along the edge to create a scalloped appearance. Root prune trees in areas designated by Forest Service representative one year in advance, and transplant root pruned trees with tree spade to the ROW edge.

9.0 Irrigation[1]

9.1 Maintain irrigation of planted and transplanted vegetation for 5 years after completion of the construction phase of the project. Irrigate all transplanted and nursery stock shrubs and trees. Replace vegetation as necessary to maintain 70% survival rate or better.

10.0 Scalloped Edge Treatment outside the ROW[2]

10.1 Thin the adjacent timber and scallop the edges of the corridor by removing trees to diminish the linear form of the ROW corridor, as directed by a Forest Service landscape architect.

Expected Results of Recommended Mitigation

The expected result of the recommended mitigations is that the visual quality level would meet a foreground partial retention visual quality objective within 2 years. The hikers along this trail are very observant and the speed at which they travel allows them ample to time to view the ROW, so it is expected that they would notice more of the effects of the corridor, but the edges would soften by vegetative growth. Plantings would soften the stark contrast of the corridor as they gain height and breadth; transplantation of 15-20' trees, distribution in irregular clumps, and use of uneven-aged plantings would hasten these effects. The ditch zone soils would quickly return to a color and texture that would blend with the existing ground layer with chip slash and hydro mulching to bring forbs and grasses into view.

The LRMP calls for partial retention within 2 years. This standard is expected to be achieved, provided the recommended mitigations are successful with a 70% survival rate of planted and transplanted trees, shrubs, forbs, and grasses. The corridor would be narrower and less linear; noticeable, but subordinate to the characteristic landscape.

[1] The irrigation System is to be part of the Compensatory Mitigation Plan

[2] Treatment outside of the ROW is to be part of the Compensatory Mitigation Plan

Clover Creek Road

LRMP Standards
VQO- Foreground Partial Retention

Visibility

The PCGP ROW is located directly adjacent to the Clover Creek Road for over 18 miles. Eight miles of these are NFS lands. The adjacent alignment will increase the apparent roadway corridor width from 54' to 149', almost tripling the existing width. This 95' additional width for the ROW is fully visible in an immediate foreground view. The cumulative effect of the project area across all jurisdictions will dominate the view for the entire 18 miles.

Visual Absorption Capability

There is no absorption capability that will lessen the visibility of this proposed right of way and its effects.

Visual Effects

The immediate visual effects include soil color contrast to existing adjacent vegetation, grossly uncharacteristic scaled opening in width and breadth; hard, linear edge, extensive number root wads, and boulders strewn in the uncleared storage areas.

The logs and boulders strewn across the ROW are unacceptable. Permanently placing root wads in the uncleared storage areas is an unacceptable practice in all areas that are visible. (Pg. 39, National Forest Landscape Management, Vol. 2.) After the grasses and shrubs beginning to grow the soil color contrast will be reduced as the exposed soils are covered. Shrubs will add texture and color variation to the flat plane. As trees grow to a height of 20 feet, the ROW edges will be softened, and the width of the ROW will eventually be reduced to 30 feet. Where adjacent to the 54' roadway, the full opening will be 84'.

Seasonal Changes

The ROW corridor will be most evident in the winter when the snow creates the strongest contrast to the coniferous forest. Spring, summer, and fall will be similar in effects other than the changing color of the seeded grasses and shrubs. Seasonal changes will not make enough difference to note in the foreground, because the scale of the opening and the adjacency to the road makes the effects undifferentiated by seasonal change.

Expected Results of Proposed Mitigation Measures

The immediate effects of the ROW corridor are unacceptable modification. The 95' swath with the tall adjacent tree line edges will be uncharacteristic to the surrounding landscape. The extensive number of logs and boulders strewn across the ROW is unacceptable. Placing root wads in the uncleared storage areas is an unacceptable practice in all areas that are visible. After the grasses and shrubs beginning to grow the soil color contrast will be reduced as the exposed soils are covered. Revegetation

could take as long as 20-30 years. Once this occurs the cleared ROW will be reduced to a minimum of 30 feet width. These practices will result in unacceptable modification.

Recommended Forest Service Mitigation Measures

The extensive project activities within immediate foreground of this road require site specific designed mitigation. See the Clover Creek mitigation measures by zone, and the template diagrams.

1.0 Soil Color Contrast Mitigation

1.1 Chip slash to mulch cleared ROW to: a. manage slash production, b. reduce soil erosion, and c. retain soil moisture to increase revegetation success.

1.2 Where using hydro-mulch to avoid erosion, use colorant (commercially available) dark brownish green to reduce color contrast.

2.0 Edge/Form Mitigation

2.1 Scallop edges by removing trees in designated areas to reduce the straight linear edge and change shadow cast patterns.

2.2 Feather edges of ROW by cutting tall trees (40'+) along the immediate edge, leaving trees of heights at 10-40' in height for a distance of 50-100'. Feathering shall be done in accordance to advisement of forest service landscape architect and in coordination with Pacific Connector's EI(s).

3.0 Revegetate for Reduction of Width and Improving Form

3.1 Transplant trees into the cleared ROW in clusters by using a tree spade to immediately reduce the sharp linear edge and break up the wide barren swath.

4.0 Treatment of TEWA(s) in highly visible areas

4.1 Transplant trees into the TEWA(s) in clusters by using a tree spade. Combine with groupings of recessed boulders to create clumps for wildlife use and to appear more natural.

5.0 Root wad and Boulder Placement in Immediate Foreground

5.1 Every effort shall be made to bury all root wads and boulders within Row clearing.

5.2 Root wads and boulders placed in the immediate foreground (300') should be partially buried to approximately1/3 the height of the boulder and 1/3 the height of the root wad. Cut faces should be directed away from the viewer and cut ends concealed with soil and or boulders. Root wads and boulders shall be placed in groupings of approximately 3 root wads and 2 boulders. There shall be about one grouping per 1/8th mile within Retention areas or Class I areas. In partial retention areas/Class II areas there shall be

approximately 3 groupings per 1/8th mile. See Diagram C – Linear Guideline Template for typical construction. All mitigation measures shall be constructed under the on-site advisement of a Forest Service landscape architect and in coordination with Pacific Connector's EI(s) during the time of construction.

6.0 Treatment of Soil Compaction

6.1 Subsoiling and other soil compaction mitigations shall occur in areas determined necessary as per the ECRP Section 4.2.3 to reduce soil compaction and to improve success of revegetation efforts.

7.0 Planting Shrubs

7.1 Plant 1-2 gallon size shrubs and protect with plant guards to decrease the amount of time needed to address soil contrast and the single plane of the open forest floor. Plant as designated by the Forest Service landscape architect and in coordination with Pacific Connector's EI(s).

8.0 Screening

8.1 Screen the corridor from the view by leaving specific trees near the roadway that can be worked around. Transplant trees 15-20ft in height. Construct groupings in the immediate foreground, as designated by the FS Landscape Architect.

9.0 Plant deciduous trees and shrubs for fall color.

9.1 Plant willow, ceanothus, ribes, huckleberry, chinquapin as designated by the ECRP.

Specific Site Designed Mitigations by Zone and Topography

These zones are shown on the template diagrams.

Zone A – Uncleared Storage Areas

This UCSAs are areas not cleared for construction but used for storage of equipment, construction materials and root wads and boulders. This zone is near the edge of the construction corridor where vegetation remains, and where thick forest creates a strong edge or wall. This edge needs to be "feathered" by thinning the trees, leaving larger, fire resistant species. After construction this zone shall only be used for storing root wads and boulders in areas that are not visible from the road. The root wad and boulder storage should be fully screened by existing topography, or transplanted vegetation. Root wads and boulders can be buried under earthen berms that are designed as gentle rises in scale with other topographic variation in the area to blend with the existing natural environment. All berms shall be seeded/hydro mulched with native seed mix, mulched with chips generated from on-site slash and fertilized to promote rapid revegetation. Transplanted trees and shrubs planted to screen storage areas shall be an average height of 15-20 feet in height. See transplanted berm diagram.

Zone B – Offside Topsoil and Subsoil Storage Area

This zone is an area across the pipeline trench that is utilized during construction to store topsoil and excavated soils from the pipeline trench. After construction this area shall be seeded/hydro mulched with native seed mix, mulched with chips generated from on-site slash and fertilized to promote rapid revegetation.
This zone shall have a minimum of 10 -15 transplanted trees depending on the density of trees in Zone A to immediately soften the edge of the clearing, and/or screen boulders and root wads. This zone may be used for burying boulders and root wads. See transplanted berm diagram.

Zone C – 30' Corridor Directly above Pipeline

This zone is centered directly over the pipeline and will remain open via clearing of trees greater than 15' in height, and shrubs greater than 6' in height. Within this 30' span root wads and boulders can be buried. After construction this area shall be seeded/hydro mulch with native seed mix, mulched with chips generated from onsite slash and fertilized to promote rapid revegetation. Boulder and root wad groupings may be designed into this corridor. See Boulder and Root wad Grouping Diagram. A maximum of about three groupings per quarter mile shall be placed within the entire block of zones. Groupings can be used to break up the open plan of the 30' corridor.

Zone D – Working Zone

This zone is between the existing road and the pipeline trench. During construction this area will receive the greatest level of equipment and truck traffic; therefore, soil compaction will be highest in this area. This area shall be wing subsoil treated to restore the soil aeration and improve the success of the restoration efforts. After construction this area shall be seeded/hydro mulched with native seed mix, mulched with chips generated from onsite slash and fertilized to promote rapid revegetation. Boulder and root wad groupings may be designed into this zone. Berms shall be designed to break up the flat plane of the construction working surface, and to bury boulders and root wads. Logs and slash shall be placed behind berm

Zone E – The Road Side Edge

The road side edge is the zone that is between the construction zone, and the edge of the existing road. This zone is the equivalent of an uncleared storage area in other areas, but adjacent to the Clover Creek Road, this area shall vary in width, usage and treatment depending on the existing topography and vegetation.

Where this zone is level, or within 5-10 feet of the roadway elevation, a minimum of 25% of the existing shrubs and trees shall be retained in clumps to provide diverse form, color and texture to the roadside edge. All areas that are impacted by construction shall be seeded/hydro mulched with native seed mix, mulched with chips generated from on-site slash and fertilized to promote rapid revegetation. There shall be no root wads, boulders or logs or slash placed in this zone.

Where this zone is sloping downward and away from the road at 30% or greater, vegetation high enough to screen the 30' corridor opening shall be retained. Root wads and boulders can be stored at the base of the slope meets the graded construction zone surface, where retained vegetation provides screening. Where this zone is sloping upward, and away from the road at 30% or greater, retained vegetation will provide diversity in form, color and texture. It is expected that where the road route is adjacent to a cut bank along the road that is greater than 10' in height, the PCGP ROW will be pulled back away from the cut bank by 20-30 feet. All areas that are impacted by construction shall be seeded/hydro mulched with native seed mix, mulched with chips generated from onsite slash and fertilized to promote rapid revegetation. There shall be no root wads, boulders or logs or slash placed in this zone.

Template Diagrams

The following template diagrams specify mitigation measures to be used based on the topography. The diagrams are to be used in conjunction with the linear guidelines. The diagrams are typical templates to be used under the advisement of the Forest Service landscape architect and in coordination with Pacific Connector's EI(s) that is available on site at the time of construction.

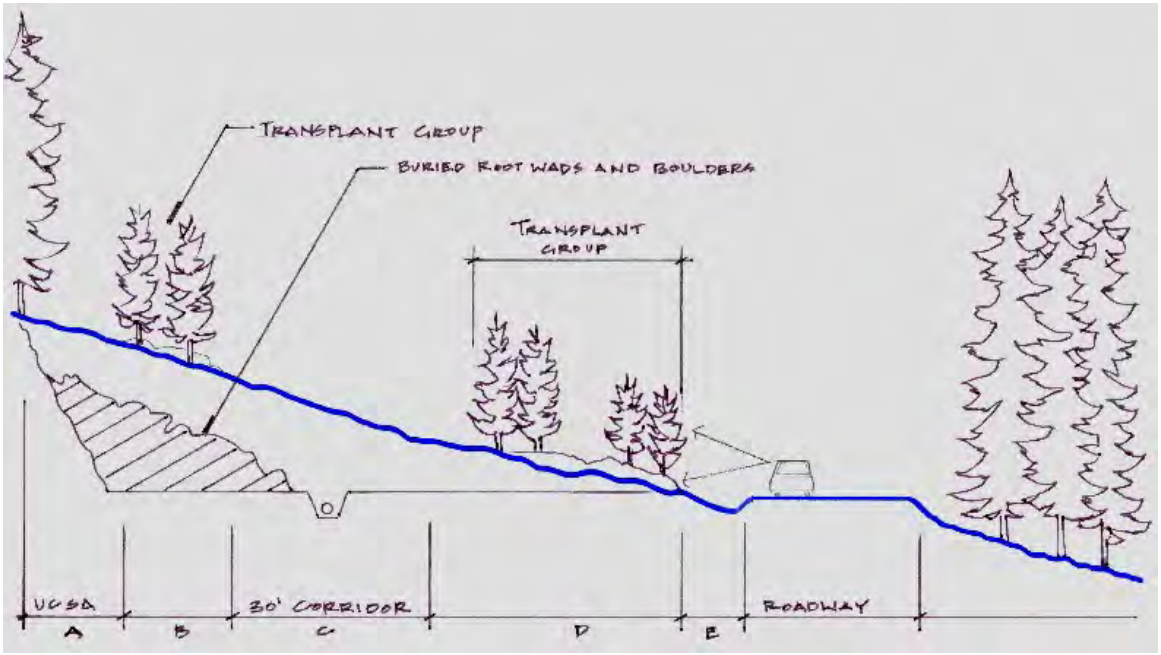


Diagram A –PCGP Above the Roadway

Bury root wads and boulders under the soil used to recontour the excavation zone. Construct transplant groupings as shown in the linear guideline diagram.

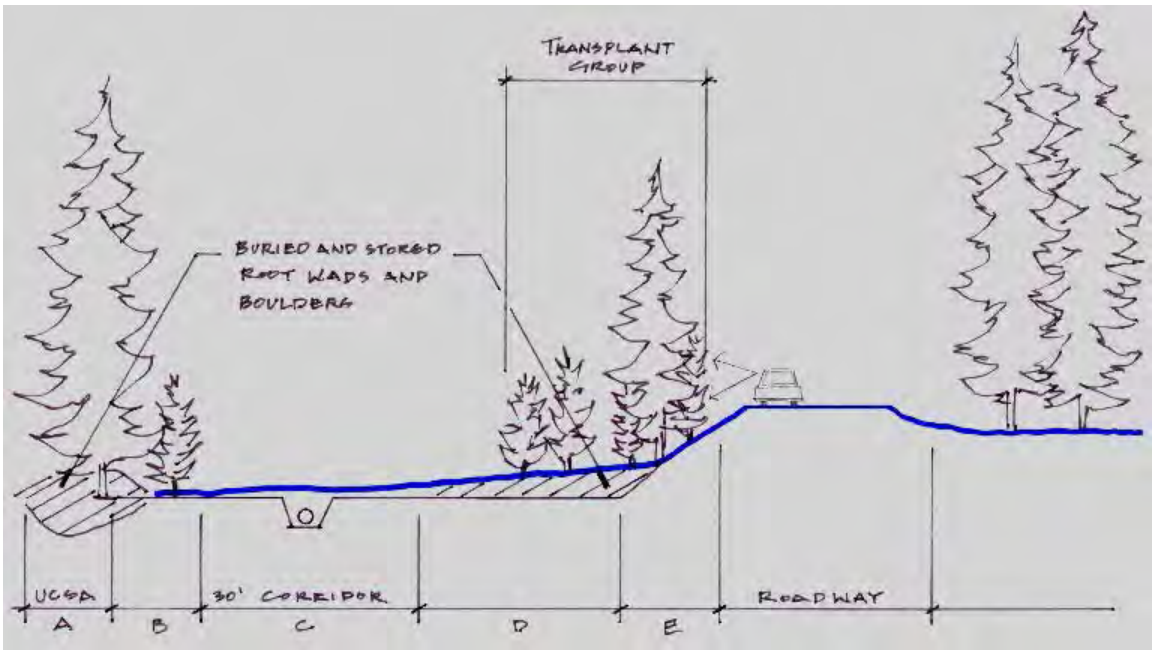


Diagram B –PCGP is below the roadway

Bury and store root wads and boulders where screened from the view of the viewer on the Clover Creek Road. Transplant trees and shrubs in groupings to create diverse spatial patterns, and to break up the strong linear form of the retained vegetation. Retain vegetation on the bank of the roadway.

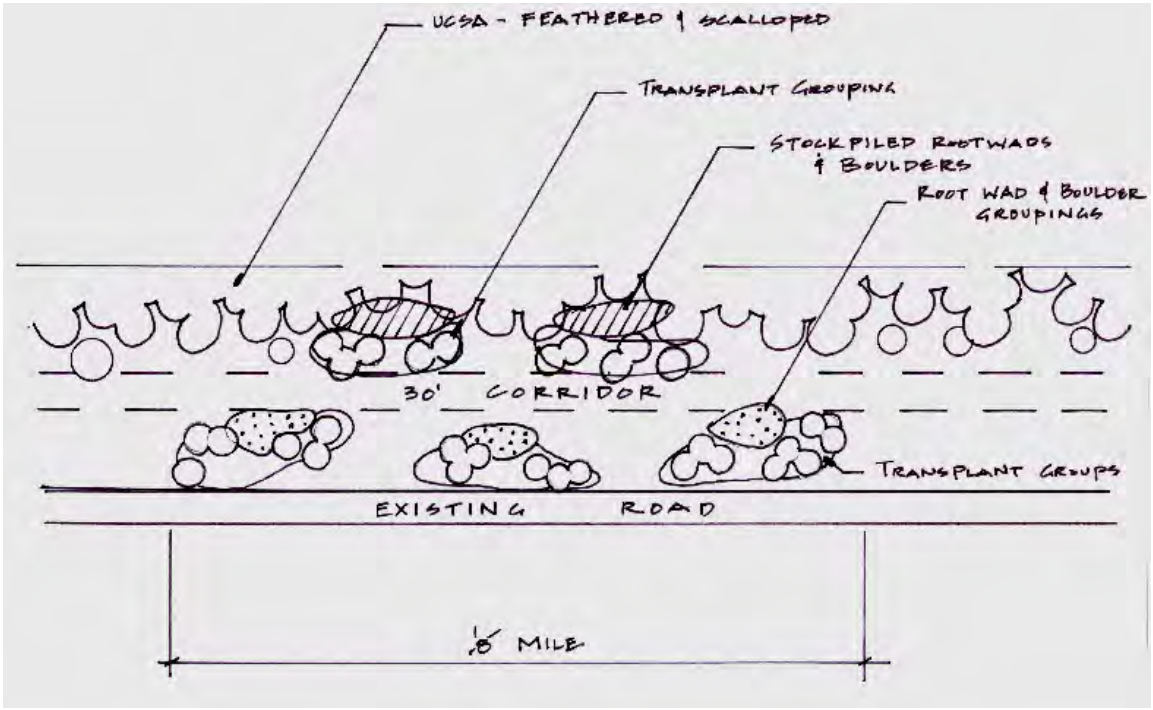


Diagram C – Linear Guideline Template for 1/8th Mile

Construct root wad and boulder groupings behind transplant groups.
Feather and scallop the uncleared storage areas, and stockpile root wads and boulders behind transplant groupings. Limit root wad and boulder groupings to approximately 3 per 1/8th mile.

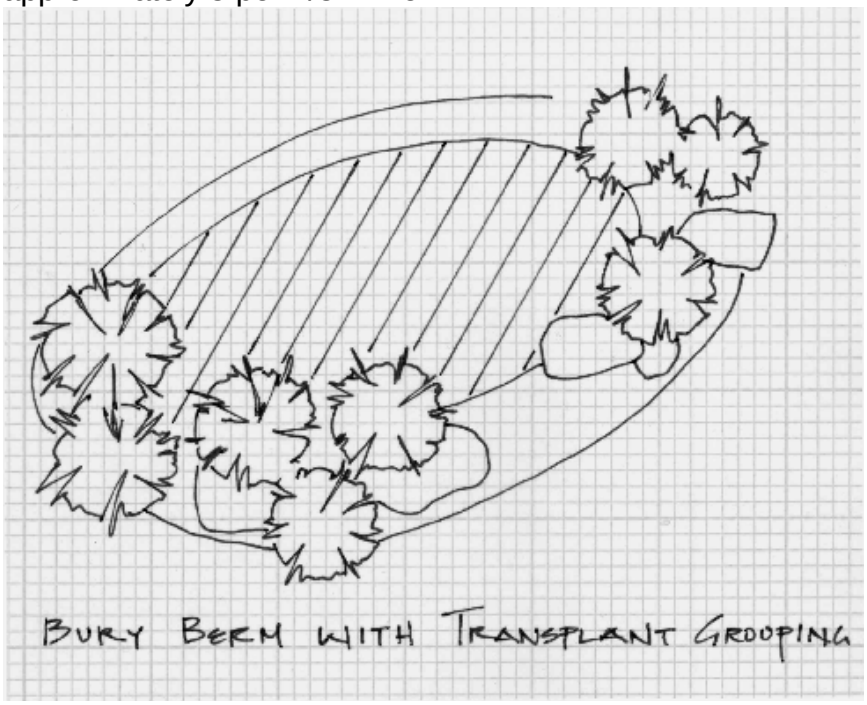


Diagram D – Bury Berm with Transplant Grouping

Bury root wads and boulders and construct a berm with retained topsoil. Plant the edges of the berm with transplanted trees, and place recessed boulders in the designed grouping.

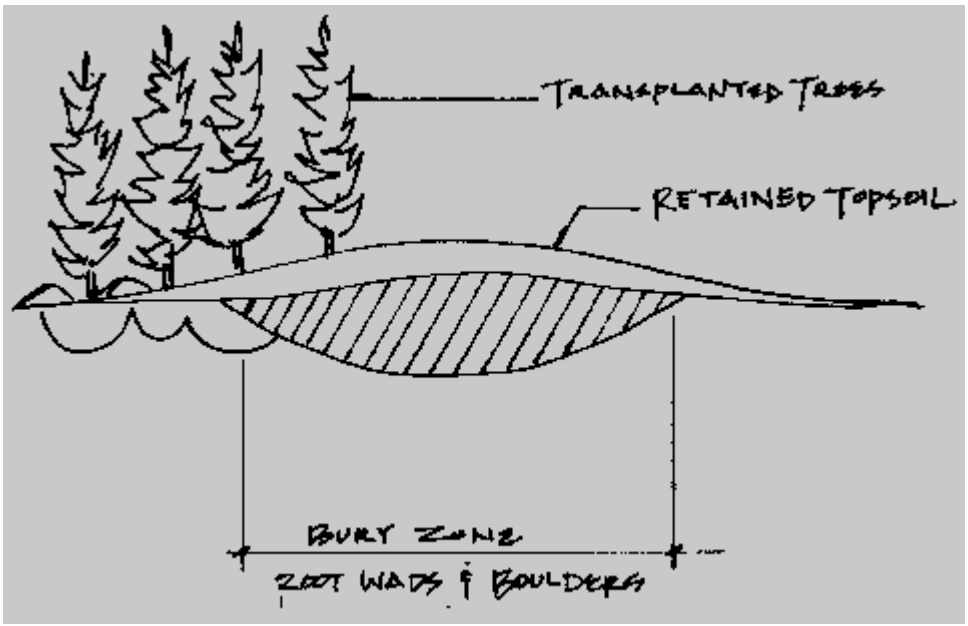


Diagram E – Bury Berm with Transplant Grouping

Plant at edges of bury zone.

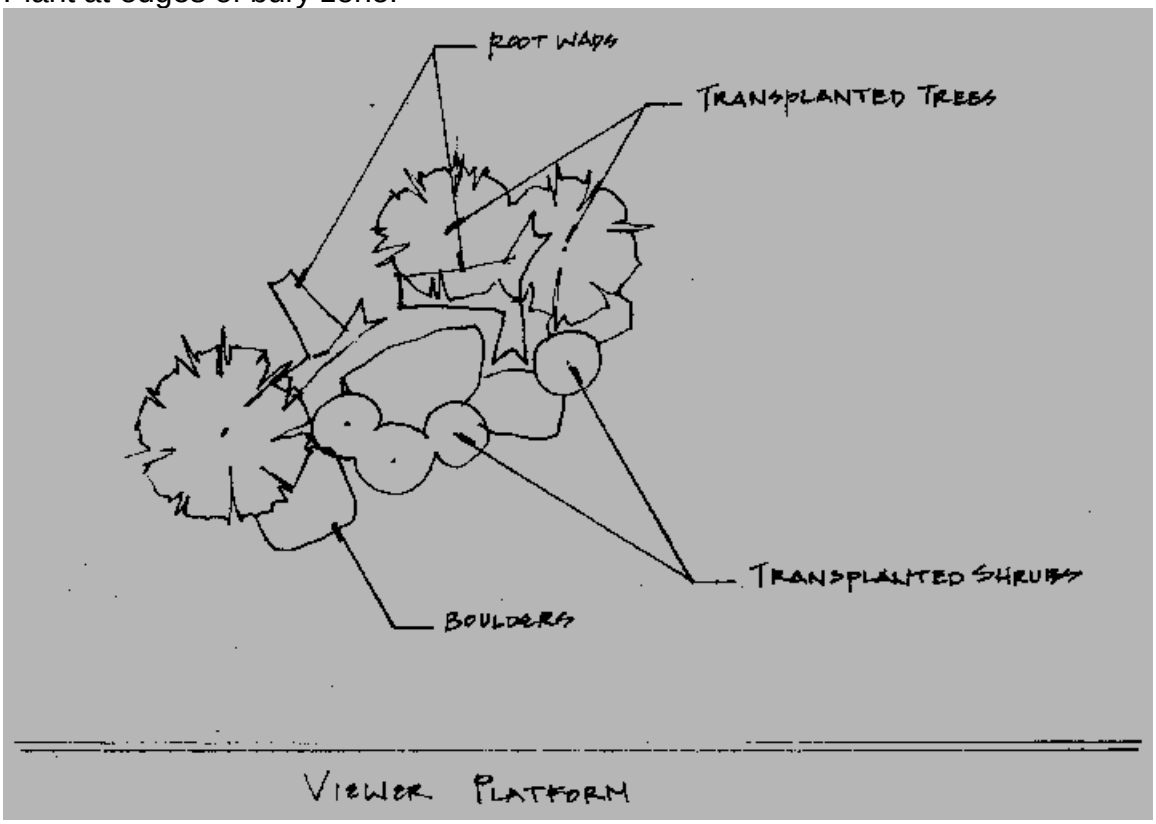


Diagram F – Root Wad and Boulder/Transplant Grouping

Construct groupings to vegetate the cleared ROW.

Expected Results of Mitigation to Meet Modification VQO

The expected results are based on the above mitigations and the specific site designed mitigation by zone and topography.

The immediate foreground of the Clover Creek Road, being heavily modified by pipeline construction would undergo extensive mitigation and over a long period of time will meet modification. Treating the soils by sub soiling, chip and hydro mulching, seeding and planting shrubs and grasses will address the impacts to the forest floor. Screening and burying boulders and root wads, designed berms and transplanted tree groupings will rebuild the foreground view, although the linear 30 foot ROW will always be evident.

It is expected that it will take approximately 10 to 15 years for this to be accomplished. Under the Scenery Management System this is an acceptable time frame, however under the Visual Management System, Partial Retention must be met within the second to third year after completion of the project.

Mitigation to Meet Partial Retention VQO

The forest plan standard for this area is foreground partial retention. This means that impacts "remain visually subordinate to the characteristic landscape".

The continued removal of trees over 15ft and shrubs over 6ft within the immediate foreground of the Clover Creek Rd for the extended length of approximately 18 miles (8 miles being NFS lands) would keep a 30ft corridor clear of vegetation less than 15ft in height. This is considered a linear corridor that is inconsistent with the characteristic landscape surrounding the project area. Because this strip is retained throughout the existence of the pipeline in this location, partial retention would not ever be met given the recommended mitigation measures within and along the edge of the ROW.

In order to meet partial retention, the corridor effect must be addressed. Address meaning make the corridor effect "visually subordinate". To do this the surrounding timbered area would need to be sufficiently "opened up" to a degree that the corridor no longer appears as a contiguous linear feature but is more like openings that are consistent with those in the surrounding characteristic landscape. This means consistent in "size, amount, intensity, direction, pattern, etc." Any introduced form, line, color, or texture that is introduced should remain subordinate to the visual strength of the characteristic landscape."

To do this the surrounding timbered area would need to be sufficiently "opened up" to create a pattern that is both characteristic of natural occurrences and would blend the 30ft corridor into the modified surrounding landscape. Within the ponderosa pine type vegetation, this could be possible by designing a project that would create open stands of varying sized openings and clusters of trees.
This project design would mimic a ponderosa pine stand that has frequent fire occurrences that create an "open park-like stand", where small shrubs and grasses occur on the forest floor. This type of project is consistent with SMS in that it addresses scenic stability issues making the pine stands more resistant to large stand replacement fire. Combined with the all of the recommended mitigation measures of transplanting within the construction zone(B,C, D) and leaving trees in zone E, this approach would screen parts of the contiguous 30ft opening from the viewer while blending the opening into the newly opened up timbered area, making the impacts visually subordinate to the characteristic landscape.

If this type of approach was included in the chosen alternative, then partial retention could be met as soon as soil color contrast mitigation was successful, and transplanted trees within the 75' corridor reached 20ft in height. The transplanted tree density would need to mimic the modified basal area of the surrounding area to blend the corridor into the landscape. Partial retention would not be met within the first year but could eventually be met.

These types of approaches were not addressed in the initial analysis, because it was

considered beyond the limits of the project boundary. Whether that was an appropriate reason may be questionable but none the less it is why it was not included.

To be sure of achieving the required VQO, it is important to include measures such as:

- Replacement of trees that do not survive transplant
- Replacement of browsed shrubs
- Tilling, reseeding and mulching of areas where grasses do not take root

The survival rate of all transplanted and seeded plantings needs to be sufficient to meet the objectives of the mitigation. A survival rate of 70 percent should be achieved at the 5 year mark to ensure the success of the mitigations.

It is also important to use design features that address the larger project work, such as low cut stumps, slash treatment, skid trail treatments, etc. to ensure that these proposed methods do not compound the initial visual impacts.

Scenery Resource Analysis for Rogue River –Siskyou NF Of the PCGP ROW along HWY 140

Prepared by Donna M. Mattson Consulting Forest Landscape Architect
July 6, 2011 541-962-8515

Introduction

This scenery resource analysis review of the Pacific Connector Gas Pipeline was prompted by a previous analysis done by Tetra Tech consultant Lee Anderson. The Tetra Tech analysis noted that there are several sections visible from Hwy 140 known as Lake of the Woods Highway that would not meet the visual quality objectives of the forest plan. However, on site field work had not been done to determine whether the ROW in these sections would be visible from the Highway. An on site review of the sections along Highway 140 revealed that there are some visible segments and some areas that are obscured by landforms. This review is being done to determine if there are segments that will not meet the visual quality standards of the Forest Plan.
The map below (Figure 1) shows the segments in question.

The achievement of the visual quality objective is determined by what is visible from the viewer platform. Many of these segments are not visible from the viewer platform which has been identified as Hwy 140. The pipeline ROW runs along the top of the ridge that runs parallel to the highway. A visibility analysis was done by North State Resources to identify the ROW visibility from Hwy 140 (shown below in Figure 2). Via digital mapping a bare earth model was developed using digital elevations. The model is helpful in determining what areas are visible from the highway based on topography only. The visibility analysis below shows two segments (in yellow) that are visible. These segments correlate with my field work as being visible as well. (Segments 156.3-156.8, and 157.2-157.5) Although a bare earth analysis does not consider screening from vegetation, the result is similar to my findings in the field. The ground would not necessarily be visible, however what would be visible is the cut through the trees.

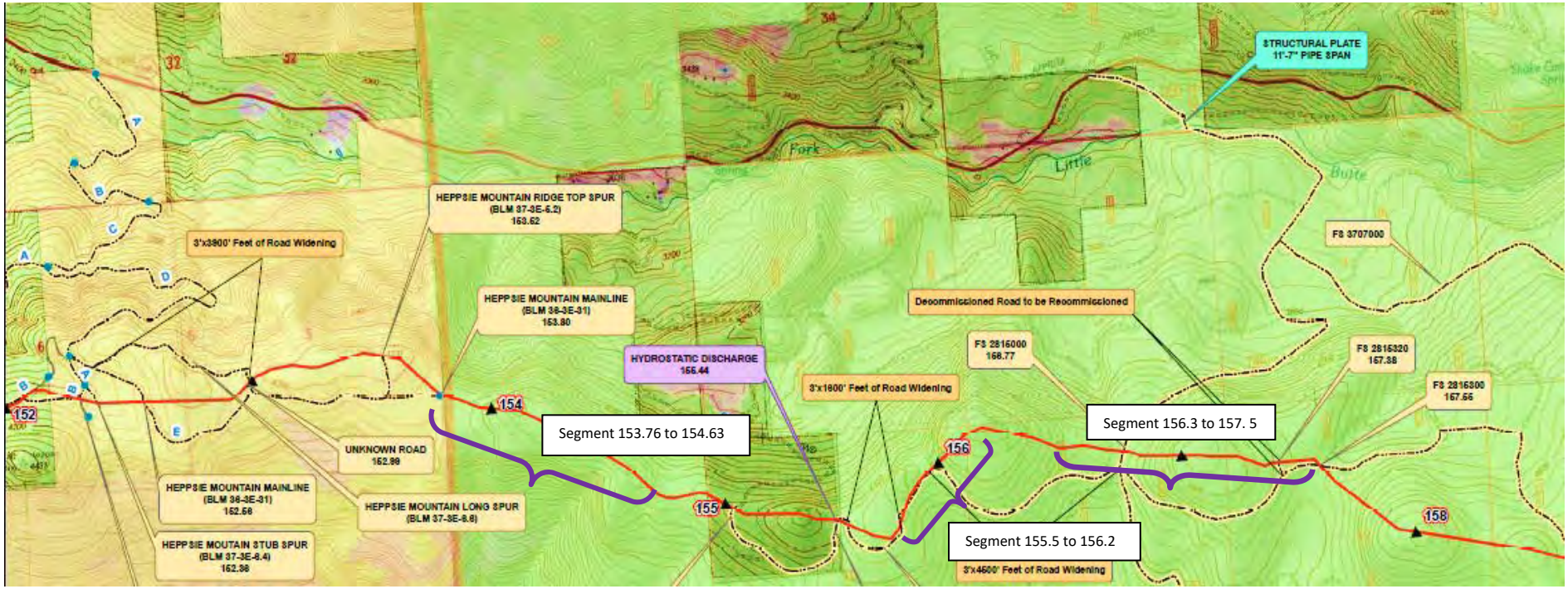


Figure 1: Hwy 140 and Pacific Connector Analysis Segments

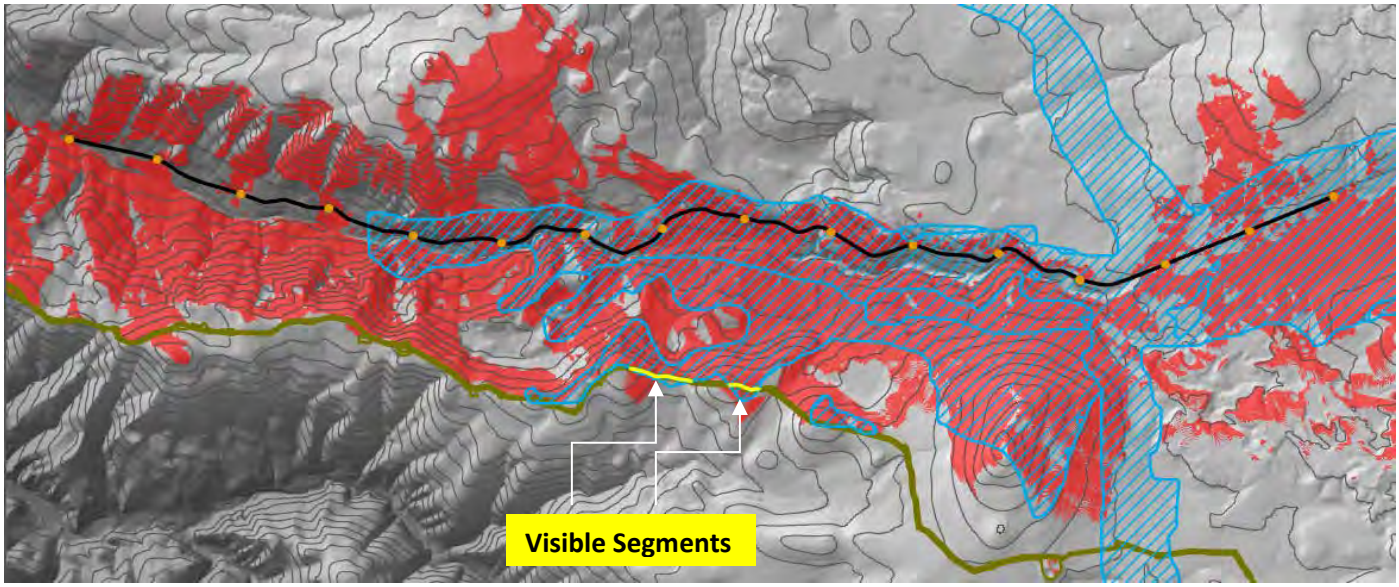


Figure 2: Visibility Analysis

Field work and Google Earth images confirm that these two segments are the only visible segments from Hwy 140. Upon further analysis it has been determined that some of the segments are not visible from Hwy 140 due to the location of the ROW related to the highway and the topography of the landscape between them.

The segments that were remaining in question are ***153.76 to 154.63***, ***155.80 to 155.82***, ***156.25 to 156.82 and 157.13 to 157.39.***

Segment MP 153.76 to 154.63

It appeared from satellite imagery and ROW maps that this segment could be visible from the highway looking southwest for a duration of approximately one mile. If this were the case, the ROW would not meet retention. The segment from ***MP 153.76 to MP 154.63*** of the ROW which lies within spotted owl habitat management area (Management Strategy 19). The visual quality objective for this area is retention; however this Standard & Guideline has been superseded in this case by the Northwest Forest Plan which makes the area a Late Successional Reserves. There is no stated visual quality objective for Late Successional Reserves. This means that maximum modification is allowable in this area. Having said that, it is still important to determine the impacts of the proposed ROW to the scenery resources as seen from the highway.

With the ROW draped over a Google Earth image, the visibility of the ROW was reviewed digitally and in the field. The onsite review in conjunction with a Google image review reveals that the segment in question is not visible from Hwy 140. It is screened by the ridge just west of the area. The angle of view from the Hwy coming from the west gives the viewer a long direct view which is aligned with the angle of the ROW. However, the long ridge coming off Heppsie Mountain, shown in the image below (Figure 3) obscures the ridge in question. The segment of the ROW is not visible from this angle nor is it visible from the east. Therefore, the visual impact of the ROW in this segment from Hwy 140 will meet retention.

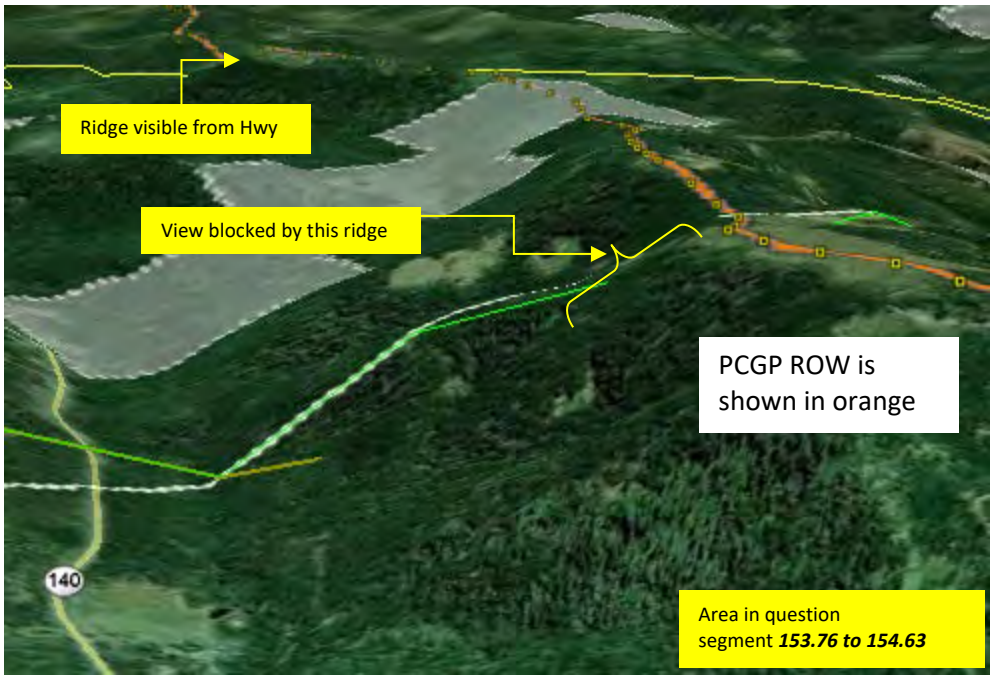


Figure 3: MP 153.73 to MP 154.63 displayed via Google Earth

The photos taken in the field of this segment were actually taken of the ridge east of the private land segment shown in gray. That segment is discussed further in this document. The Google earth image below shows the layout of the landscape as viewed from Hwy 140. The green line is the FS boundary, and the gray area private land.

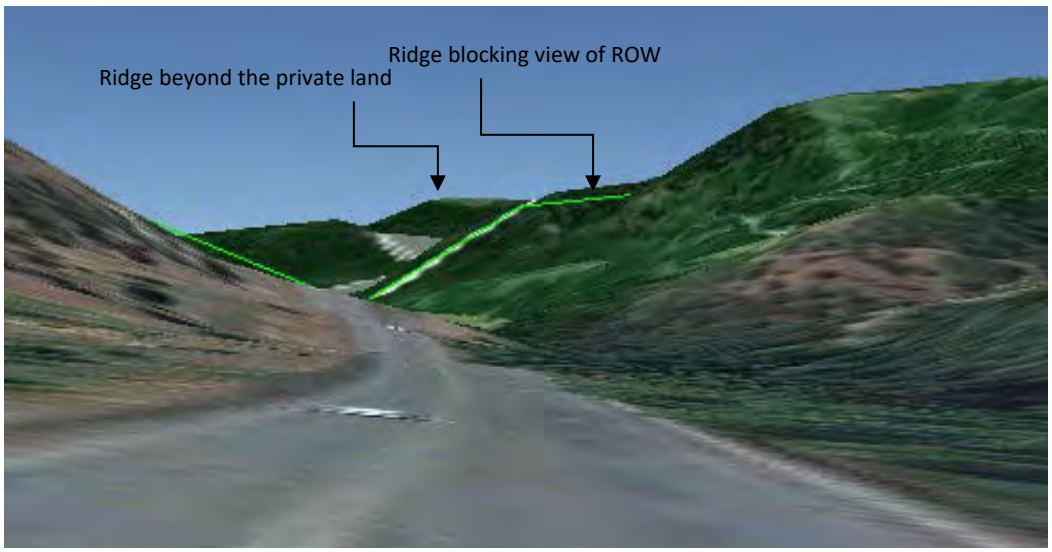


Figure 4: Google Earth View from Hwy 140

The segment ***153.76 to 154.63*** is screened from view by the ridge directly west.

The view from Hwy 140 looks up toward the ridge top from the platform which is below the ridge so the crest of the ridge often blocks the view of the ROW. However, in some cases, from a distant and oblique view the ROW is visible. In other cases the oblique views are blocked by vertical ridges that lie somewhat perpendicular to the angle of view as in the case of the segment ***155.80 to 156.20.***

Segment 155.80 to 155.20

The remaining segment in question is section that lies with ***155.80 to 156.20***. By using Google Earth and viewing the area in the field, it has been determined that this segment is not visible from Hwy 140. The view from the Hwy 140 is an upward angle to the crest of the ridge that is 3.5 to 4 miles away. From a Google Earth image it appears that there is potential for clearing impacts of the ROW to be slightly visible from the Highway. However, the route is not aligned with the angle of sight which was an initial concern, nor does the Google image display any vegetation height that could screen the project impacts. The ROW traverses the slope at an oblique angle from the line of sight and appears to be 200'-400' behind the crest of the ridge.

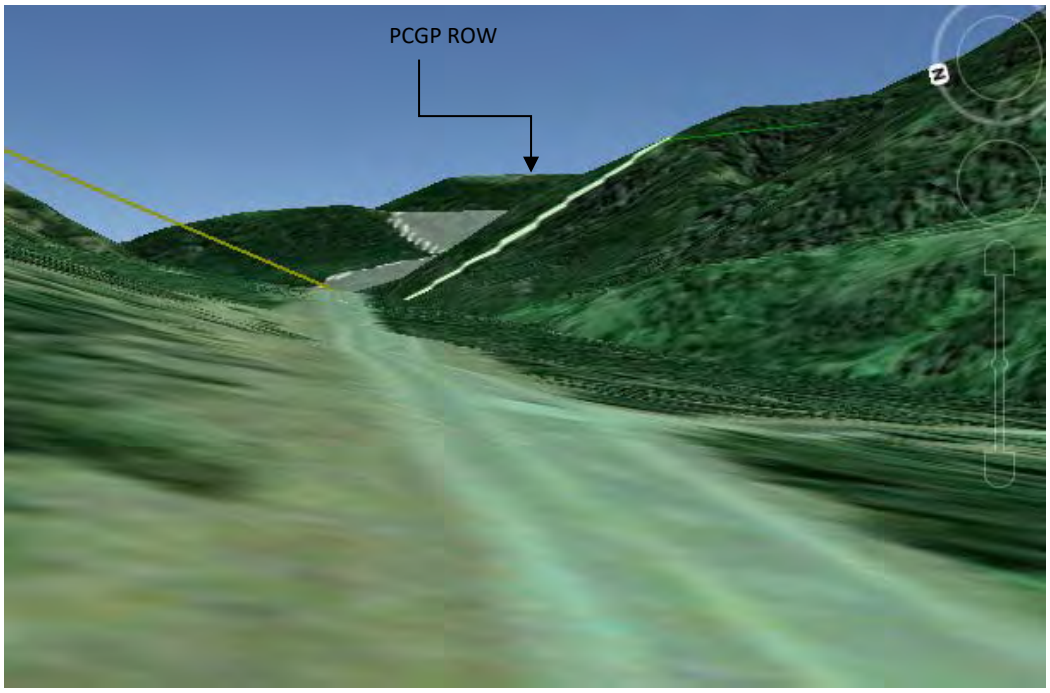


Figure 5: View from Hwy 140 via Google Earth as taken from photo point

This image above (Figure 5) shows the ROW showing up on the ridge to the east of the private land which is shown in gray with the sketchy white border. The visual quality objective of this area is partial retention from the crest of the ridge down toward the highway. It appears that the ROW is back from the crest, outside of partial retention, and would not be visible.

The photo below (Figure 4) shows the ridge on which the ROW would lie. The ROW, as shown in Figure 5; lies a distance ranging from 200 to 400 feet behind (south) of the crest of the ridge. This location of the ROW would allow enough room to leave an adequate screen of timber. It is expected that if this screening were retained the ROW would not be visible from Hwy 140.

Figure 6: Views from Hwy 140

View to ROW from Hwy 140 (42°23,786, 122°30,534)
The following images (Figure 7 and 8) show the location of the ROW along the ridge tops via Google Earth between ***155.80 to 156.20.*** The visibility of the ROW is determined by the line of sight from the view platform being Hwy 140. Therefore, if the crest of the ridge is in front of and between the viewer and the ROW then the line of sight is stopped or broken, and the ROW is not visible. It is recommended that the ROW be located as far to the south on this ridge as possible.

Figure 7: Google Earth Image showing distance from the crest of the ridge

Figure 8: Google Earth image from 5,284 ft elev.

This Google Earth image above (Figure 8) shows the location of the ROW being south of the top of the ridge as viewed from an elevation of 5248ft. The viewer on Hwy 140 is at an elevation of approximatelty 2545ft.
The Google Earth image above (Figure 8) shows the ROW just south of the ridge crest which is outside the view from Hwy 140. This segment would meet Partial Retention because it would be screened by the existing timber between the ROW and the crest of the ridge.

Segment 156.25 to 156.82 and 157.13 to 157.39

The segment ***156.25 to 156.82*** is located within a partial retention VQO. This segment would be visible from Hwy 140. The images below (Figure 9 & 10) show the ROW on a Google earth image and a similar view from a photo point located on the shoulder of Hwy 140. It is predicted that the visual impacts of the proposed ROW would create the equivalent of unacceptable modification at the point of project completion, (construction completed). The restoration efforts including revegetation within the 95ft ROW will eventually reduce the visual impact of the pipeline corridor. The timber on the northern edge of the ROW will eventually screen a majority of the pipeline corridor. However, the timeframe in which the visual quality objective of partial retention is to be met is within one year. (pg. 32 Natl Forest Landscape Management, Vol. 2) The vegetation screening is not expected to be in place within one year. The timber would need to reach a height of approximately 20ft to effectively screen the corridor in a manner that would reduce the visual impact enough to meet partial retention. The remaining 30ft corridor which will be "kept void of trees to facilitate corrosion and leak surveys and protect the pipeline from root damage" (ECRP)
would be significantly screened and from this angle would eventually meet partial retention. The remaining 30ft corridor would essentially appear as a"straight linear gap" from the treetops in front of the ROW to the treetops behind the ROW. It is my judgement that this linear feature would be visually subordinate to the characteristic landscape.

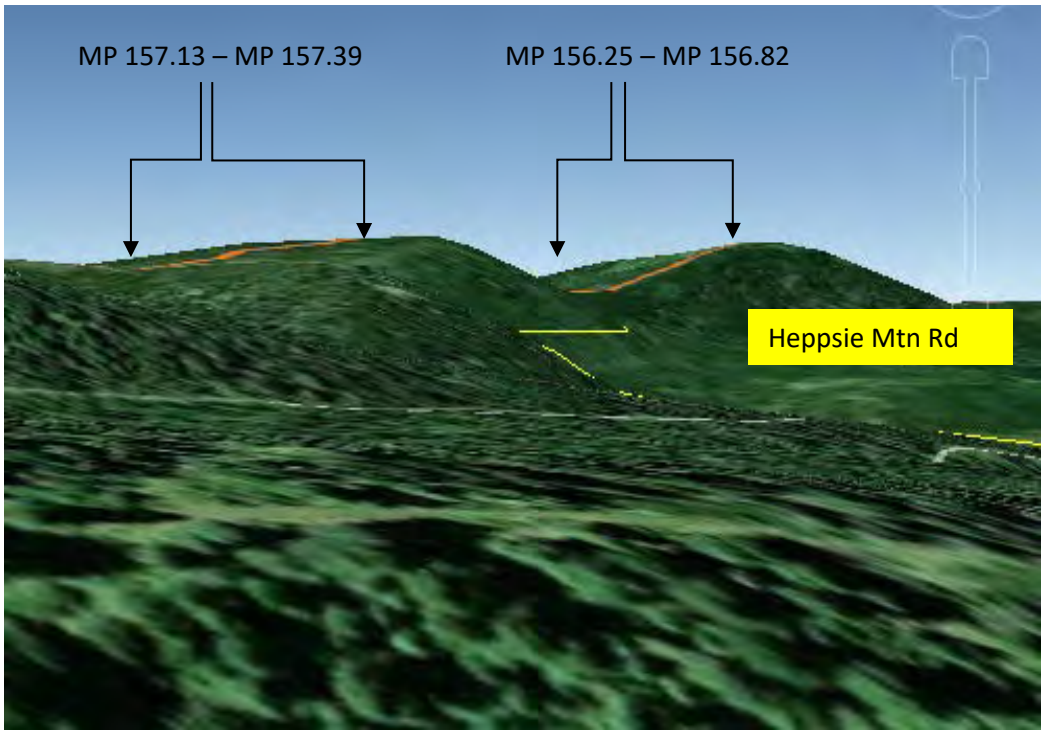


Figure 9: Google Earth image of segments visible from Hwy 140

Segment ***157.13 to 157.39*** is also visible from Hwy 140 at an oblique angle. Prior to restoration it is expected that this segment would appear as a linear feature that would draw the eye to the area and thus the construction ROW is not expected to meet partial retention until timber in front of the 95 ft ROW reached a height of 20 feet in height whereas the remaining 30 foot cooridor would be effectively screened. The remaining 30ft corridor is expected to meet partial retention due to screening of the trees to the north of the ROW. Once again, this achievement will not occur within one year of construction completion.

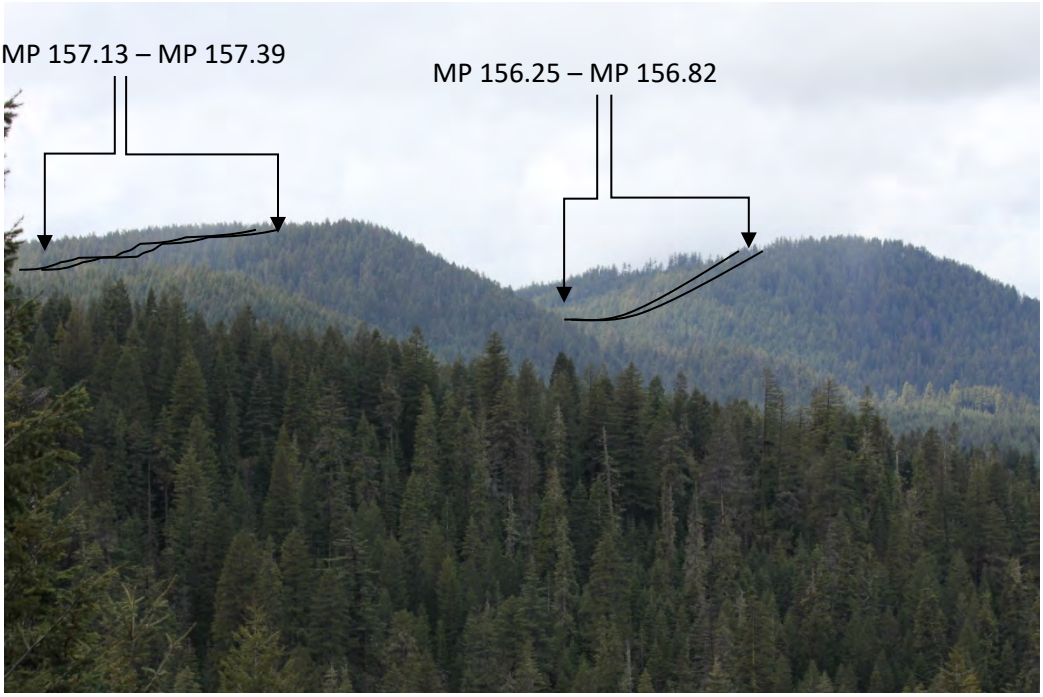


Figure 10: Segments Viewed from Hwy 140

Photo taken from Hwy 140 (42° 23.204, 122°23.056)

All other segments are not expected to be visible from Hwy 140.

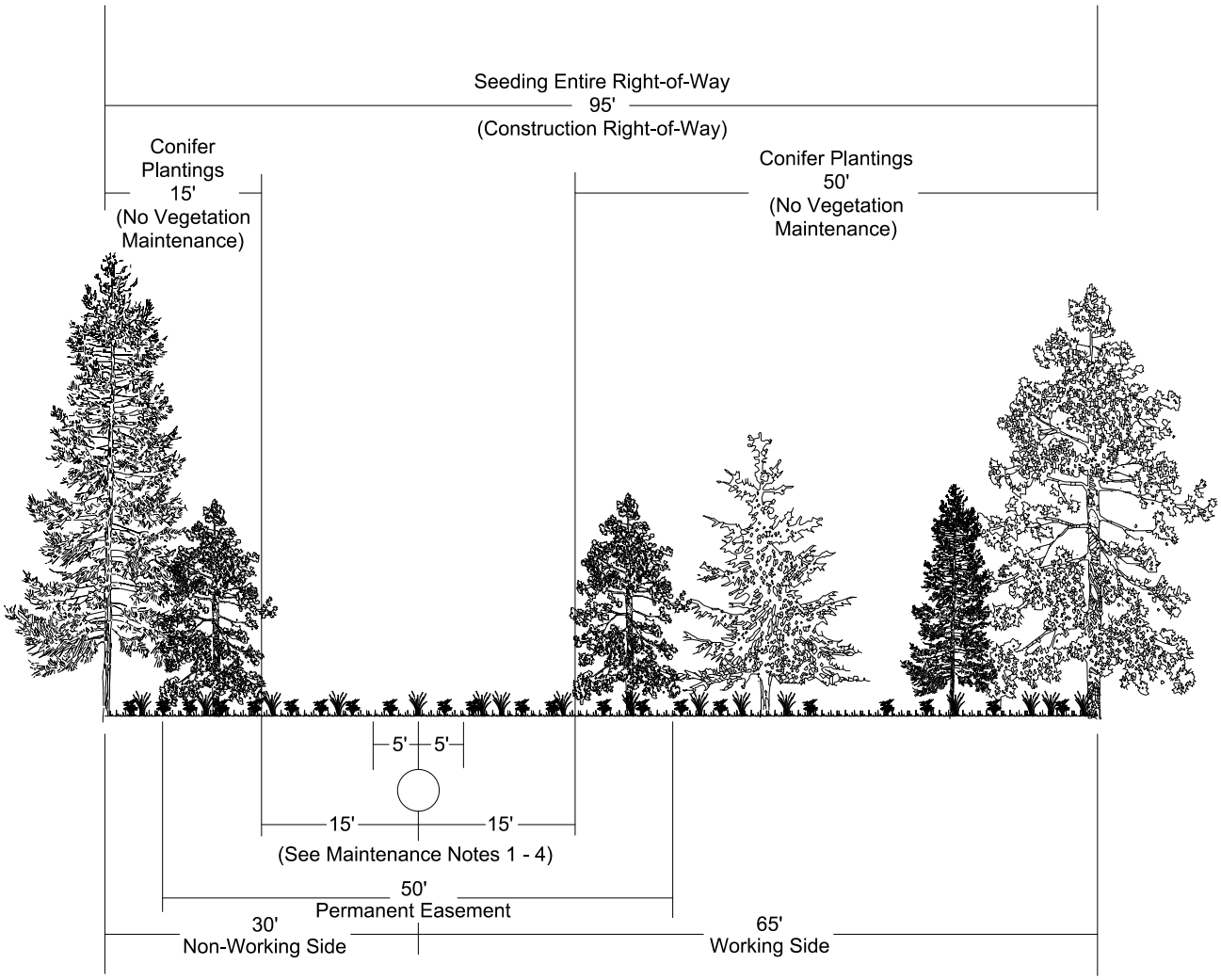
Conclusion

Segments ***153.76 to 154.63*** and ***155.80 to 156.20*** of the proposed ROW are not expected to be visible from Hwy 140. Therefore, the project would meet the visual quality objectives assigned for those areas.

There are two segments (***156.25 to 156.82 and 157.13 to 157.39***) of the proposed ROW expected to be visible as shown above. These two segments lie within an area of partial retention. Partial retention is not expected to be achieved within one year of project completion. Restoration efforts are expected to eventually achieve partial retention but not within a one year period. These segments will require a site specific Forest Plan amendment for the duration in which it is necessary for restoration efforts to effectively screen the pipeline corridor.

Attachment 2

(Drawing 3430.34-X-0017)



Planting Notes:
1. Entire right-of-way to be seeded with appropriate seed mixture (see Section 10.9).
2. Trees will be planted in all disturbed forested areas beyond 15' of pipeline centerline.
3. On National Forest System lands, shrubs to be planted from 15' each side of pipeline centerline to the outer edge of the construction limits (see Table 10.13-11).

Volunteer Shrubs

Herbaceous vegetation/ seed mixture

Maintenance Notes:
1. Selective cutting of trees and shrubs greater than 6' tall permitted within 15' of the pipeline
2. No vegetation maintenance proposed beyond 15' of the pipeline centerline.
3. Routine vegetation mowing or clearing shall not be done more frequently than every 3 years. However to facilitate periodic corrosion/leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state.
4. In no case shall routine vegetation mowing or clearing occur during the migratory bird nesting season between April 15 and August 1 of any year unless approved in writing by responsible land management agency or the U.S. Fish and Wildlife Service.

DRAWING NO.	REFERENCE TITLE

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP

FOREST
REVEGETATION & MAINTENANCE PLAN

Pacific Connector GAS PIPELINE

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.

DRAWN BY: KLL	DATE: 02-02-2001	ISSUED FOR BID:	SCALE: NOT TO SCALE
CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
APPROVED BY:	DATE:	DRAWING NUMBER: 3430.34-X-0017	SHEET 1
		%TIME% %PATH%	OF 2

Pacific Connector Gas Pipeline, LP

Air, Noise and Fugitive Dust Control Plan

Pacific Connector Gas Pipeline Project

September 2019

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List of Tables

1.0 INTRODUCTION

This Plan describes the practices that will be implemented during construction of the Pacific Connector Gas Pipeline Project (Pipeline or Pipeline Project) to minimize or control the potential impacts to air quality or the impacts caused by noise or fugitive dust on federal lands crossed by the Pipeline Project. The minimization and control measures described in this plan are also important to protecting the safety of construction workers, visiting agency personnel, and the general public that may use the public roads during the construction activities or reside near the construction right-of-way.

Emissions and noise from all phases of construction which includes timber removal and pipeline installation and operation of the proposed pipeline and compressor station would be subject to applicable state and federal air regulations. Air quality regulations affecting construction are primarily concerned with reducing emissions associated with construction equipment and fugitive dust. Therefore, the purpose of this Plan is to outline the Best Management Practices (BMPs) which would be implemented by PCGP to reduce pipeline construction emissions and fugitive dust during construction on federal lands. Emissions associated with construction equipment and fugitive dust are addressed in detail in Section 2.0 of this Plan, which includes the BMPs that would be employed to minimize potential impacts. Section 3.0 of this plan addresses areas of the Pipeline Project that cross soils and rocks (serpentinite and Ultramafic rock) that may contain naturally occurring asbestos ("NOA") and the mitigation measures that PCGP will implement to reduce potential health risks that could be associated with these materials.

Emissions associated with operation of the Klamath Compressor Station would be addressed by air quality regulatory programs for stationary sources of air pollution. The Klamath Compressor Station is located on private land and will have no direct or indirect effects with respect to air, noise, or fugitive dust emissions on Federal lands or resources. The potential air quality, noise, and fugitive dust impacts associated with construction and operation of this facility will be addressed in FERC's EIS and therefore are not discussed further in this Plan.

During construction of the Pipeline Project, there would be temporary, short-term noise impacts on federal lands crossed by the pipeline or crossed by construction access roads. Construction noise could have localized and temporary effects on recreational users and wildlife within federal lands. Pipeline construction would proceed in a linear fashion along the right-of-way, and equipment would be operated on an as-needed basis; therefore, exact noise at any particular point cannot be determined. Due to the assembly-line nature of pipeline construction, activities in any area could occur intermittently over a period lasting from several days to a few months. Potential noise impacts associated with construction of the Pipeline Project are discussed in Section 4.0 of this Plan, which includes the BMPs that would be implemented to minimize potential noise-related impacts.

2.0 AIR QUALITY IMPACTS DURING CONSTRUCTION

The Pipeline Project would generate air emissions during the two-year construction period including: (a) exhaust and evaporative emissions from construction equipment and motor vehicles associated with construction work vehicles; and (b) airborne dust associated with excavation and vehicle travel (fugitive dust). The EIS will provide exhaust and fugitive emissions for criteria pollutants and hazardous air pollutants estimated for pipeline construction. Construction activities will be generally limited to daytime hours between dawn to dusk with pollutant emission levels that are variable and intermittent throughout the day, during a typical 60-hour work week. Emissions will result from earthmoving (dust generation) and heavy

equipment use, which is typically diesel fueled. These emissions would be generated from timber clearing, grading activities associated with right-of-way construction, trenching activities, and laying the pipeline (stringing, welding, laying, backfilling) as well as restoration activities. Timber removal and pipeline construction equipment will typically include yarders, yoaders, skidders, feller-bunchers, bulldozers, graders, backhoes, front-end loaders, welding machines, trucks, pickups, and other miscellaneous equipment, each of which will have normal types of silencers and emissions control equipment (catalytic converters) commonly used for these types of equipment. Section 2.1 provides a general sequence of the Pipeline Project's construction activities and potential sources of construction emissions.

Potential dust emissions will vary substantially from day to day depending on the level of activity, the specific operations, and the prevailing weather. A portion of these emissions will likely result from equipment traffic using temporary construction access roads. Section 2.1 also provides potential fugitive dust emission activities that may result from construction.

PCGP's primary method of handling slash during pipeline construction and restoration would be to stockpile and redistribute the woody material on the right-of-way. However, in areas where slash distribution will exceed the BLM and Forest Service fuel loading standards PCGP may dispose of excess woody debris by open burn. Any slash burned on-site would be performed according to standards and guidelines set forth by federal, state, and local regulations, including OAR 340 Division 264, OAR 603 Division 77, and OAR 837 Division 110. PCGP is developing a Prescribed Burning Plan for the POD which will also be submitted to the appropriate agencies for the necessary burning permits. The locations where burning would be conducted and the amount of burning required would not be determined until clearing has been completed. The Prescribed Burning Plan will address the BMPs that would be utilized to minimize emissions from slash burning and, therefore, is not discussed further in this plan.

2.1 Sources of Construction Emissions

Depending on the area along the Pipeline alignment, construction is expected to occur between April 1 of Year One through November 30 of Year Two and may occur seven days a week, up to 12 hours per day. The construction will occur in the following phases:

- Surveying and staking;
- Timber removal;
- Clearing and grading;
- Trenching;
- Pipe hauling and stringing;
- Bending, welding and coating;
- Lowering in, padding and backfilling;
- Fabrication/tie-ins;
- Hydrostatic testing; and
- Reclamation.

Combustion emissions during timber removal and pipeline construction will result from:

- Exhaust from chainsaws used to remove timber and vegetation from the construction right-of-way;
- Exhaust from the diesel timber removal equipment used for right-of-way clearing operations;

- Exhaust from the diesel construction equipment used for construction activities;
- Exhaust from water trucks used to control construction dust emissions;
- Exhaust from diesel-powered welding machines, electric generators, air compressors, and water pumps;
- Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the construction site;
- Exhaust from diesel trucks used to deliver fuel and construction supplies to the construction site; and
- Exhaust from automobiles used by workers to commute to the construction site.

Fugitive dust emissions from construction may result from:

- Dust entrained during site preparation and grading/excavation on the construction right-of-way;
- Dust entrained during onsite travel on paved and unpaved surfaces;
- Dust entrained during aggregate and soil loading and unloading operations; and
- Wind erosion of areas disturbed during construction activities.

2.2 Best Management Practices to Minimize Emissions and Fugitive Dust

To minimize wind erosion and fugitive dust emissions during construction, PCGP will implement the following BMPs:

- Disturb no more earth than required for construction to occur;
- Water the right-of-way, laydown areas, and temporary roads at least daily in areas of active construction, if necessary, as determined by the Environmental Inspector (EI);
- Control project-related traffic speeds on dirt access roads and on linear facility rights-of-way;
- Adhere to speeds as determined by the occupying property owner on private lands and by the county or federal land managing agency on public roads;
- Water gravel or dirt access roads in areas of heavy traffic, as determined necessary by the EI to control fugitive dust;
- Ensure that speeds on the construction right-of-way will not exceed fifteen miles per hour (mph) where fugitive dust can be generated;
- Decrease speed limits when excessive winds prevail and where sensitive areas such as public roads may be adjacent to access roads or the right-of-way;
- Maintain speed limit signs for the duration of the construction activities, and they will be placed where access roads intersect the construction right-of-way. Signs will be designed to endure weather conditions and will be posted in a non-obscured, visible manner;
- Water temporarily stockpiled soils to create a semi-hard protective layer to minimize wind erosion, if necessary, as determined by the EI. This treatment would occur once after the trench has been excavated; and
- Ensure that wind erosion BMPs will be in place during forecasted high wind (greater than 25 mph) weather advisories.

Helicopter use for timber removal will not require the helicopters to land on or near the log landing sites along the construction right-of-way. During timber removal and pipe stringing

activities, helicopters will hover at a safe distance above the forest canopy where wind generated from the blades will be dispersed over a wide area. Potential indirect effects of fugitive dust generated by helicopters will be prevented by properly watering the construction right-of-way at least daily as determined by the EI(s) near log landing sites or in areas where helicopters may hover over or near the construction right-of-way. During timber removal from the construction right-of-way, fugitive dust is not expected to be significant issue because of the helicopter's hovering height and existing ground and slash cover on the construction right-of-way will minimize fugitive dust generation.

PCGP cannot predict how much water would be needed for dust suppression on the construction right-of-way, during dry seasons, but estimates that there would be approximately five 3,000-gallon water trucks per construction spread on a given day. Watering trucks would spray only enough water to control the dust or to reach the optimum soil moisture content to create a surface crust. Runoff should not be generated during this operation. Water may be obtained through municipal sources or withdrawn from surface water or groundwater sources. All appropriate permits/approvals would be obtained prior to withdrawal. The only potential water source for dust control on federal lands that PCGP has identified is Lake of the Woods, which is also a hydrostatic test water source.

PCGP may also use Dustlock™ in the water used to suppress fugitive dust emissions where determined necessary by the EI(s). Dustlock™ is a naturally occurring by-product of the vegetable oil refining process. Dustlock™ penetrates into the bed of the material and bonds to make a barrier that is naturally biodegradable, ensuring that the surrounding ground and water are not contaminated, and minimizing any potential effects to fish and wildlife. While there are no known health risks by the use of Dustlock™ to fish and wildlife resources, PCGP would not use Dustlock™ within 150 feet of riparian areas. If Dustlock™ or another similar product is proposed for use on federal lands, PCGP will receive approval from the agencies' authorized representatives 90 days prior to BLM's issuance of NTP.

Additionally to minimize emissions during construction, PCGP will require the contractor to:

- Maintain all equipment in a properly functioning and appropriately tuned condition to minimize potential exhaust emissions from internal combustion engines; and
- Transport construction debris (not slash) off the project for appropriate disposal, rather than burning.

3.0 NATURALLY OCCURRING ASBESTOS (NOA)

The Forest Service has noted a potential safety risk concern where fugitive dust is generated during pipeline construction in areas where an asbestos hazard may be present on the Tiller Ranger District if serpentinite rock and soil are disturbed. Naturally occurring asbestos (NOA) includes fibrous minerals found in certain types of rock formations. A potential safety risk could occur where natural weathering or human disturbance breaks NOA down to microscopic fibers and these fibers are suspended in the air. If airborne NOA is inhaled, these thin fibers can irritate tissues and resist the human body's natural defenses. Asbestos is a known carcinogen. However, there is no health threat if NOA remains undisturbed or does not become airborne (EPA 2009a).

Asbestos is a generic term referring to six types of naturally occurring mineral fibers that are or have been commercially exploited. These fibers belong to two mineral groups: serpentines and amphiboles. Approximately 90% of serpentine is the variety chrysotile, while amphibole asbestos includes crocidolite, amosite, anthophyllite, actinole, and tremolite (Virta 2002). Two

of the most common varieties of asbestos minerals that are found naturally are chrysotile and tremolite. The most common and abundant type is chrysotile. Tremolite also occurs but is found in much lower quantities than chrysotile. Both are found in serpentinite, commonly referred to as serpentine or serpentine rock. Ultramafic rock is the parent igneous rock for serpentinite. Ultramafic rock, other than serpentine, may also contain asbestos (California Department of Conservation 2002). The literature suggests there are fewer health effects with chrysotile asbestos; however this remains a point of disagreement (Gunter 2009, and California Environmental Protection Agency 2001).

3.1 Potential Serpentinite Rocks and Soils Crossed by the Pipeline

To establish areas where potential NOA occurs along the Pipeline alignment, existing geologic mapping was reviewed (GeoEngineers 2017) to determine areas where geologic formations are crossed that are composed of Ultramafic rocks and serpentinite. Table 1 lists the milepost ranges where the Pipeline crosses geologic formations where serpentine rocks may be encountered. GeoEngineers (2017) indicated that the potential for shallow bedrock and the potential need for blasting within these areas of Ultramafic rocks and serpentinite were moderate between MPs 74.7 and 75 and generally high between MPs 101.6 and 110.4.

PCGP also reviewed soil survey reports to determine if data were present to determine the presence of serpentinite soils or bedrock lithologies. However, only the soil survey of the Umpqua National Forest (Radtke and Edwards 1976) provided this information. Table 1 lists the milepost ranges and soil mapping units that are crossed by the Pipeline that have formed from or are underlain by serpentinite bedrock. Prior to construction, verification of serpentinite rocks/soil would be conducted by a qualified geologist using standard geologic mapping techniques at existing outcrops and road cuts to indentify rock contacts.

3.2 Regulatory Requirements

The identification of health risks associated with asbestos fibers has prompted strict regulations to limit the maximum exposure of airborne fibers in workplace environments. The Oregon Department of Environmental Quality (ODEQ) regulates the abatement and disposal of asbestos-containing materials from any public or private building involving demolition, renovation, repair, construction and maintenance activities. The purpose of the ODEQ asbestos rules and program is to prevent asbestos fiber release and exposure. Temporary construction activities such as pipeline construction within areas of potential NOA are not regulated by ODEQ.

Table 1
Geologic and Soil Mapping Data Identifying Potential Areas of Serpentinite Rocks Crossed by the Pipeline

Potential Areas of Serpentinite Soil/Rocks Crossed by the Pipeline from Geologic Mapping [1]						
From MP	**To MP**	**Total (miles)**	**Map Unit**	**Lithology**	**Description**	**Jurisdiction (County)**
73.85	75.06	1.2	Jrs	Metamorphic rocks	Serpentinized Ultramafic Rock (Jurassic/Cretaceous)	Private/BLM (Douglas)
78.69	79.02	0.3	Jri	Intrusive rocks	Mafic Intrusive Unit (Jurassic)	Private/BLM (Douglas)
87.19	87.43	0.2	Jri	Intrusive rocks	Mafic Intrusive Unit (Jurassic)	BLM (Douglas)
101.16	102.99	1.8	Jssp	Melange rocks	Serpentinite (Triassic/Jurassic)	Private/BLM/USFS (Douglas)
103.19	103.30	0.1	Jssp	Melange rocks	Serpentinite (Triassic/Jurassic)	Private (Douglas)
104.61	104.75	0.1	Am	Metamorphic rocks	Amphibolite (Paleozoic/Jurassic)	USFS (Douglas)
105.91	106.02	0.1	Msp	Melange rocks	Mataserpentinite (Paleozoic/Jurassic)	USFS (Douglas)
106.19	108.87	2.7	Am	Metamorphic rocks	Amphibolite (Paleozoic/Jurassic)	USFS (Douglas)
	Total	**6.5**				

Potential Areas of Serpentinite Soil/Rocks Crossed by the Pipeline from Soil Inventory [2]						
From MP	**To MP**	**Total (miles)**	**SIR Code**	**Compo-sition of Mapping Unit**	**Description of Mapping Unit**	**Jurisdiction (County)**
101.34	101.91	0.57	812	60 percent of Map Unit 81 and 40 percent of Map Unit 82	Mapping Unit 81: Bedrock consists of entirely of hard, moderately competent serpentinite. Depth to bedrock is generally less than three feet but may range to four or five. Mapping Unit 82: Bedrock consists of entirely of hard, moderately competent serpentinite. Depth to bedrock is generally less than three to six feet but may range from three to eight.	USFS (Douglas)
102.31	103.46	1.15				
103.71	103.88	0.17				
104.03	104.30	0.27				
103.46	103.71	0.25	810	70 percent Map Unit 81 and 30 percent of Map Unit 80	Mapping Unit 80: Serpentinite Rockland – Scable and this land type consists of serpentinite outcrops, boulder fields, grassy scablands, and very low quality timber. Greater than 70 percent of this land type occurs as rock outcrops or areas possessing less than 3 inches of soil. Mapping Unit 81: Bedrock consists of entirely of hard, moderately competent serpentinite. Depth to bedrock is generally less than three feet but may range to four or five.	USFS (Douglas)
	Total	**2.41**				

[1] GeoEngineers. 2017. Geologic Hazards and Mineral Resource Report. Pacific Connector Gas Pipeline Project. Coos Bay to Malin, Oregon. Prepared for Pacific Connector Gas Pipeline. August 24, 2017.

[2] Radtke Sherman and Rudolph Edwards. 1976. Soil Resource Inventory. Cottage Grove, Streamboat, Diamond Lake, Glide and Tiller Ranger Districts. Umpqua National Forest. Pacific Northwest Region.

The Occupational Safety and Health Administration (OSHA 2009a) has developed standards to protect workers from exposure to asbestos in the workplace. These standards include:

- 29 CFR 1910.1001 which applies to asbestos exposure in general industry, such as exposure during brake and clutch repair, custodial work, and manufacture of asbestos-containing products.
- 29 CFR 1915.1001 which covers asbestos exposure during work in shipyards.
- 29 CFR 1926.1101 which covers construction work, including alteration, repair, renovation, and demolition of structures containing asbestos.

During OSHA Final Rule Making on asbestos (*OSHA 2009b), OSHA noted that:*

> *OSHA finds that the record indicates that certain construction sites in mostly well-defined areas contain deposits of naturally occurring asbestos. In such areas, airborne asbestos during earthmoving activities may result in significant exposures. In such cases, wetting of the excavation site, often required by local authorities, should be sufficient to suppress measurable airborne asbestos concentrations.*
>
> *In the absence of information which is readily available showing asbestos contamination of soil in the immediate vicinity of a construction site, the employer is not required to take any action under this standard.*

3.3 Best Management Practices for Minimizing Exposures to NOA

Although no testing has been conducted to verify the presence of NOA within the areas of mapped serpentine rocks and soils within the Pipeline Project area, potential exposure to asbestos might occur through incidental contact with serpentine materials in areas noted in Table 1 during temporary pipeline construction activities. Direct contact with asbestos-containing soils/sediments could result in the potential releases of asbestos fibers to air, where they could be breathed into the lungs. However, chronic or long-term inhalation exposure to asbestos is the main type of exposure that can have an adverse effect on health (EPA 2009a).

Quantitative assessments of the asbestos emissions from temporary pipeline construction activities would be difficult to estimate because of the many factors which could potentially influence the rate of release of the asbestos fibers and the high degree of variability of each of these factors. These factors include the asbestos content of the material being disturbed; seasonal variations; and meteorological conditions. Additionally, the size of the area being disturbed; the level of soil disturbance; the equipment being used including equipment size, speed, and mode of operation would affect possible asbestos emissions/exposure (California Environmental Protection Agency 2001).

Given the potential health risks associated with disturbing asbestos-containing materials, PCGP would implement BMPs to reduce fugitive dust emissions in areas where potential NOA occurs (see Table 1). These BMPs may be waived in areas where PCGP conducts a geologic evaluation and determines that the area to be disturbed does not contain any serpentinite or ultramafic rock or may be modified based on site-specific conditions as determined by PCGP's authorized health and safety representative.

The BMPs that would be implemented by PCGP along the construction right-of-way and TEWAs, which have been identified by the EPA (2009a), to minimize fugitive dust emissions from areas of potential NOA include:

- Identification of areas with potential NOA with signs at all access points;
- Reduce grading or excavation speeds;
- Wet exposed surfaces of the construction right-of-way with water or dust suppressant (i.e., Dustlock™) to minimize fugitive dust;
- Stabilize temporary stockpiles by wetting to form a crust;
- Limit grading activities when winds are high or keep wetted;
- Limit speeds of construction vehicles and equipment to 15 miles per hour (MPH) or less;
- Inform operators and construction personnel to keep equipment and vehicle windows and doors closed during construction or on windy days in areas of NOA.
- Clean equipment before moving it off-site of the NOA area;
- Equipment cleaning stations shall be located and designed in coordination with a federal land representative such that contaminated water is not carried off-site;
- Stabilize all disturbed areas with vegetation post-construction (see Erosion Control and Revegetation Plan).

4.0 NOISE

The Pipeline crosses primarily rural and forested environments. About 1 percent of the land crossed by the proposed pipeline (2.2 miles of pipeline corridor) is categorized as having residential, commercial, or industrial use. In rural environments the background noise is assumed to be about 40 decibels (dB) during daylight hours (EPA 1974), when Pipeline activities would generally occur. The typical ambient sound level for forest habitats ranges from 25 dB to 44 dB (FWS 2006). Noise sources in the area are natural (e.g. wind) with incremental noise sources such as aircraft, road traffic, rural residential activities including logging or farming practices.

Federal and state noise limit standards to protect public health and welfare are established for industrial and commercial noise sources (EPA 1974 and OAR, Chapter 340, Division 35). The state-specified noise limits apply to either the property line location closest to the noise source or to locations 25 feet toward the noise source from the point on the noise-sensitive building nearest the noise source, whichever distance from the noise source is greater. Noise-sensitive property includes residences and other facilities normally used for sleeping, schools, churches, hospitals, and public libraries, none of which occur on the federal lands crossed by the Pipeline. Although FERC adopts EPA limits for new compression and associated pipeline facilities, these noise limits do not apply to noise generated from construction activities, agricultural or forestry operations, vehicle traffic, rail traffic, aircraft operations, or various other exempt sources.

Oregon regulations establish additional noise limits for blasting and impulsive noise sources associated with industrial and commercial operations. Noise limits for blasting operations are based on C-weighted decibel measurements in the slow response setting while the noise limits for other impulse sounds are based on unweighted decibel measurements in the peak response setting. The noise limits for blasting operations are 98 dBC for 7 a.m. to 10 p.m., and 93 dBC for 10 p.m. to 7 a.m. as measured at noise sensitive properties (OAR, Section 340-035-0035(1)(d)(A)). The noise limits for other impulse sound from industrial and commercial operations are 100 dB (peak) for 7 a.m. to 10 p.m., and 80 dB (peak) for 10 p.m. to 7 a.m. as measured at noise sensitive properties (OAR, Section 340-035-0035(1)(d)(B)). However, these blasting and impulse sound limits do not apply to construction sites, agricultural operations,

forestry operations, or various other exempt sources. Even though these noise limits do not apply in a regulatory context to construction activities, they provide criteria for judging blasting or impulse noise associated with construction activities.

4.1 Noise Impacts During Pipeline Activities

The Pipeline will generate noise during timber felling, construction, reclamation, and operational activities, including traffic associated with each activity, which could be detected by wildlife, recreationists, or residents in the vicinity of the Pipeline project if above ambient background levels. Noise levels associated with some common machines and activities which could be present during Pipeline activities are included in Table 2. The distances at which Pipeline project-generated noise would attenuate to ambient levels would depend on local conditions such as tree cover and density, topography, weather (humidity), and wind, all of which can greatly alter background noise conditions (Michael Minor & Associates 2008). For example, forested vegetation in the Pipeline project area would provide sound adsorption (intervening forest cover), and therefore noise would be expected to attenuate at the rate of 7.5 dB per doubling of distance from the source (soft site noise reduction with additional attenuation due to intervening tree cover, see Washington State Department of Transportation 2011). That would equate to noise from a rock drill (potentially 82 dB at 50 feet; Table 2) attenuating to ambient (i.e., 40dB) at 960 feet away versus 2,425 feet away if there was at least 200 feet of tree cover versus no tree cover between the rock drill and a potential target recipient. Noise levels from the different construction phases would also vary considerably as a result of terrain, methods and activities, weather, and environmental construction windows. For timber felling and construction activities, variation in noise level is caused primarily by changes in equipment operations and activity locations. For example, most diesel-powered equipment that would be used during construction (dozers, excavators, backhoes, flatbed trucks) would produce engine noise between 75 and 90 dBA at 50 feet, while pickup trucks produce noise 55 dBA at 50 feet (Federal Highway Administration 2006, and see Table 2). However, the magnitude of noise in some remote and steep areas crossed by the proposed Pipeline could increase where large transport helicopters may be used during right-of-way clearing and during pipeline delivery (see Section 4.1.1 of this Plan), or in areas where hard, non-rippable bedrock occurs within the trench profile that would require large blasting operations (greater than 2 pounds of explosives, see Section 4.1.2 of this Plan).

Noise from Pipeline activities will occur usually during daylight hours, except for some vehicles which may be traveling over roads in the minutes or hours preceding dawn and following dusk as workers return to work or lodging, and during horizontal directional drill (HDD) operations that will occur continuously until the operation is complete. None of the Pipeline project's six proposed HDDs (Coos Bay Estuary/2, MP 25, and Coos, Rogue, and Klamath rivers) are located on federal lands and will have no direct or indirect effects with respect to air, noise, or fugitive dust emissions on federal lands or resources. The potential noise effects from the proposed HDDs, as well as proposed mitigation measures to minimize potential impacts to adjacent noise sensitive areas will be addressed in FERC's EIS and are not discussed further in this Plan. Additionally, the Pipeline project's Klamath Compressor Station would be located in Klamath County, Oregon, on a 24.4-acre private parcel at MP 228.81. Because this facility is located on private lands, the compressor station is not discussed further in this Plan. FERC's EIS will provide additional information regarding the Klamath Compressor Station and potential noise effects and mitigation measures that would minimize potential noise impacts associated with this facility.

Table 2
Common Sound Levels for Equipment/Activities
Potentially Associated with Pipeline Construction and Timber Felling

Measured Sound Source	Range of Reported dB Values (at Distance Measured 50ft)	Relative Sound Level [1]
Forest Habitats	25 – 44	Ambient
Yelling	70	Low
Chain Saw (various types/conditions)	61 – 93	Low - Very High
Pickup Truck (idle to driving)	55 – 71	Very Low - Moderate
Mowers	68 – 85	Low - High
Log Truck	77 – 97	Moderate - Very High
Log Skidder	91	Very High
Dump Truck	84 – 98	High - Very High
Rock Drills	82 – 98	High - Very High
Pumps, Generators, Compressors	87	High
Drill Rig	88	High
General Construction	84 – 96	High - Very High
Track Hoe	91 – 106	Very High - Extreme
Helicopter or Airplane (various types/conditions)	96 – 112	Very High - Extreme
Rock Blast	112 [2]	Extreme
Logging Helicopter (Columbia double rotor)	108 – 123	Extreme

Source: FWS 2006.
[1] A general, subjective ranking of noise levels created by the sources considered when used for analysis of relative noise effects on species.
[2] Blasting required for the Pipeline would be underground and muffled which should result in a lower dB value at 50 feet.

The operation of the pipeline is typically not expected to generate noise, except for the regular small vehicle traffic associated with right-of-way and facility inspections. No operational noise from the buried pipeline would be detectable at aboveground locations. Meter stations and other aboveground facilities (mainline block valves) typically do not generate appreciable noise during normal operation. The source of noise at these facilities would be the sound of natural gas moving through underground piping, as transferred to the surface through valves and interconnecting piping. Of the 17 proposed mainline block valves, two are located on federal lands administered by the BLM (i.e., BVA #7 at MP 80.03 and BVA #12 at MP 150.70). Noise would not be expected to be audible beyond the edge of the block valve sites or Pipeline right-of-way. During operations, minimal increase in ambient noise levels would also occur during periodic right-of-way vegetation maintenance activities (i.e., mowing, chainsaws) during operation. Routine vegetation maintenance clearing would not be conducted more frequently than every 3 years. However, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be maintained annually in an herbaceous state. Routine vegetation maintenance clearing would occur after August 1 but before April 15 during daylight hours, and would move along the right-of-way and not remain in any particular location for a significant length of time.

Noise generated during Pipeline activities could have localized and temporary impact on recreational users and wildlife within federal lands, with noise levels returning to pre-project levels after the completion of each construction phase. Noise and human presence would move along the construction right-of-way, although at a rather slow pace. It is estimated that the average time a given point along the Pipeline would be disturbed from noise generated during

construction is approximately 8 weeks; reclamation and operational impacts would be shorter. Therefore, impacts to wildlife because of noise would generally be of shorter duration and spatially localized, especially compared to impacts from high traffic volume roads. The forthcoming FERC FEIS and Biological Assessment (BA) will provide detailed analyses of the potential noise impacts from Pipeline activities to wildlife and threatened and endangered species (i.e., marbled murrelet – MAMU, northern spotted owl – NSO, and salmonids).

4.1.1 Helicopter Use

Double rotor helicopters may be used along a portion (approximately 15.4 miles) of the Pipeline during timber clearing and pipeline construction in areas that would be less accessible to pipeline construction contractors and logging trucks. Noise associated with this size of helicopter (generally 108 – 123 dB; see logging helicopter in Table 2) could have negative impacts to wildlife species, especially bird species during the breeding season.

Helicopter logging is currently proposed for the locations identified in Table 3 in areas of rugged topographic areas with limited access (areas would not be finalized until a contractor is selected). Maps C.1 to C.34 in Attachment C to Appendix U identify where large transport helicopter use is likely to occur along the proposed Pipeline route, and Section 4.2 describes measures that would be implemented to reduce the distance it would take for noise levels produced by large transport helicopters to return to ambient.

Table 3
Areas along the Proposed Pipeline Route that May Require
Large Transport Helicopter Use for Timber Clearing and/or Pipeline Construction

Begin MP	End MP	Helicopter Staging
		TEWAs 6.49-W, 7.21-N, 7.44-W, 10.22-W, 13.79-W, 14.62-W, 15.75-W, 16.71-W, 18.05, 21.12-W, 23.99-N, 21.87-N
37.10	38.42	TEWAs 36.63-W, 36.97-W, 37.15-N, 38.32-W, 38.32-N, 38.90-W, 39.18-N
46.70R	47.20R	TEWAs 46.75-N, 47.53-N, 47.52-W
60.50	61.50	TEWAs 60.52-N, 60.54-W, 60.59-N, 60.87-W, 60.88-N, 61.43-N
77.80	79.90	TEWAs 77.72-N, 77.95-W, 78.99-W, 79.85-N
92.46	94.50	TEWAs 92.62, 92.62-N, 92.63-W, 93.01, 93.01-N, 94.56-W
95.10	97.05	TEWAs 95.39, 96.22-N, 96.23-W 97.02-N, 97.04-W
97.70	98.00	TEWAs 97.63, 97.79-N, 97.91-W
101.30	102.30	TEWAs 101.62-N, 101.75-N, 102.19-N
108.50	110.40	TEWAs 109.10-W, 110.34-W, 110.73 (Helicopter landing Peavine Quarry)
116.30	117.85	TEWAs 116.59-W, 117.67-N
123.30	125.15	TEWAs 123.53-W, 123.71-N, 124.30-N, 124.54-W, 124.71-W, 124.96-N

4.1.2 Blasting

Blasting may be required to achieve right-of-way grade and pipeline trench construction in areas where hard, non-rippable bedrock occurs within the trench profile; however, alternate mechanical methods would first be employed in order to attain the desired trench depth, such as ripping, hydraulic hammers or rock saws. The bedrock units that may require blasting are expected to consist primarily of volcanic and metavolcanic rocks in the Klamath Mountains and volcanic rocks in the Cascade Range and along the ridges in the Basin and Range physiographic province. In addition, local areas of well lithified sedimentary rock may require blasting in the Coast Range. Approximately 117.1 miles of the proposed pipeline alignment is considered to have moderate to high blasting potential, although not all substrate within those areas identified may require blasting to achieve the required trench depth. Blasting activities may involve a single blast or a repetitive blasting sequence. As reported by the Arcata Fish and Wildlife Office (FWS 2006; see rock blast in Table 2), noise associated with blasting activities may be in the range of 112dB within 50 feet of the trench and may cause alarm in wildlife such

as mule deer and threatened and endangered species. Maps C.1 to C.34 in Attachment C to Appendix U to the POD identify where moderate to high blasting potential is likely to occur along the proposed Pipeline route, and Section 4.2 describes mitigation measures that would be implemented to reduce the decibel level of blasting operations, as well as reduce the distance it would take for noise levels produced by large blasts to return to ambient.

4.2 Mitigation

Most equipment used during Pipeline activities would be below the 92 dB level within 50 feet of a source (an "injury threshold" for NSO and MAMU determined by FWS [2006] in *Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California)*; however, use of large transport helicopters and blasting would be expected to be above 92 dB (see Table 2). PCGP prepared a Blasting and Helicopter Noise Analysis and Mitigation Plan (Michael Minor & Associates 2008) that analyzed the distances at which conventional blasting required for trenching within rock substrate and transport (logging) helicopters would attenuate to 92 dB and determined mitigation measures that would reduce decibel levels and/or minimize the distance that noise from those operations would attenuate to 92dB.

The noise analysis and mitigation plan (Michael Minor & Associates 2008) indicated that under the worst case conditions with common and appropriate mitigation measures applied to trench blasting operations, it is expected that blasting noise would attenuate to 92 dB within 200 feet of the source, and to 70 dB within 1,025 feet of the blast source in soft rock. Table 4 (adapted from Table 1 in the Blasting Plan, Appendix C to the POD) summarizes various mitigation measures that can be applied to blasting operations to minimize associated noise. The mitigation measures include drilling small (2.5-inch) charge holes on tight centers; stemming the blast holes with sand and placing inert material on top of the blast area including the use of blasting mats; using timing delays for charges; and directing the blast vibration away from sensitive receptors. Table 5 summarizes the results of the Michael Minor & Associates (2008) analysis and indicates distances from a blast-related noise source to the projected 92 dBA criteria considering application of mitigation measures.

Similar to blasting, the noise analysis and mitigation plan (Michael Minor & Associates 2008) provided that large transport helicopters will attenuate to 92 dB at distances of 650-700 feet from the aircraft. The greater distance for helicopter use versus blasting is due to the directional aspects of blade slap noise that is directed toward the ground. Mitigation for helicopter noise includes operational restrictions, such as maintaining optimal flight speed, controlled movement that is gradual and smooth, and a high altitude and flight paths away from noise sensitive areas whenever possible. However, there are no feasible mitigation measures to reduce decibel level for helicopter noise during hauling, as the slow speeds used during hauling result in blade slap being the dominant noise source.

Table 4
Charge Related Noise Mitigation Methods

Mitigation Method	Benefit
Drill small charge holes on tight centers	Blast energy is contained in the rock so less energy is released into the atmosphere as noise and air-over-pressure
Leave approximately 3-4 feet of soil on top of the blast area during initial mechanical excavations	Leaving the soil on the blast area will contain blast noise and air-over-pressure from the blast, reducing noise impacts
Use blast mats on top of the soil on the blast area	Additional mass of the mats also contains the blast noise and air overpressure, increasing energy for fracturing rock and also reduces noise and overpressure.
Use of timing delays for charges	Limit the number of charges going off at any one time reduces the overall noise and air-over-pressure from the blast
Blast small horizontal and vertical sections	By taking smaller sections for each blast, less explosives are needed reducing overall energy related to the blast
Stem the blast holes with dense sand	Stemming is the practice of packing the top portions of the blast holes with sand after the charge is loaded. This helps to force the energy of the blast into the rock and helps prevent energy from blowing out of the top of the hole, reducing noise and air-over-pressure impacts.
Timing charges to direct blast vibration away from sensitive receivers	Through the use of proper timing, charges can be detonated to direct the transmission of vibration away from sensitive receivers
Source: Explosive Product Divisions Blaster's Handbook, 1989 and Rosenthal, 1987	

Table 5
Projections of Distances for Blasting Noise to Attenuate to 92 dBA under Different Conditions

Propagation Conditions	Distance to Attenuate to 92 dBA Level		
	Un-Mitigated	Soft Rock - Mitigated	Hard Rock - Mitigated
Normal a/	Up to 4,000 feet	Less than 125 feet	Less than 125 feet
Moderate b/	Up to 5,000 feet	125 feet	Less than 125 feet
High c/	> 5,500 feet	200 feet	125 feet
a/ Normal: assumes moderate temperatures and minimal reflective surfaces b/ Moderate: assumes colder temperatures, or reflective surfaces, or a low pressures system c/ High: assumes combined low temperature with inversion, wind in the direction of the noise sensitive land use and low dense cloud cover.			

To minimize noise impact to other nesting birds, including raptor species, PCGP would clear timber outside of the primary migratory bird nesting bird season (April 1 – July 15) and outside of other spatial and seasonal recommended restrictions for raptors nesting in the vicinity of the Pipeline corridor. To further minimize impacts to raptors nesting in the Pipeline vicinity, PCGP would apply the recommended spatial and seasonal restrictions during Pipeline construction activities (see Attachment C to Appendix U of the POD). Maps C.1 to C.34 in Attachment C to Appendix U identify temporal and spatial restrictions recommended by FWS and other agencies to protect nesting MAMU, NSO, and other raptor species.

To minimize impact to fish, including federally listed salmonids where explosives would be detonated near water or in streambeds that could produce shock waves that could be lethal to fish, fish eggs, and fish larvae, no in-water blasting would occur, and PCGP would implement dry open-cut crossing waterbody crossing methods (i.e., dam and pump). The measures

included in Section 4.4 of the Blasting Plan (Appendix C to the POD) provide enough room between streambed blasting of the trench in the dry and potential fish upstream and downstream of a dry open-cut crossing (i.e., dam and pump) so that shockwaves would be minimal from trench blasting .

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Pacific Connector Gas Pipeline, LP

Blasting Plan

Pacific Connector Gas Pipeline Project

September 2019

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1.0 INTRODUCTION

The purpose of this Blasting Plan is to provide guidelines for the safe use and storage of blasting materials proposed for use during construction of the Pacific Connector Gas Pipeline Project (Pipeline or Pipeline Project). This Blasting Plan is intended to help ensure the safety of construction personnel, the public, nearby facilities and sensitive resources.

Blasting may be required to achieve right-of-way grade and pipeline trench construction in areas where hard, non-rippable bedrock occurs within the trench profile; however, alternate mechanical methods will first be employed in attempt to attain the desired trench depth, such as ripping, hydraulic hammers or rock saws. The bedrock units that may require blasting are expected to consist primarily of volcanic and metavolcanic rocks in the Klamath Mountains and volcanic rocks in the Cascade Range and along the ridges in the Basin and Range physiographic province. In addition, local areas of well-lithified sedimentary rock may require blasting in the Coast Range. Approximately 117.1 miles of the proposed pipeline alignment is considered to have moderate to high blasting potential, although not all substrate within those areas identified may require blasting to achieve the required trench depth (GeoEngineers, 2017).

2.0 GENERAL

Blasting for grade or trench excavation may be utilized only after all other reasonable means of excavation have been used which include two unsuccessful passes with a D-9 ripper. The purpose of blasting during pipeline construction is to fracture rock within the pipeline trench profile to facilitate removal. This is accomplished using relatively small charges, typically 2 to 10 pounds, set on tight centers detonated with a delay between each charge. Measures are taken to prevent rock fragments, or fly rock, from leaving the trench, and to reduce blasting noise levels. Following completion of a successful blast, the broken rock is then removed from the trench using mechanical excavation equipment. Similar blasting practices may also be used to remove rock obstructions during construction of the right-of-way. Mine and quarry blasting operations, with which the general public may have greater association, are generally conducted in a fundamentally different manner. These operations typically use much larger charges, often exceeding 100 pounds per delay and promote rock displacement. As such, noise and vibration levels associated with mine and quarry blasting are usually much greater than those generated from blasting during pipeline construction.

Prior to any blasting, a site-specific blasting plan must be submitted by the Construction Contractors (Contractors) to Pacific Connector Gas Pipeline, LP (PCGP/Company) for approval. All site-specific blasting plans for work performed on federal lands shall also be provided to the jurisdictional agency for review and acceptance. This Blasting Plan (Appendix C to the POD) does not relieve the Contractors of the responsibility for developing site-specific blasting plans.

3.0 BLASTING PROCEDURES

3.1 General Blasting Procedure

The following sequence of events outlines the general procedure completed for each blast event. These steps represent a minimum requirement and outline the general order of the blasting procedure (safety measures are further detailed in subsection 7.1):

1. Conduct safety meeting prior to any blasting activities;
2. Erect warning signs and traffic control devices as necessary;
3. Set up lightning detectors;

4. Measure drilled holes to confirm depth and location;
5. Evaluate potentially affected structures and facilities;
6. Load holes with explosive charges;
7. Set up seismic equipment to monitor particle velocities near any structures 200 feet or less from blast.
8. Clear the blast affected zone and initiate applicable road closures;
9. Give the warning signal;
10. Give the blast signal;
11. Detonate the blast;
12. After the blaster has checked for misfires and given the "ALL CLEAR" signal, any potentially affected aboveground or underground facilities will be inspected by Company for blast related damage; and
13. Complete the Blasting Log Record.

3.2 Blasting Contractor Qualification

Blasting operations shall be conducted by or under the direct and constant supervision of experienced personnel legally licensed and certified to perform such activity in the jurisdiction where blasting occurs. The Contractors shall provide the Company with evidence of experience and such licenses and permits prior to any blasting activities.

3.3 Federal, State, County and Local Regulations/Restrictions

Blasting related operations including obtaining, transporting, storing, handling, loading, detonating, and disposing of blasting material, drilling, and ground-motion monitoring shall comply with applicable federal, state, and local regulations and permit conditions.

Applicable Federal regulations include but may not be limited to the following:

(a) Safety and health. OSHA, 29 CFR Part 1926, Subpart U.

(b) Storage, security, and accountability. Bureau of Alcohol, Tobacco, and Firearms (BATF), 27 CFR

(c) Shipment. DOT, 49 CFR Parts 171-179, 390-397.

3.4 Site-Specific Blasting Plans

Contractors shall furnish a site-specific Blasting Plan to PCGP prior to any proposed pipeline blasting related operations and shall obtain Company approval in writing prior to drilling. Any changes to the Blasting Plan that could increase the particle velocity or ground movement shall require prior written approval by Company. All site-specific blasting plans for work performed on federal lands shall also be provided as notification to the jurisdictional agency at least three (3) federal working days before the proposed blasting date.

The Site-Specific Blasting Plan provided by Contractors shall include the following:

- Explosive type, product name and size, weight per unit, and density (note that ANFO will not be used during pipeline right-of-way and ditch construction);
- Delay type, sequence, and delay (ms);

- Initiation method (non-electric (shock tube) detonator is the only approved initiation system);
- Stemming material and tamping method;
- Hole depth, diameter, and pattern;
- Explosive depth, distribution, and maximum weight per delay;
- Number of holes per delay;
- Distance and orientation to nearest aboveground structure;
- Distance and orientation to nearest underground structure;
- Procedures for storing, handling, transporting, loading, and firing explosives, fire prevention, inspections after each blast, misfires, flyrock and noise prevention, stray current accidental-detonation prevention, signs and flagmen, warning signals prior to each blast, notification prior to blasting, and disposal of waste blasting material;
- Seismograph company, names, equipment and sensor location;
- Copies of all required federal, state, and local permits;
- Blaster's name, company, copy of license, and statement of qualifications;
- Magazine type and locations for explosives and detonating caps;
- Typical rock type and geology structure (solid, layered, or fractured);
- Pipeline location (MP and Stationing); and
- Applicable Alignment Sheet numbers.

The following restrictions on blasting methods/techniques will be enforced and must be considered during development of the blasting plan:

- The blasting agent Ammonium Nitrate and Fuel Oil (ANFO) shall not be allowed for right-of-way construction or pipeline trench blasting;
- Emulsion-type explosives shall not be allowed;
- The minimum time delay between the detonation of charges shall not be less than 8 milliseconds;
- There will be no more than one shot/delay;
- Neither electric blasting caps nor electric initiation systems may be used; only non-electric initiation systems are allowed;
- Provisions of the PCGP Fire Prevention and Suppression Plan

3.5 Pre-Blasting Requirements

Contractors shall place all necessary "one calls" 72 hours prior to any blasting related operations or as required by one-call system(s). Before performing any activities associated with blasting on the construction right-of-way, all property owners will be notified of impending blasting activities. The authorized Bureau of Land Management (BLM) and US Forest Service (FS) officers shall be notified a minimum of three (3) federal working days prior to any blasting related operations. Reclamation would be provided a two-week notification of any required blasting activities with Klamath Project boundaries.

3.6 Monitoring of Blasting During Pipeline Construction

Drilling and blasting shall be completed with Company inspector(s) present. Company Inspector's approval is required to proceed prior to each blast.

Seismograph equipment will be used to measure blast induced vibration in the vertical, horizontal, and longitudinal directions. Peak particle velocity (PPV) is an industry accepted unit of measure used to characterize blast induced vibration. The unit is derived by measuring the maximum speed of a point and calculating the distance it would travel during a one second interval. Seismic monitoring may be discontinued at PCGP's discretion if the blasting schedule and blasting performance consistently produce PPVs lower than the maximum allowable limit.

PPV will be recorded at any adjacent utility, water wells, potable springs and any aboveground structure within 200 feet of the blasting. PCGP will photograph structures or facilities near blasting locations to document pre-blast conditions. Similarly, PCGP may video record blast events.

When blasting is completed in noise sensitive areas, peak noise and overpressure will be monitored and recorded in compliance with the stipulations outlined in the Federal Energy Regulatory Commission's (FERC) Biological Assessment.

Contractor shall complete a blasting log record immediately after each blast and submit a copy to the Company representative.

4.0 BLAST EFFECTS MITIGATION

PCGP will implement measures to reduce noise, air overpressure, vibration and flyrock as necessary to protect construction and agency personnel, public and private properties, and sensitive natural resources. Each of these effects and suggested mitigation measures are discussed in the following sections.

4.1 Blast Noise Mitigation

Air overpressure is energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave is known as the peak air overpressure, generally measured in decibels (dB). The pressure waves consist of energy over a wide range of frequencies, some of which are audible and may be sensed in the form of noise, but most are at inaudible frequencies less than 20 Hz. This relatively low frequency component can be sensed by people in the form of a pressure wave known as concussion. The noise and concussion together is known as air overpressure.

Several forms of mitigation may be used to reduce noise and air overpressure resulting from trench blasting. Controlling blast noise and air overpressure is essential for successful blasting. High noise and air overpressure levels indicate much of the blast energy was wasted (creating noise and overpressure) and not used to fracture rock (Michael Minor & Associates, 2008). In order to limit the noise, and increase the level of energy forced into the rock, virtually all trench blasting operations will employ various mitigation measures to contain the blast energy and use it to fracture rock.

Additional mitigation may be applied to prevent noise from reaching noise sensitive areas. One method is related to the blasting methodology and how the charges are set. Another method is to physically block the noise and air overpressure using massive barriers. Each of these methods and how they relate to the Pipeline Project are discussed below.

Specific impacts and mitigation of effects to federally listed species as a result of blasting activities are discussed in the Air, Noise and Fugitive Dust Control Plan (see Appendix B to the POD) as well as the FERC's Biological Assessment.

4.1.1 Charge-Related Noise Mitigation

Several parameters of the blast design may be modified to limit noise created from blasting activities. Table 1 summarizes different blast mitigation methods and their benefits. The methods used and their effectiveness depend on the rock formation, height and width of the blast area, and topography surrounding the blast location (Explosive Product Divisions Blaster's Handbook 1989).

Table 1
Charge-Related Noise Mitigation Methods

Mitigation Method	Benefit
Drill small charge holes on tight centers	Blast energy is contained in the rock so less energy is released into the atmosphere as noise and air-over-pressure
Leave approximately 3-4 feet of soil on top of the blast area during initial mechanical excavations	Leaving the soil on the blast area will contain blast noise and air-over-pressure from the blast, reducing noise impacts
Use blast mats on top of the soil on the blast area	Additional mass of the mats also contains the blast noise and air overpressure, increasing energy for fracturing rock and also reduces noise and overpressure.
Use of timing delays for charges	Limit the number of charges going off at any one time reduces the overall noise and air-over-pressure from the blast
Blast small horizontal and vertical sections	By taking smaller sections for each blast, less explosives are needed reducing overall energy related to the blast
Stem the blast holes with dense sand	Stemming is the practice of packing the top portions of the blast holes with sand after the charge is loaded. This helps to force the energy of the blast into the rock and helps prevent energy from blowing out of the top of the hole, reducing noise and air-over-pressure impacts.
Timing charges to direct blast vibration away from sensitive receivers	Through the use of proper timing, charges can be detonated to direct the transmission of vibration away from sensitive receivers
Source: Explosive Product Divisions Blaster's Handbook, 1989 and Rosenthal, 1987.	

4.1.2 Physical Mitigation Methods

Physical mitigation refers to the placement of a physical barrier between the noise source and receiver. Physical mitigation for blast noise would only be required if blasting is performed in noise sensitive areas. The effectiveness of this measure is dependent upon the mass and density of the barrier which is typically placed directly over the blast location. The goal of this measure is to reduce blast noise levels by up to approximately 15 dB. The blasting methodology anticipated for use during construction of the Pipeline Project would require placement of approximately 10 to 12 pounds of mass per square foot to achieve a reduction of 15 dB. Mass used to cover the blast area may include native or import soil or other material. Covering the blast area with several feet of on-site inert material should be sufficient to mitigate unacceptable noise and air overpressure impacts (Michael Minor & Associates 2008).

Additionally, mass could be added, as necessary, by covering the blast area with layers of blast mats. Blast mats are normally made of old tires or rubber conveyor belts and are very effective

at reducing blast overpressure and noise. Typically, blast mats can weigh as much as 50 pounds per square foot. As shown in Photo 1 below, typical blast mats would require the use of a loader, crane, or heavy-duty forklift to move and place the mats.

Photo 1
Typical Blast Mats Made from Used Tires

4.2 Vibration Mitigation

Particle velocity is a function of the type and size of charge, geologic properties and the distance between source and receptor. Blast induced vibration is best managed by proper blast design. Use of proper charge size and detonation sequence will help ensure vibration levels are managed within appropriate specifications to reduce vibration related impacts.

The current industry accepted PPV limit for blasting near in-service pipelines is 4 inches per second adjacent to the pipeline. Whenever blasting near third-party pipelines and other underground facilities, the more stringent of 4 inches per second or the requirements of the third-party operating company shall be implemented. For aboveground structures (including water wells), the peak particle velocity shall not exceed 2 inches per second.

For all aboveground facilities within 200 feet of blasting operations, additional seismograph equipment shall be used to monitor PPV at the aboveground facility. If the measured PPV at an existing pipeline or other structure exceeds the limits outlined above, blasting activities shall immediately cease. All potentially affected facilities will be inspected and the blasting plan will be modified to reduce the PPV prior to any further blasting. All aboveground facilities within 200 feet shall be inspected before and after all blasting activities.

If blasting occurs within 200 feet of identified water wells or potable springs, water flow performance and water quality testing will be conducted before blasting. If the water well is damaged, the well owner will either be compensated for damages or a new well will be provided.

When blasting near aboveground structures, charge size shall be in accordance with the scaled distance (SD) factor guidelines provided by the Office of Surface Mining Reclamation and Enforcement (OSMRE). For distances less than 300 feet, OSMRE states that the SD factor shall exceed 50. The SD factor is equal to the distance from the blast to the above-ground structure divided by the square root of the charge (lb/delay). Listed below (for convenience) are limits on charges as a function of distance in accordance with OSMRE:

Distance from Blast to Structure, ft	Maximum Charge lb/delay
50	1.0
60	1.4
70	2.0
80	2.6
90	3.2
100	4.0
110	4.8
120	5.8
130	6.8
140	7.8
150	9.0
175	12.2
200	16.0

4.3 Fly Rock Mitigation

Fly-rock refers to rock inadvertently thrown from the blast area or construction right-of-way. Mitigation measures to eliminate or reduce fly rock are the same as those used to reduce overpressure and PPV. These measures include using site specific blast plans with proper charge size, spacing, placement and sequence. In addition, blasting mats or padding shall be used on all shots where necessary to prevent scattering of loose rock onto adjacent property and to prevent damage to nearby structures and overhead utilities.

4.4 In-Water Blasting

It is not anticipated that in-water blasting will be required during construction of the Pipeline Project. However, blasting may occur near waterbodies or within dry streambeds.

PCGP may opt to blast stream crossing locations where consolidated rock makes traditional trenching methods unfeasible or costly. Explosives detonated near water may produce shock waves that generate hydrostatic pressure changes lethal to fish, eggs, and larvae (British Columbia Ministry of Transportation 2000). Shock waves propagated from ground to water are less lethal to fish than in water explosions since some energy is reflected or lost at ground-water interface (Alaska Department of Fish and Game 1991).

In order to limit the instantaneous hydrostatic pressure change (resulting from nearby blasting) to levels below those known to be harmful to fish and aquatic species, the types of explosives, size of charges, sequence of firing, etc. will be selected to minimize shock wave stresses on aquatic life adjacent to the blasting area.

The Alaska Department of Fish and Game (1991) reported that a pressure change of 2.7 psi is the level for which no fish mortality occurs and concluded that fish would be sufficiently protected from blasting by limiting overpressures to 2.7 psi. This conservative overpressure limit, is from 1.7 to 4.5 psi below mortality levels reported in other studies. The Alaska Department of Fish and Game (1991) further analyzed the straight line distances through rock and other materials for which various charge weights dissipated to an overpressure standard of 2.7 psi. This study concluded that overpressures generated by 1 to 2 pound charges detonated

in rock diminish to 2.7 psi at distances of 34 and 49 feet, respectively. This distance is further reduced if soil exists between the charge location and the receptor location.

When using the dam-and-pump or flume stream crossing method, the typical construction right-of-way configuration at a streambed (dry open-cut) crossing will be no less than 25-feet on one side of the pipe trench and 50+ feet on the opposite side of the pipe trench depending on the construction right-of-way width at the stream crossing (75 or 95 feet). Therefore, an area within the waterbody crossing approximately 25-feet wide (in the worst case scenario) may be exposed to instantaneous hydrostatic pressure changes above 2.7 psi.

New research (Dunlap, 2009) and an in-depth review (Kolden and Aimone-Martin 2013) of empirical studies of the physiological effects of blasting on adult salmonids and embryos prompted Alaska Department of Fish and Game to revise the blasting standard (Timothy 2013):

> *"The instantaneous pressure rise in the water column in rearing habitat and migration corridors is limited to no more the 7.3 psi where fish are present. Peak particle velocities in spawning gravels are limited to no more the 2.0 in/s during the early stages of embryo incubation before epiboly is complete."*

Application of the new standard for 7.3 psi in equations in Alaska Department of Fish and Game (1991) was used to derive setback distances from water for 2-pound charges in rock; a distance of about 26 feet would be adequate to avoid adverse effects to salmonids in water. The setback distance used in PCGP's Fish Salvage Plan (Appendix L to the POD) added 25 feet to each side of the construction right-of-way, totaling at least 50 feet from the blasting location at the trench. Application of the new Alaska Department of Fish and Game blasting standard for a 2-pound charge in bedrock would indicate that the current setback distance is more than adequate to insure blasting does not adversely affect ESA-listed coho salmon and other salmonid species during dry open cut crossings (i.e., flume or dam and pump).

When using the diverted open-cut stream crossing methodology at the South Umpqua River crossing locations, the construction right-of-way will be more amenable to the setback distances with an approximate 50-feet of construction right-of-way on both sides of the trench. However, as the trench proceeds across the stream bed, the trench blasting will approach the diverted portion of the stream crossing. This will likely result in blasting right up to the bladder dam edge which is used to divert the stream flow.

If instantaneous hydrostatic pressure differentials cannot be maintained at acceptable levels during construction in critical habitat locations, additional mitigation measures, such as modified blast design or bubble curtains may be employed. Bubble curtain mitigation involves the use of bubblers placed within the waterbody between the source and receptor to help attenuate pressure changes. Additionally, where blasting may need to occur within stream beds, mitigation measures to minimize impacts to aquatic species are provided in the Fish Salvage Plan included as Appendix L to the POD.

5.0 THIRD-PARTY BLASTING DURING PIPELINE OPERATIONS

The foregoing sections of this document serve to address blasting measures to be implemented by PCGP during construction. The purpose of this Section is to address concerns related to third party blasting conducted in the vicinity of the operational Pipeline.

PCGP will evaluate blast plans and conduct monitoring (as necessary) within 200 feet of the pipeline for general construction activity, quarries, utility construction and test facilities, and

within 1,500 feet of the pipeline for any large surface mining activities to help ensure the safety and integrity of the pipeline. This policy is common within the gas transmission industry. Oregon One Call laws and Oregon Occupational Safety and Health Division Administrative Rules will help ensure proper notifications are made prior to commencement of blasting operations. Following installation and commissioning of the Pipeline Project, the following Oregon Occupational Safety and Health Division Administrative Rules will apply: "Blasting operations in the proximity of overhead power lines, communication lines, utility services, or other services and structures shall not be carried on until the operators and/or owners have been notified and measures for safe control have been taken (Oregon Administrative Rules Oregon Occupational Safety and Health Division 1926.900(o))."

If rock harvesting/quarry development is required on federal lands in proximity to the Pipeline, a blast plan will be developed by the blasting contractor and will incorporate the necessary federal and industry specifications and stipulations. The blasting contractor will customize the blast plan to suit his equipment, strategy and desired yield volume. Once the final plan has been developed, PCGP and the federal agencies will review and accept the plan to ensure the proper guidelines have been met. If necessary, the parameters of a blast plan may generally be altered as long as the maximum charge weight per delay does not exceed a threshold limit.

The following bullet list illustrates the normal industry practice for development and acceptance of a blast plan. The blaster will develop his own blast plan to safely satisfy his contract requirements in compliance with the owner's blasting specifications. The normal procedure is as follows:

- The blasting contractor submits a general blast plan to the owner in compliance with the owner's blasting specifications.
- The owner or owner's blasting consultant and affected parties audit the submitted blast plan and approves or disapproves with comments and/or suggestions.
- With disapproval, the blaster resubmits, or goes to work with an owner approved blast plan.
- Following the blast, the blaster would submit a blast report showing the actual conditions of the blast in compliance with the owner's blasting specifications.

The blaster needs to write the final blast plan in compliance with the owner's blasting specifications. Only the blaster knows what type of drill will be used, what the shot rock will be used for and what size equipment will be used to excavate and handle material.

6.0 QUARRY BLASTING

The Agency managed Heppsie Mountain and Peavine quarries are located in the proximity of the Pipeline alignment. Both quarries are identified as regional rock product sources and are retained for future development. PCGP visited these sites with Agency personnel and a third party contract blaster and developed sample blast plans for each quarry (see Attachment A and Attachment B). The sample blast plans were developed as "most likely" scenarios and were evaluated for compliance with PCGP's specifications. The sample blast plans and analysis indicate future rock production could be safely accomplished using conventional blasting practices and without harm to the in-service pipeline.

Similar to pipeline blasting, quarry blasting is accomplished using charges in multiple holes detonated individually in a patterned sequence. This is necessary to achieve proper rock breakage and displacement. This type of patterned blast is therefore a series of small detonations rather than one large cumulative blast and produces a series of pressure waves

rather than one large cumulative wave. The analysis of an in-service pipeline subjected to blasting effects considers each individual pressure wave, provided the timing delay between each charge is sufficient. For a fixed location and type of explosive, the charge weight detonated per delay is the governing factor in pipe stress analysis. The other parameters used in the analysis of blasting near in-service pipelines include the physical properties and operating condition of the pipeline, the manufacturer, type and energy release ratio of the explosive, the maximum weight of explosive detonated per delay and geologic conditions.

ANFO is proposed for use during quarry blasting operations.

6.1 Heppsie Mountain Quarry

PCGP is aware of the BLM's intention to preserve the Heppsie Mountain quarry site as a potential source for rock and aggregate products, and has implemented measures to help ensure the future availability of this mineral resource. The original Pipeline alignment followed a two track road through the quarry area, bisecting the quarry. The alignment has since been moved down slope to avoid future concerns regarding lost production volumes and land stability. The nearest portion of the pipeline to the perceived quarry location is approximately 88 feet from exploratory boring BH-5 (see Figure 1 in Attachment A). The results of this boring suggest this is the practical limit of mineable rock products. Moreover, PCGP has reviewed existing bore logs and visited the site with blasting consultants to evaluate potential post installation impacts to mining operations or the pipeline.

Although PCGP has developed and analyzed sample blast plans and determined quarry development could be completed without harm to the in-service pipeline, the BLM requires that the Heppsie Mountain Quarry be shot prior to the installation of the pipeline. The resultant blasted rock will have dimensions of 24 inches or less. A map of the quarry indicating the area to be shot (outlined in blue), as well as cross sections of the quarry, are attached as Attachment A. These cross sections display the elevation, length and width of the quarry floor after the shot is completed. Once shot, the blasted rock will remain in place for future use as determined by the BLM.

The BLM is requiring this blasting because the BLM will not assume unknown risk associated with complications, limitations, or liability associated with developing this quarry in the future. The BLM will provide compensation to PCGP for all work associated with pre-blasting the Heppsie Mountain Quarry prior to the start of construction.

PCGP shall notify the Authorized Officer and the District Manager of the Medford District BLM at least seven calendar days prior to commencing quarry blasting operations. PCGP will be responsible for all blasting related activity conducted for the Pipeline Project.

6.2 Peavine Quarry

It is PCGP's understanding that all developed rock material at the existing Peavine Quarry has been utilized. Additional undeveloped resources have been identified at this site, including the rock knoll to the northeast of the existing pit. The minimum distance between the proposed rock source development area and the centerline is approximately 200 feet (see Figure 2 in Attachment B). PCGP visited the site with 3B Blast Consulting, Inc. to evaluate likely blasting scenarios and potential impacts to the in-service Pipeline. It is not anticipated that presence of the pipeline will hinder or impede rock products development at this site.

Notifications triggered by Oregon One Call laws and Oregon Occupational Safety and Health Division Administrative Rules will be made to PCGP prior to drilling and blasting operations

within the Quarry. If blasting operations are to be conducted within 200 feet of the in-service Pipeline, PCGP will require the opportunity to review and approve all blast plans prior to blasting. Seismic monitoring may also be required to help ensure continued safe operating conditions for both Pacific Connector and the Peavine Quarry. All costs associated with these additional monitoring and safety control measures at the Peavine quarry, required by the Company, shall be borne by PCGP.

7.0 SAFETY

7.1 Personnel Safety

Personnel safety is of paramount importance when conducting blasting operations. The following practices and procedures shall be strictly followed to help ensure safety of all persons, including the general public.

Only authorized, qualified, and experienced personnel shall handle explosives.

Smoking, firearms, matches, open flames, and heat-and-spark-producing devices shall be prohibited in or within 50 feet of explosive magazines or while explosives are being handled, transported, or used. No explosive material shall be located or stored where they may be exposed to flame, excessive heat, sparks, or impact. Additional considerations and measures are discussed in the Fire Prevention and Suppression Plan included as Appendix K to the POD.

A code of blasting signals shall be established and posted in conspicuous places. Employees, construction personnel, and visitors shall learn and use this code.

Contractor shall use every reasonable precaution including, but not limited to, visual and audible warning signals, warning signs, flag person, and barricades to ensure personnel safety.

Warning signs, with lettering a minimum of 4-inches in height on a contrasting background will be erected and maintained at all approaches to the blast area. Flaggers will be stationed on all roadways passing within 1,000 feet of the blast area to stop all traffic during blasting operations.

An audible blasting signal (air horn or siren) shall be sounded 5 minutes before and after each blast.

Blasting operations shall be conducted only during daylight hours.

Holes shall not be re-drilled which have contained explosive material. Holes shall not be drilled where danger exists of intersecting another hole containing explosive material.

Blasting shall not begin until occupants of nearby buildings, stores, residences, places of business, places of public gathering, and farmers have been notified by the Company sufficiently in advance to protect personnel, property, and livestock. Company shall notify all such occupants at least 72 hours prior to blasting.

No loaded blast holes shall be left unattended or unprotected. No explosives shall be abandoned. No loaded blast holes shall be left overnight.

In the case of a misfire, the blaster shall provide proper safeguards for personnel until the misfire has been re-blasted or safely removed.

All loading and blasting activity shall cease and personnel in and around the blast area will retreat to a position of safety, during the approach and progress of an electrical storm irrespective of the type of explosives or initiation system used. This is a key safety precaution and will always be observed. All explosive materials and all non-electric initiation systems are susceptible to premature initiation by lightning.

No drilling may commence near a previous blast area until such blast area has been inspected to verify the absence of misfires. If a misfire occurs adjacent to a hole to be drilled, the misfire is cleared by the blaster using whatever techniques are called for by the situation prior to commencement of drilling. Should a misfire occur at some distance from the drilling area, drilling may be stopped while clearing preparations are underway. When the misfire is to be cleared by reshooting, drilling will be shutdown and personnel evacuated to a place of safety prior to detonation.

All transportation of explosives will be in accordance with applicable federal, state and local laws and regulations. Any vehicle used to transport explosives shall be in proper working condition and equipped with tight wooden or non-sparking metal floor and sides. If explosives are carried in an open-bodied truck, they will be covered with a waterproof and flame-resistant tarpaulin. Wiring will be fully insulated to prevent short-circuiting, and at least two (2) hand-held fire extinguishers will be carried. The truck will be plainly marked as to its cargo so that the public may be adequately warned. Metal, flammable or corrosive substances will not be transported in the same vehicle with explosives. There will be no smoking, and unauthorized or unnecessary personnel will not be allowed in the vehicle. Loading and unloading of explosives will be done carefully by competent, qualified personnel.

Metallic slitters will be used to open fiberboard cases, provided the metallic slitter does not come in contact with the metallic fasteners of the case. There will be no smoking, no matches, no open lights, or other fire or flame nearby while handling or using explosives. Explosives will not be placed where they are subject to flame, excessive heat, sparks or impact. Partial cases or packages of explosives will be closed after use. No explosives will be carried in the pockets or clothing of personnel.

No blast will be fired without a positive signal from the “person in charge” or head blaster. This person will have made certain that all surplus explosives are in a safe place; all persons, vehicles, and/or boats are at a safe distance; and adequate warning has been given. Adequate warning of a blast will consist of but not be limited to the following:

- Notification of day and time given to BLM/FS, railroads, highway departments, city engineer, etc. Notification must be given at least 72 hours prior to blasting;
- Notification of homeowners nearby;
- Stopping vehicular and/or pedestrian traffic near the blast site; and
- Signal given by an air horn, whistle or similar device using standard warning signals.

Only authorized and necessary personnel will be present where explosives are being handled or used.

Condition of the hole will be checked with a wooden tamping pole prior to loading. Surplus explosives will not be stacked near working areas during loading. Detonating fans will be cut from spool before loading the balance of charge into the hole. No explosives will be forced into

a bore hole past an obstruction. Loading will be done by a blaster holding a valid license or by construction personnel under his direct supervision.

7.2 Storage of Explosives

Explosive materials shall not be stored on Federal land without prior written permission from the BLM/FS. Copies of this permission shall be posted on each magazine and a copy given to the construction Chief Inspector.

All explosives and initiation devices shall be stored in locked magazines that have been located, constructed, approved, and licensed in accordance with federal, state, and local regulations. Magazines shall be dry, well ventilated, reasonably cool (painting of the exterior with a reflective color), bullet and fire resistant, and kept clean.

Magazine location shall be in accordance with federal, state, and local regulations. Where no regulations apply, magazines shall be located in accordance with the latest edition of the 175th anniversary edition of the Blaster's Handbook and ATF P5400-7 "Explosives Law and Regulations" (Bureau of Alcohol, Tobacco and Fire Arms).

Magazines shall be marked in minimum 3-inch high letters with the words "DANGER – EXPLOSIVES." Signs shall be staked 10' away from and at a 45-degree angle to the magazine. Placement and angle should insure that a bullet fired perpendicular to the face of the sign does not penetrate the magazine.

Initiation devices shall not be stored in the same box, container or magazine with other explosives. Explosives and initiation devices shall not be stored in wet or damp areas; near oil, gasoline, cleaning solvents; near sources of heat, radiators, steam pipes, stoves, etc. No metal or metal tools shall be stored in the magazine. There shall be no smoking, matches, open lights, or other fire or flame inside or within 50 feet of storage magazines or explosive materials. The loading and unloading of explosive materials into or out of the magazine shall be done in a professional manner with no loitering, horseplay, or prank-playing.

Magazines shall be kept locked at all times unless explosives are being delivered or removed by authorized personnel. Admittance shall be restricted to the magazine keeper, blasting supervisor, or licensed blaster. Magazine construction shall meet the requirements of ATF P5400.7 "Explosives Law and Regulations" (Bureau of Alcohol Tobacco and Fire Arms) and all applicable federal, state, and local regulations.

Accurate and current records shall be kept of the explosive material inventory to ensure that oldest stocks are utilized first, satisfy regulatory requirements and for immediate notification of any loss or theft. Magazine records shall reflect the quantity of explosions removed, the amount returned, and the net quantity used at the blasting site. Recordkeeping shall comply with the applicable regulations of the BATF and the Department of Homeland Security.

When explosive materials are taken from the storage magazine they shall be kept in the original containers until used. Small quantities of explosive materials may be placed in day boxes, powder chests or detonator boxes. Any explosive material not used at the blast site shall be returned to the storage magazine and replaced in the original container as soon as possible.

8.0 REFERENCES

Alaska Department of Fish and Game. 1991. Rationale for Blasting Standards (11 AAC 95) Developed to Prevent Explosive Injury to Fish. Alaska Department of Natural Resources Office of Habitat Management and Permitting.

Dunlap, K. 2009. Blasting Bridges and Culverts: Water Overpressure and Vibration Effects on Fish and Habitat. M.S. thesis. University of Alaska Fairbanks, Juneau, AK.

Explosives Product Division. *Blasters' Handbook.* 1989. 16th edition Wilmington, Delaware: E.I. du Pont de Nemours & Co., Inc.

GeoEngineers, 2017. Geologic Hazards and Mineral Resources Report. Pacific Connector Gas Pipeline Project. Coos Bay to Malin Oregon. August 21, 2017. Prepared for Pacific Connector Gas Pipeline, LP.

Kolden, K.D., and C. Aimone-Martin. 2013. Blasting Effects on Salmonids. Final report June 2013 (IHP-13-051). Prepared for the Alaska Department of Fish and Game, Division of Habitat, Douglas, AK.

Michael Minor & Associates. 2008. Blasting and Helicopter Noise Analysis & Mitigation Plan. Construction Support Noise Analysis Coos Bay to Malin, Oregon. February 2008. Prepared for Pacific Connector Gas Pipeline, L.P. Portland, Oregon.

Rosenthal, Michael F., and Gregory L. Morlock. 1987. Blasting Guidance Manual. Washington, D.C.: U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement.

Timothy, J. 2013. Alaska Blasting Standard for the Proper Protection of Fish. Technical Report No. 13-03. Alaska Department of Fish and Game, Douglas, AK.

Attachment A

Heppsie Mountain Quarry

SAMPLE

3B BLAST CONSULTING, INC.

2135 M ROAD, GRAND JUNCTION, CO 81505 PHONE & FAX 970-858-0980

BLAST PLAN

JOB NAME HEPPSIE MTN. QUARRY DATE

ADDRESS TIME AM/PM

BLAST NUMBER & STATION NUMBER SAMPLE

NAME & LICENSE NUMBER OF BLASTER:

SIGNATURE BLAST CREW

DIRECTION AND DISTANCE TO NEAREST STRUCTURE PACIFIC CONNECTOR PIPELINE 85' N. OF BLAST

WEATHER CONDITIONS

TYPE OF MATERIAL BLASTED	1. BASALT	NUMBER OF HOLES 1. 16	BURDEN 1. 6'	SPACING 1. 6'
	2.	2.	2.	2.
HOLE DIAMETER	1. 3" Ø	HOLE DEPTH 1. 22'	STEMMING TYPE 1. CRUSHED ROCK	STEMMING LENGTH 1. 5'
	2.	2.	SUBDRILL 2'	2.

EXPLOSIVES/ACCESSORIES TYPE/BRAND NAME	LBS/UNITS	EXPLOSIVES/ACCESSORIES TYPE/BRAND NAME	LBS/UNITS
ORICA ANFO	704#	30' ORICA HANDI DET 25/50ms	16 ea
ORICA PENTEX CAST BOOSTERS 1/4#	4#	12' ORICA EXEL CONNECTADET 42ms	5 ea

TOTAL POUNDS IN SHOT 708#

MAXIMUM HOLES PER DELAY 1 MAXIMUM LOADED POUNDS PER DELAY 44#

NUMBER OF DECKS PER HOLE N/A LOADED POUNDS PER DECK N/A

INITATION SYSTEM ELECTRIC (NONELECTRIC) BRAND NAME ORICA

BLASTING MACHINE USED SHOTSHELL PRIMER

DELAY PERIODS USED 25 & 42 MS

TOTAL NUMBER OF CAPS OR DELAY CONNECTORS 2/ea

MATS OR OTHER PROTECTION USED YES (NO) TYPE

SAMPLE

BLAST PLAN

3B BLAST CONSULTING,INC.

SKETCH OF BLAST LAYOUT

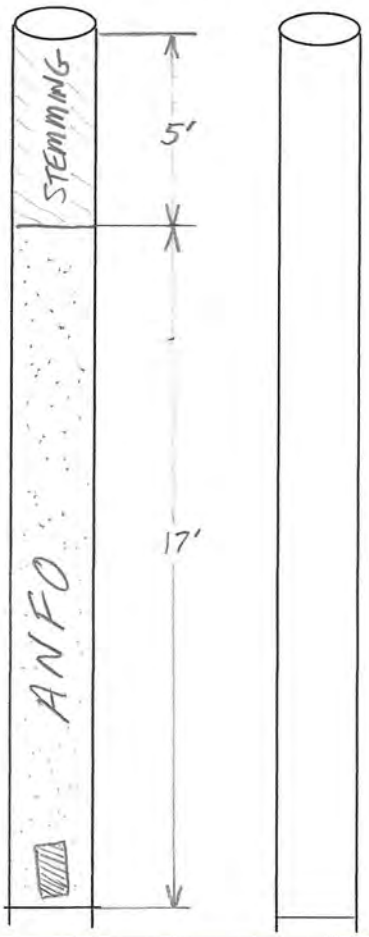
IDENTIFY SHOT LOCATION BY STATION, OR BY DIRECTION AND DISTANCE TO KNOWN STRUCTURE OR OBJECT. SHOW NORTH ARROW. SHOW DELAY NUMBER BY HOLE AND WIRING/CORD/TUBING HOOKUP.

BLAST LOCATION & BLAST NUMBER SAMPLE DATE _____

SEE ATTACHED DRAWING

TYPICAL HOLES

SHOW: DEPTH, STEMMING, DECKS, WATER, PRIMER LOCATIONS, SUBDRILLING, ETC.



DITCH FOOTAGE _____ FEET

QUANTITY OF MATERIAL BLASTED 432 CUBIC YARDS
1,088 TONS

POWDER FACTOR: 1.6 LBS/CUBIC YARD
___LBS/TON

SEISMOGRAPH RESULTS (IF USED, RECORDS ATTACHED)

TYPE _____ NAME OF OPERATOR _____ COMPANY _____

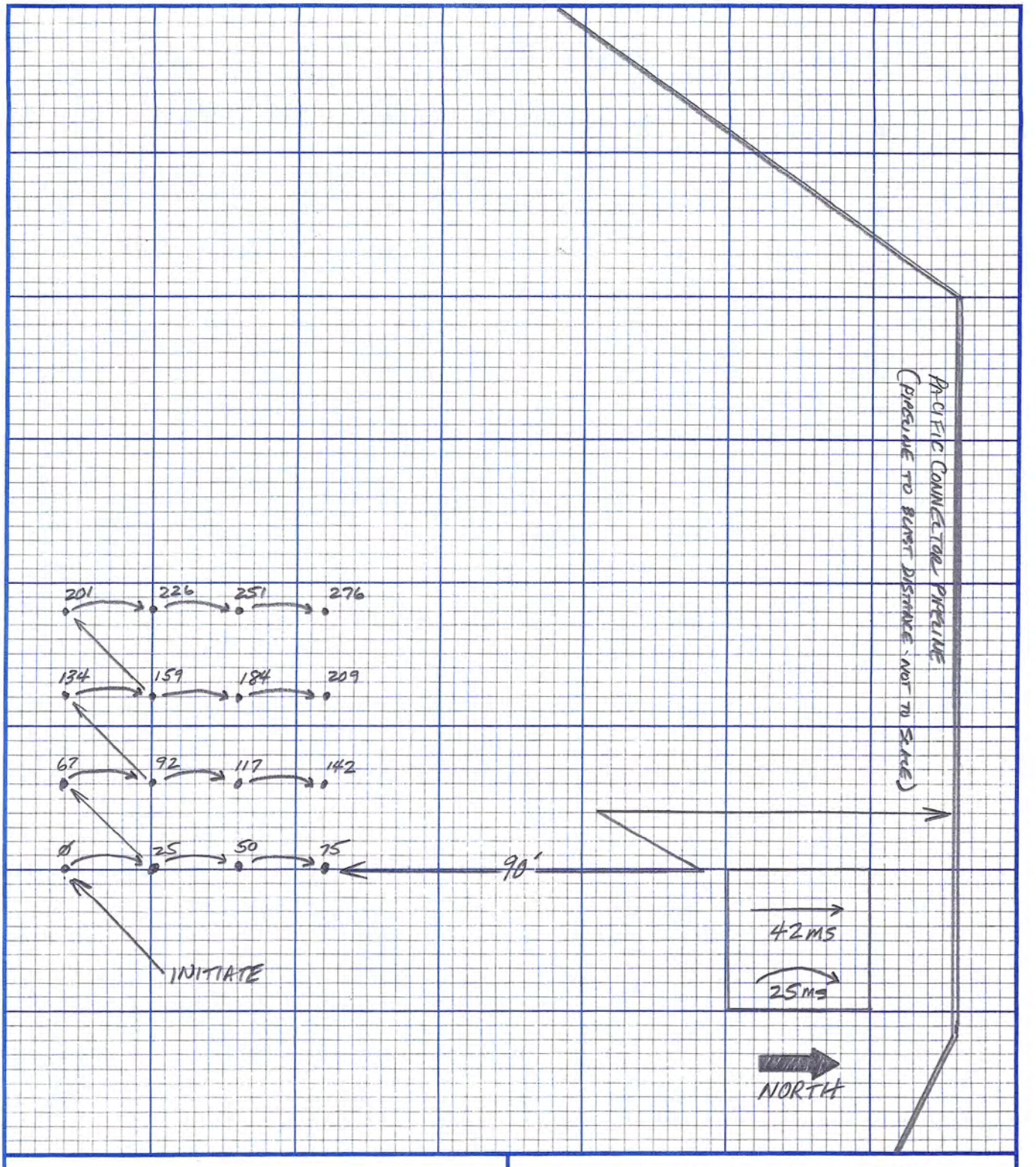
LOCATION OF SETUP _____ DISTANCE FROM BLAST SITE _____ DIRECTION FROM BLAST SITE _____

PEAK PARTICLE VELOCITY _____ MEASUREMENTS _____ TRANSVERSE _____ VERTICAL _____ LONGITUDINAL PEAK SOUND PRESSURE _____

SHOT RESULTS

FRAGMENTATION _____ MUCKPILE _____ FLYROCK _____

COMMENTS _____



3B Blast Consulting, Inc.

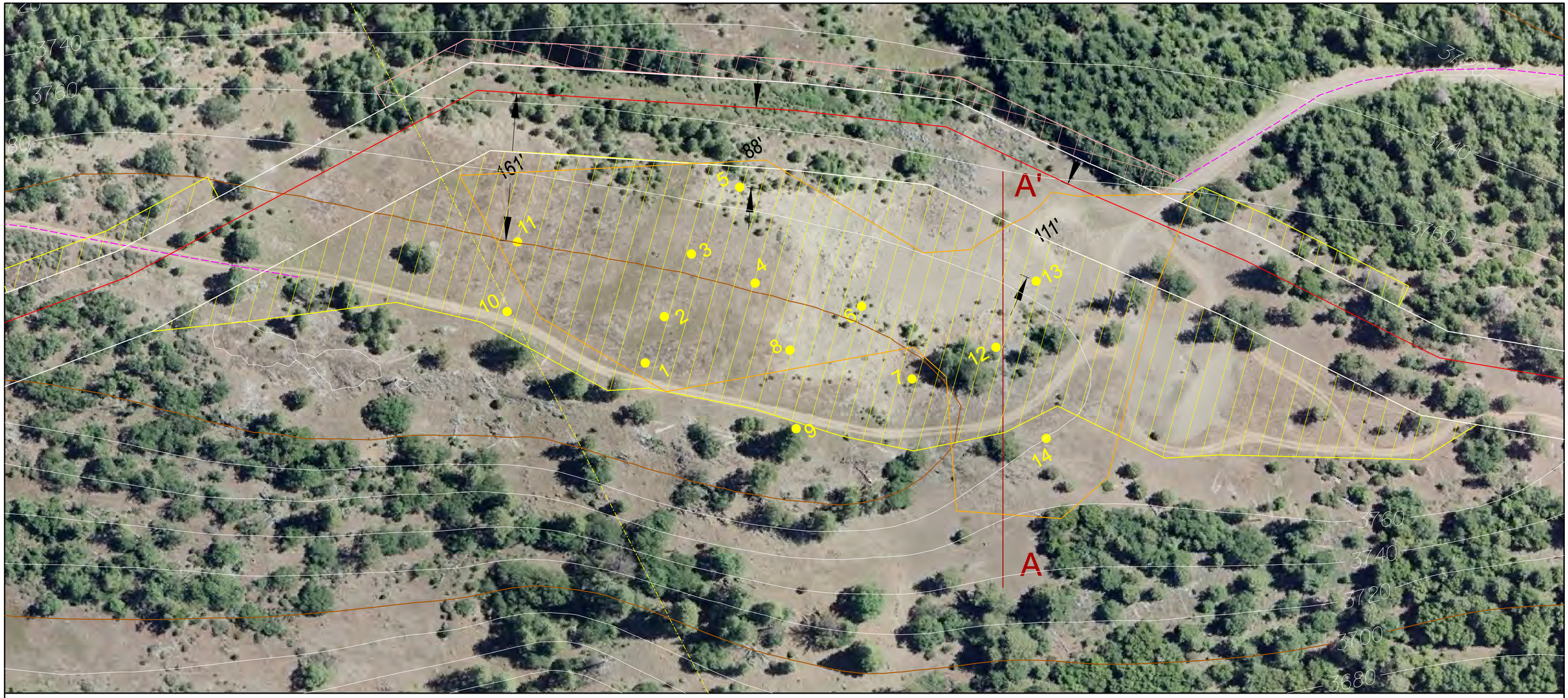
2135 M Road
Grand Junction, Colorado 81505
Office (970) 858-0980
Cell (970) 260-6820

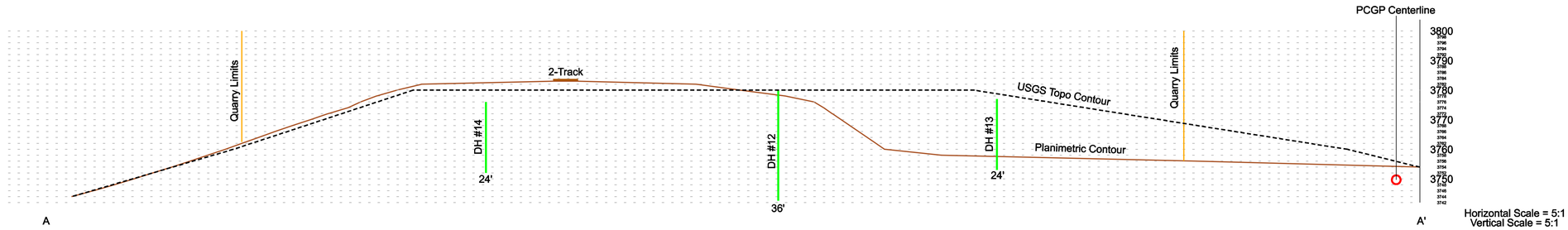
PROJECT: SAMPLE BLAST PATTERN & TIMING DIAGRAM

LOCATION: HEPPSIE MTN. QUARRY

DATE: 11/2/09

10 SCALE





LEGEND

- 36-inch Proposed PCGP Project Construction Right-of-Way
- *(Shown as white on photography)*
- Temporary Extra Work Area
- Uncleared Storage Area
- Tax Parcel Boundaries
- Heppsie Mtn. Quarry Limits
- Bore Holes

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
0	02-21-08	EE	DRAFT RE-ISSUED FOR FERC REVIEW		DD	DD

50 0 50 100 150 FEET

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
ENVIRONMENTAL ALIGNMENT

BLM HEPPSIE MOUNTAIN QUARRY

Pacific Connector GAS PIPELINE

DRAWN BY: JST	DATE: 01-MAR-2007	ISSUED FOR BID:	
CHECKED BY: JST	DATE: 01-MAR-2007	ISSUED FOR CONSTRUCTION:	
APPROVED BY: EE	DATE: 01-MAR-2007	DRAWING NUMBER: Figure 1	SHEET OF
		$DATE$	
		$FILE$	

Heppsie Mountain Quarry
SAMPLE/DRAFT BLASTING SPECIFICATIONS

PURPOSE

This document is to state Company's procedure for drilling and blasting in the Heppsie Mountain Quarry.

REFERENCES

The blasting specifications incorporate by inclusion and reference to the following publications:

1. The Surface Mining Control and Reclamation Act of 1977 (30 USC 1201).

2. Department of Interior's Office of Surface Mining Reclamation and Enforcement Regulations (30 CFR, Parts 715, 780, 816 and 817).

3. Federal Occupational Safety and Health Standard (29 CFR 1910.109, Explosives and Blasting Agents).

4. BATF, Federal Explosives Law and Regulations (ATF P 5400.7).

5. Blaster's Handbook, ISEE 17th Edition.

6. Explosives Engineering, Construction Vibrations and Geotechnology, by Lewis L. Oriard

7. Department of Interior, Bureau of Mines, RI 9523, Surface Mine Blasting Near Pressurized Pipelines, Report of Investigations/1994

8. Vibration and Ground Rupture Criteria For Buried Pipelines, by Lewis L. Oriard

DEFINITIONS

Airblast – The airborne shock wave or acoustic transient generated by an explosion.

ANFO – A blasting agent containing no essential ingredients other than prilled ammonium nitrate and fuel oil.

Blast (Blasting) - The firing of explosive materials for breaking rock.

Blast Area – The area of a blast within the influence of flying rock missiles, gases, and concussion.

Blast Hole (Drill Hole, Bore Hole) – A hole drilled in the material to be blasted for the purpose of containing an explosive charge.

Blasting Contractor – The contractor performing the blasting.

Blaster-in-Charge – The person qualified to be in charge of and responsible for the loading and firing of a blast.

Blasting Vibrations – The energy from a blast that manifests itself in vibrations, which are transmitted through the earth away from the immediate blast area.

Burden – The distance from the borehole and the nearest free face or the distance between boreholes measured perpendicular to the spacing. Also the material to be blasted by a given hole.

Collar – The mouth or opening of a borehole.

Column Charge – A charge of explosives in a blasthole in the form of a long continuous or unbroken column

Company –Pacific Connector Gas Pipeline, LP.

Company Engineer – The PCGP assigned Engineer.

Company Representative – The Company Line Supervisor, Area Maintenance Supervisor, Assigned Inspector, or Administrator who is responsible for investigating the proposed blasting as set forth below.

Cutoff – A break in a path of detonation or initiation caused by extraneous interference, such as flyrock or shifting ground.

Deck Loading (Decking) – A method of loading explosives in which the explosive charges called decks or deck charges, in the same hole, are separated by stemming or an air cushion.

Delay – A distinct pause of predetermined time between detonation or initiation impulses to permit the firing of explosive charges separately.

Density – The mass of an explosive per unit volume, usually expressed in grams per cubic centimeter or pounds per cubic foot.

Detonating Cord – A flexible cord containing a center core of high explosive, which may be used to initiate other high explosives.

Detonator – Any device containing an initiating or primary explosive that is used for initiating detonation in another explosive material.

Dynamite – A high explosive used for blasting, consisting essentially of a mixture of, but not limited to nitroglycerin, nitrocellulose, ammonium nitrate, sodium nitrate, and carbonaceous materials.

Emulsion – An explosive material containing substantial amounts of oxidizer dissolved in water droplets, surrounded by immiscible fuel, or droplets of an immiscible fuel surrounded by water containing substantial amounts of oxidizer.

Facility – Pipelines and their appurtenances, including, but not limited to, buildings, pump houses, warehouses, etc.

Flyrock – Rocks propelled from the blast area by the force of the explosion.

Ground Vibration – Shaking the ground by elastic waves emanating from a blast; usually measured in inches per second of peak particle velocity.

Inhabited Buildings – A building regularly occupied in whole or part as a habitation for human beings, or any church, schoolhouse, railroad station, store, or other structure where people are accustomed to assemble.

Nonelector Detonator – A detonator that does not require the use of electric energy to function.

Particle Velocity – A measure of the intensity of ground vibration, specifically the velocity of motion of the ground particles as they are excited by the wave of energy.

Powder Factor – The amount of explosive used per unit of rock.

MAOP – Maximum Allowable Operating Pressure

Scaled Distance – A factor relating similar blast effects from various charges of explosive material at various distances.

Spacing – The distance between boreholes. In bench blasting, the distance is measured parallel to the free face and perpendicular to the burden.

Stemming - Inert material placed in a borehole on top of or between separate charges of explosive material. Used for the purpose of confining explosive materials or to separate charges of explosive material in the same borehole.

Subdrilling – The practice of drilling boreholes below floor level or working elevation to insure breakage of rock to working elevation.

For additional blasting terminology, refer to Blaster's Handbook, ISEE 17th Edition.

POLICY

Before any blasting is permitted, the blasting contractor will submit a blast plan to the BLM. No blasting will be permitted until the BLM and PCGP accept the blast plan. If an unsuitable blast is performed, the BLM, in consultation with the Company representative, may require that a new blast plan be submitted for BLM/ Company acceptance before drilling and blasting resumes.

The blasting contractor will be responsible for the blast plan and all blasting related activity shall be in compliance with all regulatory agencies.

The BLM, in consultation with the Company, will, at all times, have the authority to prohibit or halt the contractor's blasting operations if it is apparent that, through the methods being employed, the blasting specifications are not being employed, regulations are not being followed, or unsuitable blasting results are being obtained.

BLASTING CONTRACTOR DATA

1. Name, address, phone numbers
2. Contact person, phone numbers
3. BATF Permit
4. State &and local permit(s), if applicable
5. Insurance as required

BLAST PLAN

Acceptance of the blast plan by the BLM/Company does not relieve the contractor of his responsibility for the accuracy and adequacy of the plan when implemented in the field. The blast plan shall contain full details of the drilling and blasting patterns and controls that the contractor proposes to use.

The blast plan will be reviewed and signed by the blaster- in -charge to acknowledge his understanding and compliance with the plan.

The blast plan shall contain the following minimum information:

1. Resume, references & licenses of blaster-in-charge.
2. Anticipated number of holes to be drilled and shot per blast.
3. Scaled plan and section views of the proposed drill pattern including free face, burden, spacing, blast hole diameter, blast hole angles, cut depth and subdrill depth.
4. Scaled loading diagram showing the type and amount of explosives, primers, initiators and location and depth of stemming, including the material to be used as stemming. Maximum amount of explosives to be used per delay and per blast.
5. A diagram and explanation of the initiation sequence of blast holes including delay times for each blast hole. The type of delay system.
6. Manufacturer's product information sheets and material safety data sheets for all explosives, primers, delays and initiators to be used.
7. Sample of blast report to be used.
8. Vibration and airblast monitoring plan to include:
    a. Description of blast monitoring equipment and list if individuals that will operate such equipment
    b. Calibration records

9. Description of flyrock controls
10. Method of handling misfires or cut-offs
11. Complete description of the clearing and guarding procedures that will be used to ensure employees, company representatives, visitors and the general public are restricted to safe locations and accounted for during blasting. This description shall include, but not be limited to:
    a. Visible and audible warning signs and signals
    b. Access blocking methods
    c. Guard placement and release procedure
    d. Primary initiation procedure
    e. System by which the blaster-in-charge will communicate with right of way security guards
15. Description of explosives storage to include:
    a. Approval of BATF, stage agency and local fire department (if applicable) and landowner
    b. Inventory control and documentation

c. Control of explosives on the right of way to prevent theft
d. Magazine location

16. Description of explosives and accessories transportation procedure.
17. Fire Prevention and Suppression Plan

BLAST REPORT

A record of each blast will be kept on file and submitted with the seismograph report to the company representative not later than the next workday after the blast, and before the next blast. The blast report shall contain at least the following minimum data as applicable:

1. Name of blasting contractor
2. Exact location of the blast, date and time of detonation
3. Type of material blasted
4. Number of holes, burden and spacing
5. Diameter and depth of holes
6. Types of explosives used
7. Total amount of each explosive used
8. Maximum amount of explosives and holes detonated within 8 milliseconds
9. Method of firing type and circuit
10. Direction, distance in feet and identification of the nearest facility, pipeline or inhabited building
11. Weather conditions
12. Type and height or length of stemming
13. A statement as to whether mats or protection against flyrock were used
14. Type of delay caps used and delay periods used
15. The person taking the seismograph reading shall accurately indicate exact location of the geophone placement and shall show the distance of the seismograph from the blast
16. Seismograph records
17. Sketch of blast pattern, including number of holes, burden and spacing distance, delay pattern, and if decking is used, a hole profile.

BLASTING OPERATIONS

1. All blasting operations, including the transport, storage, handling, and loading of explosives shall be performed under the direct supervision of the blaster-in-charge and in accordance with all Federal, State, and local regulations. The blaster-in-charge must be authorized to act on behalf of the blasting contractor and be licensed by the applicable regulatory agencies to possess, transport and use explosives.

2. Blast holes shall be drilled on the patterns shown on the blast plan and shall not exceed 3” in diameter unless approved by the BLM/Company.
3. 52 pounds of explosives per 8 millesecond delay shall be the maximum charge weight allowed.
4. Hole plugs shall be placed in the blast holes as they are drilled to prevent overburden, drill cuttings or other foreign material from falling into the holes after drilling.
5. Cap and fuse initiation shall not be allowed.
6. A nonelectric, surface delay and in-hole detonator initiation system shall be used (Example: Handidet, EZ Det) for sequential initiation of charges. *One hole per delay shall be initiated.*
7. Clean, 3/8” minus angular crushed rock stemming material shall be used in all blastholes. Drill cuttings shall not be allowed for use as stemming.
8. Vibration and Airblast:
    a. All blasts shall be monitored. The geophone shall be placed on undisturbed ground on the side closest to the blast on the Pacific Connector Gas Pipeline. The geophone placement shall comply with standards discussed in Chapter 38: Vibration and Airblast, of the ISEE Blaster’s Handbook, 17th Edition.
    b. Vibration limits for buried pipelines shall be 4 inches per second peak particle velocity.
    c. The Blaster shall be responsible for vibration and airblast monitoring. If the specified vibration and airblast limits are exceeded, the blast plan shall be revised and drilling and blasting operations will be terminated until acceptance of the revised blast plan is granted by the BLM in consultation with the Company.

Attachment B

Peavine Quarry

SAMPLE

3B BLAST CONSULTING, INC.

2135 M ROAD, GRAND JUNCTION, CO 81505 PHONE & FAX 970-858-0980

BLAST PLAN

JOB NAME PEAVINE ROCK QUARRY DATE

ADDRESS TIME AM/PM

BLAST NUMBER & STATION NUMBER SAMPLE

NAME & LICENSE NUMBER OF BLASTER:

SIGNATURE BLAST CREW

DIRECTION AND DISTANCE TO NEAREST STRUCTURE PACIFIC CONNECTOR PIPELINE OVER 200' N. OF CLOSEST HOLE

WEATHER CONDITIONS

TYPE OF MATERIAL BLASTED	1. BASALT	NUMBER OF HOLES	1. 150	BURDEN	1. 8'	SPACING	1. 8'
	2.		2.		2.		2.
HOLE DIAMETER	1. 4" Ø	HOLE DEPTH	1. 22'	STEMMING TYPE	1. CRUSHED ROCK	STEMMING LENGTH	1. 7'
	2.		2.	SUBDRILL	2'		2.

EXPLOSIVES/ACCESSORIES TYPE/BRAND NAME	LBS/UNITS	EXPLOSIVES/ACCESSORIES TYPE/BRAND NAME	LBS/UNITS
ORICA ANFO	10,350#	30' ORICA EXEL HANDIDET 25/9oms	150
ORICA PENTEX CAST BOOSTER 1/4#	37.5#	12' ORICA EXEL CONNECTADET 42MS	31

TOTAL POUNDS IN SHOT 10,387.5#

MAXIMUM HOLES PER DELAY 1 MAXIMUM LOADED POUNDS PER DELAY 69#

NUMBER OF DECKS PER HOLE N/A LOADED POUNDS PER DECK N/A

INITATION SYSTEM ELECTRIC (NONELECTRIC) BRAND NAME ORICA

BLASTING MACHINE USED SHOTSHELL PRIMER

DELAY PERIODS USED 25 & 42 MS

TOTAL NUMBER OF CAPS OR DELAY CONNECTORS 181

MATS OR OTHER PROTECTION USED YES (NO) TYPE

SAMPLE

BLAST PLAN

3B BLAST CONSULTING,INC.

SKETCH OF BLAST LAYOUT

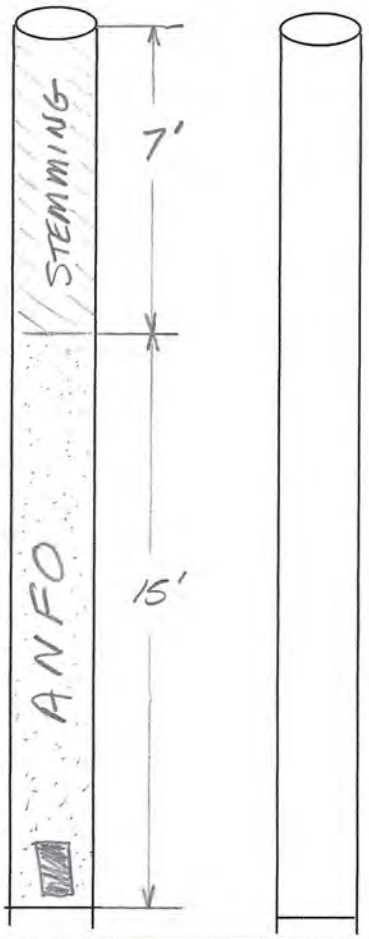
IDENTIFY SHOT LOCATION BY STATION, OR BY DIRECTION AND DISTANCE TO KNOWN STRUCTURE OR OBJECT. SHOW NORTH ARROW. SHOW DELAY NUMBER BY HOLE AND WIRING/CORD/TUBING HOOKUP.

BLAST LOCATION & BLAST NUMBER SAMPLE (PEAVINE QUARRY) DATE _____

TYPICAL HOLES

SHOW: DEPTH, STEMMING, DECKS, WATER, PRIMER LOCATIONS, SUBDRILLING, ETC.

SEE ATTACHED DRAWING



DITCH FOOTAGE _____ FEET

QUANTITY OF MATERIAL BLASTED 2,050 CUBIC YARDS

18,000 TONS

POWDER FACTOR: 1.47 LBS/CUBIC YARD

___LBS/TON

SEISMOGRAPH RESULTS (IF USED, RECORDS ATTACHED)

TYPE _____ NAME OF OPERATOR _____ COMPANY _____

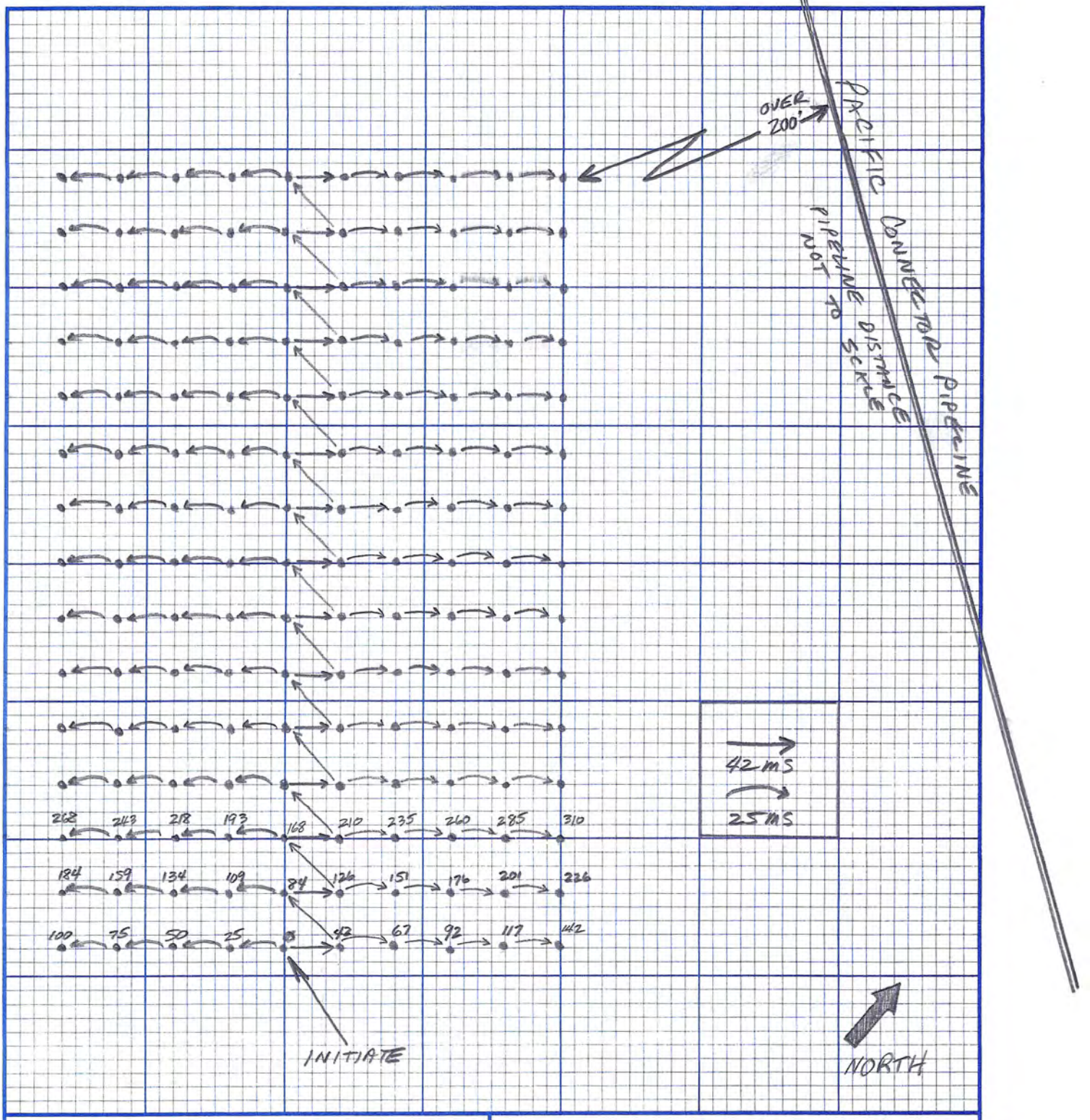
LOCATION OF SETUP _____ DISTANCE FROM BLAST SITE _____ DIRECTION FROM BLAST SITE _____

PEAK PARTICLE VELOCITY _____ MEASUREMENTS _____ TRANSVERSE _____ VERTICAL _____ LONGITUDINAL PEAK SOUND PRESSURE _____

SHOT RESULTS

FRAGMENTATION _____ MUCKPILE _____ FLYROCK _____

COMMENTS _____



3B Blast Consulting, Inc.

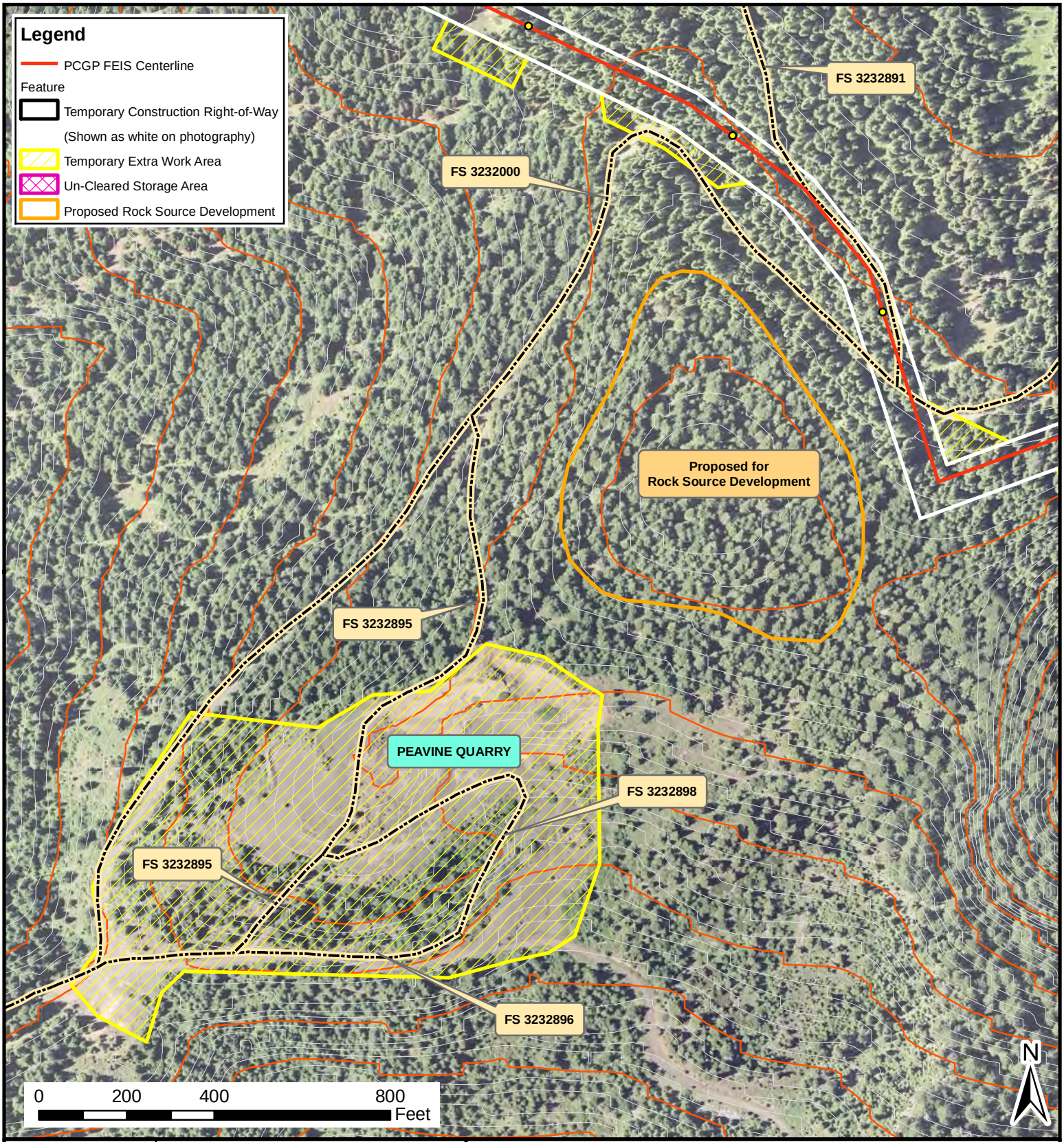
2135 M Road
Grand Junction, Colorado 81505
Office (970) 858-0980
Cell (970) 260-6820

PROJECT: SAMPLE BLAST PATTERN

LOCATION: PEAVINE ROCK QUARRY

DATE: 11/2/09

NO SCALE



DRAWING NO.	REFERENCE TITLE

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP

FOREST SERVICE PEAVINE QUARRY

Pacific Connector GAS PIPELINE

NO.	DATE	BY	REVISION NUMBER	W.O. NO.	CHK.	APP
0	03-09-2010	EE	PLAN OF DEVELOPMENT BLASTING PLAN		DD	DD

DWG. BY:	DATE:	ISSUED FOR BID:	SCALE: AS NOTED
CHK BY:	DATE:	ISSUED FOR CONTS:	
APPR. BY:	DATE:	DRAWING NUMBER: **Figure 2**	SHEET OF

Peavine Rock Quarry
SAMPLE/DRAFT BLASTING SPECIFICATIONS

PURPOSE — This document is to state Company's procedure for drilling and blasting in the Peavine Rock Quarry.

REFERENCES — The blasting specifications incorporate by inclusion and reference to the following publications:

1. The Surface Mining Control and Reclamation Act of 1977 (30 USC 1201).
2. Department of Interior's Office of Surface Mining Reclamation and Enforcement Regulations (30 CFR, Parts 715, 780, 816 and 817).
3. Federal Occupational Safety and Health Standard (29 CFR 1910.109, Explosives and Blasting Agents).
4. BATF, Federal Explosives Law and Regulations (ATF P 5400.7).
5. Blaster's Handbook, ISEE 17th Edition.
6. Explosives Engineering, Construction Vibrations and Geotechnology, by Lewis L. Oriard
7. Department of Interior, Bureau of Mines, RI 9523, Surface Mine Blasting Near Pressurized Pipelines, Report of Investigations/1994
8. Vibration and Ground Rupture Criteria For Buried Pipelines, by Lewis L. Oriard
9. Standard Specifications For Construction of Roads and Bridges on Federal Highway Projects, FP03 (U.S. Customary Units), Section 205 – Rock Blasting, and all applicable USFS Supplemental Specifications.

DEFINITIONS — Airblast – The airborne shock wave or acoustic transient generated by an explosion.

ANFO – A blasting agent containing no essential ingredients other than prilled ammonium nitrate and fuel oil.

Blast (Blasting) - The firing of explosive materials for breaking rock.

Blast Area – The area of a blast within the influence of flying rock missiles, gases, and concussion.

Blast Hole (Drill Hole, Bore Hole) – A hole drilled in the material to be blasted for the purpose of containing an explosive charge.

Blasting Contractor – The contractor performing the blasting.

Blaster-in-Charge – The person qualified to be in charge of and responsible for the loading and firing of a blast.

Blasting Vibrations – The energy from a blast that manifests itself in vibrations, which are transmitted through the earth away from the immediate blast area.

Burden – The distance from the borehole and the nearest free face or the distance between boreholes measured perpendicular to the spacing. Also the material to be blasted by a given hole.

Collar – The mouth or opening of a borehole.

Column Charge – A charge of explosives in a blasthole in the form of a long continuous or unbroken column

Company –Pacific Connector Gas Pipeline, LP. (PCGP)

Company Engineer – The PCGP assigned Engineer.

Company Representative – The Company Line Supervisor, Area Maintenance Supervisor, Assigned Inspector, or Administrator who is responsible for investigating the proposed blasting as set forth below.

Cutoff – A break in a path of detonation or initiation caused by extraneous interference, such as flyrock or shifting ground.

Deck Loading (Decking) – A method of loading explosives in which the explosive charges called decks or deck charges, in the same hole, are separated by stemming or an air cushion.

Delay – A distinct pause of predetermined time between detonation or initiation impulses to permit the firing of explosive charges separately.

Density – The mass of an explosive per unit volume, usually expressed in grams per cubic centimeter or pounds per cubic foot.

Detonating Cord – A flexible cord containing a center core of high explosive, which may be used to initiate other high explosives.

Detonator – Any device containing an initiating or primary explosive that is used for initiating detonation in another explosive material.

Dynamite – A high explosive used for blasting, consisting essentially of a mixture of, but not limited to nitroglycerin, nitrocellulose, ammonium nitrate, sodium nitrate, and carbonaceous materials.

Emulsion – An explosive material containing substantial amounts of oxidizer dissolved in water droplets, surrounded by immiscible fuel, or droplets of an immiscible fuel surrounded by water containing substantial amounts of oxidizer.

USFS—Umpqua National Forest

Facility – Pipelines and their appurtenances, including, but not limited to, buildings, pump houses, warehouses, etc.

Flyrock – Rocks propelled from the blast area by the force of the explosion.

Ground Vibration – Shaking the ground by elastic waves emanating from a blast; usually measured in inches per second of peak particle velocity.

Inhabited Buildings – A building regularly occupied in whole or part as a habitation for human beings, or any church, schoolhouse, railroad station, store, or other structure where people are accustomed to assemble.

Nonelector Detonator – A detonator that does not require the use of electric energy to function.

Particle Velocity – A measure of the intensity of ground vibration, specifically the velocity of motion of the ground particles as they are excited by the wave of energy.

Powder Factor – The amount of explosive used per unit of rock.

MAOP – Maximum Allowable Operating Pressure

Scaled Distance – A factor relating similar blast effects from various charges of explosive material at various distances.

Spacing – The distance between boreholes. In bench blasting, the distance is measured parallel to the free face and perpendicular to the burden.

Stemming - Inert material placed in a borehole on top of or between separate charges of explosive material. Used for the purpose of confining explosive materials or to separate charges of explosive material in the same borehole.

Subdrilling – The practice of drilling boreholes below floor level or working elevation to insure breakage of rock to working elevation.

For additional blasting terminology, refer to Blaster's Handbook, ISEE 17th Edition.

POLICY

Before any blasting is permitted, the blasting contractor will submit a blast plan to the Umpqua National Forest. No blasting will be permitted until the USFS and PCGP accept the blast plan. If an unsuitable blast is performed, the FS, in consultation with the Company representative, may require that a new blast plan be submitted for USFS/Company acceptance before drilling and blasting resumes.

The blasting contractor will be responsible for the blast plan and all blasting related activity shall be in compliance with all regulatory agencies.

The USFS, in consultation with the Company, will, at all times, have the authority to prohibit or halt the contractor's blasting operations if it is apparent that, through the methods being employed, the blasting specifications are not being employed, regulations are not being followed, or unsuitable blasting results are being obtained.

BLASTING CONTRACTOR DATA

1. Name, address, phone numbers
2. Contact person, phone numbers
3. BATF Permit
4. State &and local permit(s), if applicable
5. Insurance as required

BLAST PLAN

Acceptance of the blast plan by the USFS/Company does not relieve the contractor of his responsibility for the accuracy and adequacy of the plan when implemented in the field. The blast plan shall contain full details of the drilling and blasting patterns and controls that the contractor proposes to use.

The blast plan will be reviewed and signed by the blaster- in -charge to acknowledge his understanding and compliance with the plan.

The blast plan shall contain the following minimum information:

1. Resume, references & licenses of blaster-in-charge.
2. Anticipated number of holes to be drilled and shot per blast.
3. Scaled plan and section views of the proposed drill pattern including free face, burden, spacing, blast hole diameter, blast hole angles, cut depth and subdrill depth.
4. Scaled loading diagram showing the type and amount of explosives, primers, initiators and location and depth of stemming, including the material to be used as stemming. Maximum amount of explosives to be used per delay and per blast.
5. A diagram and explanation of the initiation sequence of blast holes including delay times for each blast hole. The type of delay system.
6. Manufacturer's product information sheets and material safety data sheets for all explosives, primers, delays and initiators to be used.
7. Sample of blast report to be used.
8. Vibration and airblast monitoring plan to include:
    a. Description of blast monitoring equipment and list if individuals that will operate such equipment
    b. Calibration records
9. Description of flyrock controls
10. Method of handling misfires or cut-offs
11. Complete description of the clearing and guarding procedures that will be used to ensure employees, company representatives, visitors and the general public are restricted to safe locations and accounted for during blasting. This description shall include, but not be limited to:
    a. Visible and audible warning signs and signals
    b. Access blocking methods
    c. Guard placement and release procedure
    d. Primary initiation procedure

e. System by which the blaster-in-charge will communicate with right of way security guards

15. Description of explosives storage to include:
    a. Approval of BATF, stage agency and local fire department (if applicable) and landowner
    b. Inventory control and documentation
    c. Control of explosives on the right of way to prevent theft
    d. Magazine location
16. Description of explosives and accessories transportation procedure.
17. Fire Prevention and Suppression Plan

BLAST REPORT

A record of each blast will be kept on file and submitted with the seismograph report to the company representative not later than the next workday after the blast, and before the next blast. The blast report shall contain at least the following minimum data as applicable:

1. Name of blasting contractor
2. Exact location of the blast, date and time of detonation
3. Type of material blasted
4. Number of holes, burden and spacing
5. Diameter and depth of holes
6. Types of explosives used
7. Total amount of each explosive used
8. Maximum amount of explosives and holes detonated within 8 milliseconds
9. Method of firing type and circuit
10. Direction, distance in feet and identification of the nearest facility, pipeline or inhabited building
11. Weather conditions
12. Type and height or length of stemming
13. A statement as to whether mats or protection against flyrock were used
14. Type of delay caps used and delay periods used
15. The person taking the seismograph reading shall accurately indicate exact location of the geophone placement and shall show the distance of the seismograph from the blast
16. Seismograph records
17. Sketch of blast pattern, including number of holes, burden and spacing distance, delay pattern, and if decking is used, a hole profile.

BLASTING OPERATIONS

1. All blasting operations, including the transport, storage, handling, and loading of explosives shall be performed under

the direct supervision of the blaster-in-charge and in accordance with all Federal, State, and local regulations. The blaster-in-charge must be authorized to act on behalf of the blasting contractor and be licensed by the applicable regulatory agencies to possess, transport and use explosives.

2. Blast holes shall be drilled on the patterns shown on the blast plan and shall not exceed 4" in diameter unless approved by the USFS/Company.
3. 70 pounds of explosives per 8 millesecond delay shall be the maximum charge weight allowed.
4. Hole plugs shall be placed in the blast holes as they are drilled to prevent overburden, drill cuttings or other foreign material from falling into the holes after drilling.
5. Cap and fuse initiation shall not be allowed.
6. A nonelectric, surface delay and in-hole detonator initiation system shall be used (Example: Handidet, EZ Det) for sequential initiation of charges. *One hole per delay shall be initiated.*
7. Clean, 3/8" minus angular crushed rock stemming material shall be used in all blastholes. Drill cuttings shall not be allowed for use as stemming.
8. Vibration and Airblast:
    a. All blasts shall be monitored. The geophone shall be placed on undisturbed ground on the side closest to the blast on the Pacific Connector Gas Pipeline. The geophone placement shall comply with standards discussed in Chapter 38: Vibration and Airblast, of the ISEE Blaster's Handbook, 17th Edition.
    b. Vibration limits for buried pipelines shall be 4 inches per second peak particle velocity.
    c. The Blaster shall be responsible for vibration and airblast monitoring. If the specified vibration and airblast limits are exceeded, the blast plan shall be revised and drilling and blasting operations will be terminated until acceptance of the revised blast plan is granted by the USFS in consultation with the Company.

Pacific Connector Gas Pipeline, LP

Communication Facilities Plan

Pacific Connector Gas Pipeline Project

September 2019

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1.0 INTRODUCTION

The purpose of this plan is to describe the construction, modification, operation and maintenance of communication facilities necessary for the operation of the Pacific Connector Gas Pipeline Project (Pipeline or Pipeline Project) proposed by Pacific Connector Gas Pipeline, LP (PCGP) on federal lands managed by the Bureau of Land Management (BLM) and the US Forest Service (USFS). The communication facilities are necessary to enable communications between facilities constructed in conjunction with the Pipeline Project and the PCGP gas control center. PCGP will utilize space on existing towers whenever possible. If, at the time of pipeline construction, existing building and/or tower space is not available or suitable, PCGP will construct new facilities (buildings/towers) at previously developed sites as described in this document.

2.0 PURPOSE

Each of the meter stations, automated block valves, and the compressor station included as part of the Pipeline Project will require a communications link with the PCGP gas control monitoring system. Therefore, radio antennas and towers will be required at each meter station, automated block valves, and the compressor station, and on existing mountain top radio communication sites as required to create a communication link with the gas control monitoring system.

PCGP proposes to install a microwave data system and a mobile radio system. The microwave system will be used to convey operational data to the gas control center. The mobile system will be used for private mobile radio communication during the construction and operational phases of the project. PCGP intends to use a microwave radio in the lower 6 GHz range for the primary microwave system and a Motorola iDen system operating in either the 700 MHz or 900 MHz range. PCGP will use licensed, as opposed to spread spectrum radios. As part of the FCC requirements for both communication systems, a frequency and interference study will be completed before any license is granted. This is done to protect those who utilize the radio spectrum in the area.

Antennas will be located at line of site locations roughly following the PCGP alignment to communicate with the gas control monitoring system. Each of these antennas will transmit and receive radio signals. Each radio site will require a tower with antennas and an equipment building. All communication facilities will be located within a perimeter fence. Attachment 1 illustrates the communications path proposed by PCGP.

PCGP has conducted initial communications studies and determined that in addition to the seven proposed towers that will be installed at the meter station, automated block valves, and compressor station, eight additional mountain top communication facilities will be needed for the Pipeline Project. Five of these sites are located on federal lands and will be described within this document (see Table 1). PCGP prefers to co-locate with existing tower facilities when possible, and will do so if leased space is available on existing tower facility sites at the time of construction. If leased space is not available or suitable, PCGP will apply to authorize and construct the necessary facilities in accordance with Communication Site Management Plans, as appropriate. If the construction of new towers is required, PCGP will seek to obtain an approximate 100 foot by 100 foot (0.23 acre) area for each of the new facility installations. The new tower and communications building will be enclosed within a 50 foot by 50 foot (0.06 acre) fenced area located within the larger 100 foot by 100 foot parcel. Attachment 2 shows a typical plot plan for a PCGP communications site.

3.0 FACILITY LOCATIONS

Each of the facility locations on federal lands comprising the proposed communication system required for the PCGP Project are described in the following sections. Table 1 summarizes facility names and locations and provides existing tower and desired antenna heights.

Table 1
Communication Tower Locations on Federal Land

Site Name	Location							Existing Tower Height (feet)	Tower Height [2] (feet)	Jurisdiction
	Latitude			Longitude			County			
Existing Communication Tower Sites (space to be leased or new tower installed)										
Blue Ridge	43	16	16	124	5	9	Coos	161	160	BLM [1]
Signal Tree (Kenyon Mtn.)	43	0	7.4	123	46	44.3	Coos	110	125	BLM [1]
Flounce Rock	42	43	40.4	122	36	33.1	Jackson	165	140	BLM [1]
Robinson Butte	42	21	51.4	122	22	54.1	Jackson	80	125	Forest Service [1]
Stukel Mountain	42	5	46.0	121	38	1.0	Klamath	120	100	BLM [1]

[1] New towers and equipment buildings may be necessary at these locations if lease space is unavailable at the time of construction.
[2] Proposed tower heights should new towers be necessary; tower heights would be as proposed or up to the heights allowed by the applicable Communication Site Plan.

3.1 Blue Ridge

Three towers are currently located at the BLM managed Blue Ridge site. One of the towers, owned by American Tower (site # OR 53667) has space available and is suitable for co-location. This tower is 161 feet in height and is of heavy construction with ladders on four faces (see Photo 1). PCGP has been in communication with American Tower who has indicated a willingness to discuss co-location. American Tower has indicated that some of the existing antennas may be removed, if required, to accommodate PCGP's required lease space. PCGP proposes to locate three additional antennas on the tower, one located at 105 feet and two at 145 feet. Tree height surrounding the tower site is approximately 90 to 100 feet.

The American Tower tower is located within a fenced area measuring approximately 97 feet in length and tapering from 70 feet to 53 feet in width. An equipment building is also currently located within the fenced area at this site. American Tower has indicated PCGP may potentially co-locate communications equipment within the existing building or construct a separate building within the existing fenced area. American Tower will not allow the construction of an additional tower within the fenced area. Access to this site is on existing paved and gravel roads which are listed in Table 2 in section 5.1.

It is the intention of PCGP to co-locate antennas on the existing American Tower tower and construct a separate equipment building within the existing fenced area. If space is no longer available at the time of construction, PCGP will seek to construct a new tower and communications equipment building within the Blue Ridge area zoned for communication facilities and administered by the BLM adjacent to the existing tower sites. Although co-location is preferred by PCGP, permits for the construction of a new facility will be filed as contingency. A preliminary site plan illustrating the location of a potential facility is included in Attachment 3. An elevation drawing showing antenna heights and configuration is included in Attachment 5.

Photo 1. American Tower Site at Blue Ridge

3.2 Signal Tree (Kenyon Mtn.)

The Signal Tree (Kenyon Mtn.) site is located on BLM land and is populated by a number of facilities with multiple operators. American Tower owns a 71 foot tower with four parabolic antennas (site #OR 42214) at this location. PCGP has discussed the possibility of co-location at this site with American Tower, who has expressed a willingness to work with PCGP. PCGP proposes to locate six antennas at this site, at heights up to 110 feet. American Tower has indicated the existing tower may be modified or replaced to meet the needs of PCGP. The American Tower site is depicted in Photo 2.

The American Tower site at Signal Tree (Kenyon Mtn.) is contained within a fenced area measuring approximately 93 feet in length and 55 feet in width. American Tower has indicated PCGP may co-locate equipment within the existing communications building or construct a separate building within the existing fenced area. Access to this site is indicated in Table 2.

It is the intent of PCGP to co-locate the necessary antennas on the existing tower managed by American Tower and construct a separate communications equipment building within the existing site. An elevation drawing showing antenna heights and configuration is included in Attachment 5. PCGP will permit new facility construction at this location. If at the time of construction, tower space is not available on the new American Tower or the existing American Tower facility may not be modified/replaced to meet necessary antenna heights, PCGP will seek to construct a new tower and communications equipment building within the Signal Tree (Kenyon Mtn.) area zoned for communication facilities and administered by the BLM adjacent to the existing tower sites. A preliminary site plan illustrating the location of the facility is included in Attachment 3.

Photo 2. American Tower Site at Signal Tree (Kenyon Mtn.)

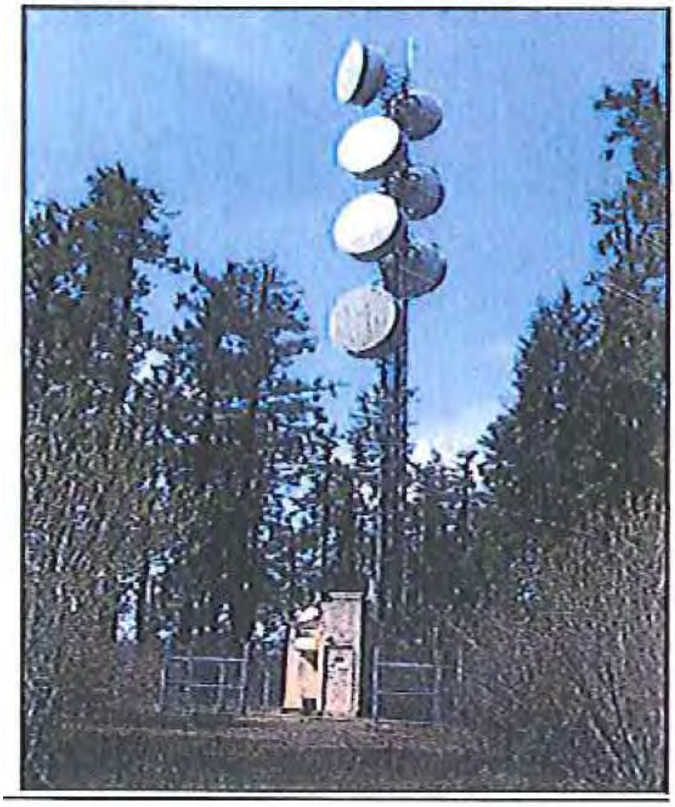
3.3 Flounce Rock

The Flounce Rock site is located on BLM land and is occupied by eight authorized users. Users at the Flounce Rock site include US Cellular, AT&T, PacifiCorp, the Army Corps of Engineers, Telava Wireless and several others. PCGP proposes to locate five parabolic antennas at this location, at potential heights of 30, 70, 110 and 135 feet. PCGP has investigated the possibility of co-location on two potentially suitable towers. One tower is owned by Telava and one tower is shared by US Cellular/AT&T. US Cellular/AT&T is not amenable to collocation and the tower is shorter than desired. The Telava tower is a 165 foot guyed tower and is more likely capable of supporting the additional proposed antenna load. Telava has expressed an interest in discussing co-location with PCGP, however the tower is currently occupied such that PCGP's antennas cannot be accommodated. Further analysis to determine if future use of the tower will allow co-location will be completed during the detailed design phase of the project. Photo 3 shows the Telava site.

Co-location of communication equipment within an existing building is not available at the Telava site. If PCGP is able to utilize the Telava site, PCGP proposes to construct a small building to house the necessary communications equipment. Access to this site is on gravel and dirt roads as indicated in Table 2.

If co-location is not an option, PCGP will construct a new communications facility on BLM land at the Flounce Rock location including a new 140 foot tower and communications equipment building. An elevation drawing showing antenna heights and configuration is included in Attachment 5. Space is presently available to construct a new facility. PCGP will request new construction as a contingency for the event that co-location is not a possibility. A preliminary site plan illustrating the location of a potential new facility is included in Attachment 3.

Photo 3. Telava Site at Flounce Rock



3.4 Robinson Butte

The Robinson Butte site is located on USFS land and is occupied by two towers. One tower is owned by the USFS and the other is owned by AT&T. The USFS tower is used by the USFS and US Cellular (see Photo 5). This tower is constructed of wood members and has an enclosed lookout at the top. This tower is not useable by PCGP. The AT&T tower is used by AT&T and the State of Oregon Department of Transportation (see Photo 4). This tower is 80 feet in height and is fitted with a platform and omni antennas,

PCGP has been in conversation with AT&T regarding potential collocation of equipment and antennas on AT&T's existing facilities. Following review of the facilities and the surrounding environment, it was determined the AT&T site is inadequate to accommodate the necessary PCGP communications equipment. The AT&T tower was deemed inadequate for the following reasons: The existing tree height in the immediate vicinity prohibits the use of this tower because the tower is only 80 feet in height and the surrounding trees are 80 – 100 feet tall. The implementation of "Space Diversity" is necessary at this site for proper antenna performance and requires a minimal vertical separation between antennas of approximately 30 feet. Therefore, the tower would have to be at least 125 feet tall to achieve any line-of-sight between adjacent antennas. Finally, the existing structure is not capable of supporting the increased wind load produced by the additional antennas.

Photo 4. AT&T Tower at Robinson Butte

Photo 5. USFS Tower at Robinson Butte

PCGP proposes to construct a new 125 foot tower supporting four antennas at heights of 85 and 125 feet and a separate communications building at the Robinson Butte site. Both AT&T and US Cellular have expressed interest in working with PCGP to develop a new shared facility. The new facility would include a communication building large enough to accommodate multiple parties and house the emergency power requirements of such a facility. An elevation drawing showing antenna heights and configuration is included in Attachment 5.

The current USFS site plan allows only an 80 foot tower. PCGP recognizes the height restriction and also recognizes that a variance must be applied for and will work with the Forest Service to achieve the best possible solution. PCGP plans on filing an application for a variance to the existing Site Management Plan.

PCGP will complete the Communication Site Plan checklist and USDA Forest Service Technical Data Communication Type Land Use application (included as Attachment 4) when requesting authorization to use the site.

The addition of the new facility would require the local power company to size the existing transformer serving the area. If the existing utility provider determined the size of the transformer was adequate there would be no modification to the existing system. However, if the transformer is inadequate, then modification to the transformer would be required. In either case, a new electrical conduit, ground well, and meter base would be installed in conjunction with the new facilities.

PCGP is aware of the use of the site for wildfire detection and will work with the Forest Service to avoid detrimental impacts to the viewshed. The preliminary location of the proposed tower is southwest of the existing FS lookout tower and would not obstruct the view shed of Mount McLaughlin or Brown Mountain. A site visit conducted with representatives of PCGP and the USFS concluded additional space is available at this location, and PCGP has begun discussing plans for a new facility with the USFS. A preliminary site plan illustrating the potential location of a facility is included in Attachment 3. Access to this location is on dirt roads listed in Table 2.

3.5 Stukel Mountain

The Stukel Mountain site is located on a narrow ridge occupied by numerous users. The tower owned by the California-Oregon Broadcasting Company is approximately 120 feet in height and appears to be potentially suitable for co-location. However, the beam path from this tower is obstructed by other facilities and is not useable by PCGP. No additional facilities at this site are suitable for co-location. PCGP will need to locate three antennas, two at a minimum height of 40 feet and one at 80 feet at this site. Access to this site is described in Table 2. The Stukel Mountain communications site is shown in Photo 6.

PCGP proposes to construct a new communications facility including a 100 foot tower and equipment building on BLM land adjacent to the existing towers. An elevation drawing showing antenna heights and configuration is included in Attachment 5. A suitable plot of land is available to the south of the California-Oregon Broadcasting Company tower. PCGP has contacted the BLM regarding this site. Although the BLM prefers co-location, they will accept an application for a new site. A preliminary site plan illustrating the location of a potential facility is included in Attachment 3.

Photo 6. California-Oregon Broadcasting Company Tower at Stukel Mountain

4.0 PERMIT PROCESS

4.1 Permit Schedule

PCGP will submit all required permit applications in advance such that permits will be available prior to the commencement of tower and communication building construction.

4.2 Site Plans

PCGP will work with the land managing agencies to ensure facility use and construction is compatible with the applicable Communications Site Management Plan. If necessary, PCGP will seek evaluation and amendment or variance if a proposed use is not compatible with an existing Site Management Plan. A Site Management Plan does not currently exist for the Stukel Mountain site.

4.3 Authorization

Communication facilities will be authorized following existing federal regulations. Authorization of communication towers owned by a third party and leased by PCGP will be managed by the tower owner. PCGP will negotiate use with the lease holder. New towers to be constructed and managed by PCGP will be permitted as an exclusive use under the ROW Grant. All new communications buildings will be permitted as ancillary facilities under the ROW Grant.

5.0 CONSTRUCTION CONSIDERATIONS

5.1 Design Criteria

All tower construction or modification will be permitted and completed in accordance with applicable industry and regulatory codes and standards, including building, electrical, Federal Communications Commission and Federal Aviation Authority permits as required.

All proposed facilities are located at existing developed communication sites and will be accessed using existing roads. Individual roads proposed for use during construction are listed in Table 2 below. Additional information including vehicle types and estimated trips are included in the Transportation Management Plan found in Appendix Y of the Plan of Development.

Table 2
Access Roads to Communication Sites

Location	Road Name	Road Use	Surface	Ingress/ Egress [5]
Blue Ridge	Blue Ridge System Road (BLM 26-12-35.5)	Access only	Gravel	All
	Blue Ridge System Road (BLM 26-12-35.1)	Access only	Gravel	All
	Blue Ridge System Road (BLM 26-12-35)	Access only	Gravel	All
	Blue Ridge Road (BLM 26-12-4.2)	Access only	Paved	All
SignalTree (Kenyon Mtn.)	Signal Tree Lookout (BLM 29-9-33.4)	Access only	Gravel	All
	Lower Signal Tree (BLM 29-9-36)	Access only	Paved	All
Flounce Rock	Flounce Rock (BLM 32-2E-34)	Access only	Gravel	All
Robinson Butte	FS Road 3730050	Access only	Gravel	All
Stukel Mountain	(BLM 40-10E-05, 40-10E-03 and 40-10E-10)	Access only	Gravel	All

5.2 Equipment

Retrofit of existing towers or installation of antennas on existing towers may involve the use of rubber tired cranes, light construction equipment and miscellaneous support and personnel vehicles.

Construction of new towers will require some earthwork and may involve the use of earth moving equipment, including bulldozers, trackhoes or backhoes, cranes, additional light construction equipment, support and personnel vehicles, and possibly helicopters.

All new building installations will require earthwork and light building construction. This will likely involve the use of bulldozers, trackhoes or backhoes and well as other light construction and support vehicles.

5.3 Schedule

Construction duration at each site is estimated to last approximately 12 weeks for the construction of a new tower and communications building and nine weeks if an existing tower is used but a new building is constructed. If an existing tower and building are used, activity may be completed within four weeks.

6.0 OPERATIONAL CONSIDERATIONS

Following construction completion, PCGP will access the communication sites only for routine maintenance or equipment modification. It is anticipated that this will occur a minimum of two times per year for inspections. In addition, sites may be accessed at any time in response to equipment failure or other emergency situations. All access will be on existing roads.

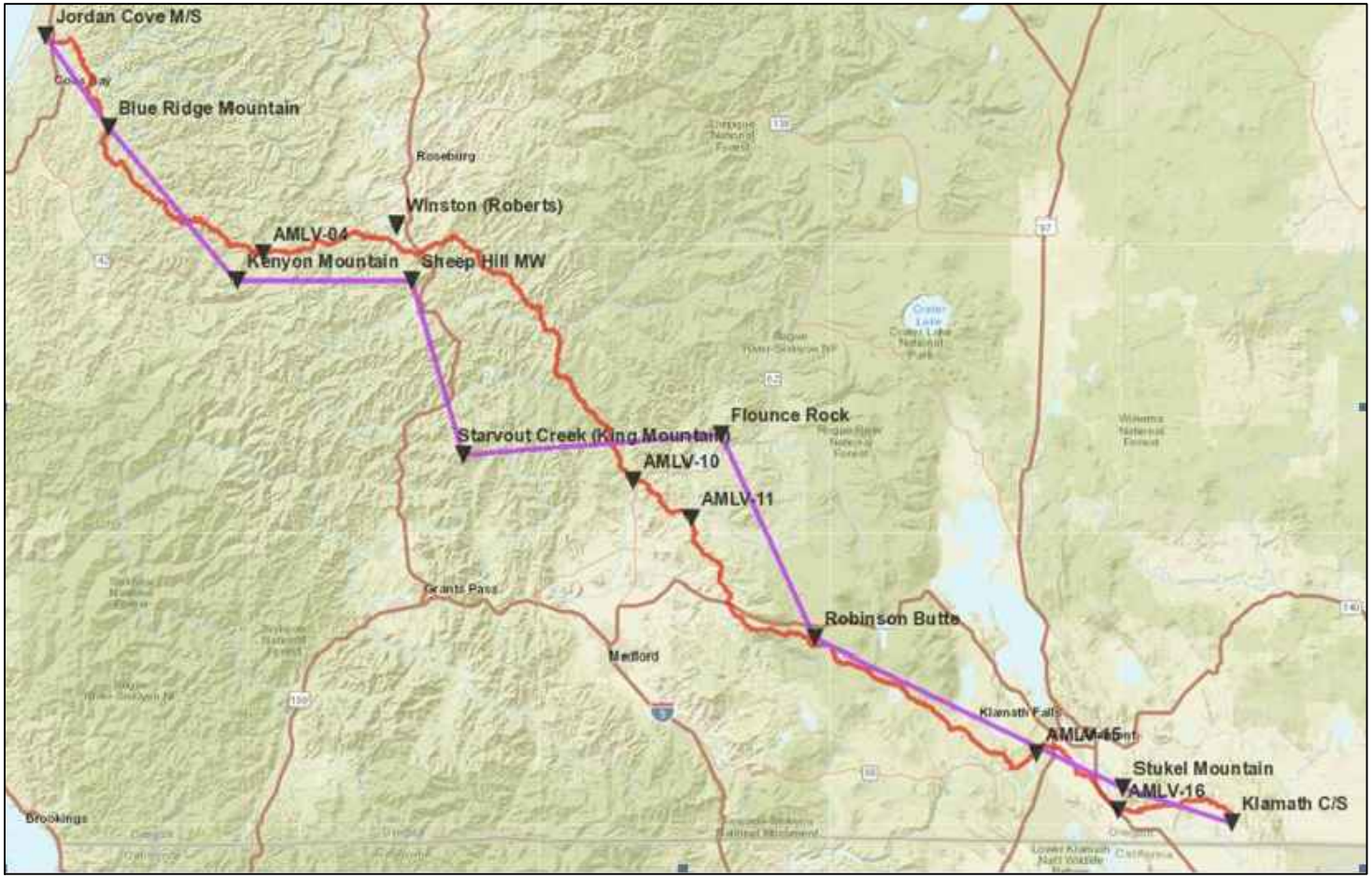
7.0 ENVIRONMENTAL CONSIDERATIONS

PCGP will complete all requisite species and cultural resource surveys prior to commencement of construction of the PCGP Project. PCGP will attempt to preserve trees and avoid felling, limbing, or topping trees whenever practicable. PCGP will also ensure the following Plans of Development are followed during modification and/or construction of the communication facilities:

- Air/Noise and Fugitive Dust Control Plan
- Erosion Control and Revegetation Plan
- Fire Prevention and Suppression Plan
- Integrated Pest Management Plan
- Leave Tree Protection Plan
- Right-of-Way Marking Plan
- Right-of-way Clearing Plan
- Safety and Security Plan
- Sanitation and Waste Disposal Management Plan
- Spill Prevention, Containment, and Countermeasures Plan
- Transportation Management Plan
- Unanticipated Discovery Plan

ATTACHMENT 1

PCGP Communications Path



COMMUNICATIONS TOWER
LINE OF SITE

LEGEND:
RED = PIPELINE ROUTE
PURPLE = LINE OF SITE BETWEEN TOWERS

EnSiteUSA
OFFICES:
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VERSAILLES, KY 859-873-0078
TULSA, OK 918-307-7600
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REFERENCE DRAWINGS		REVISIONS						
DRAWING NO.	TITLE	NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
*		*	*	MTC	ISSUE FOR REVIEW		CA	EM

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
COMMUNICATION TOWER
LINE OF SITE PLAN

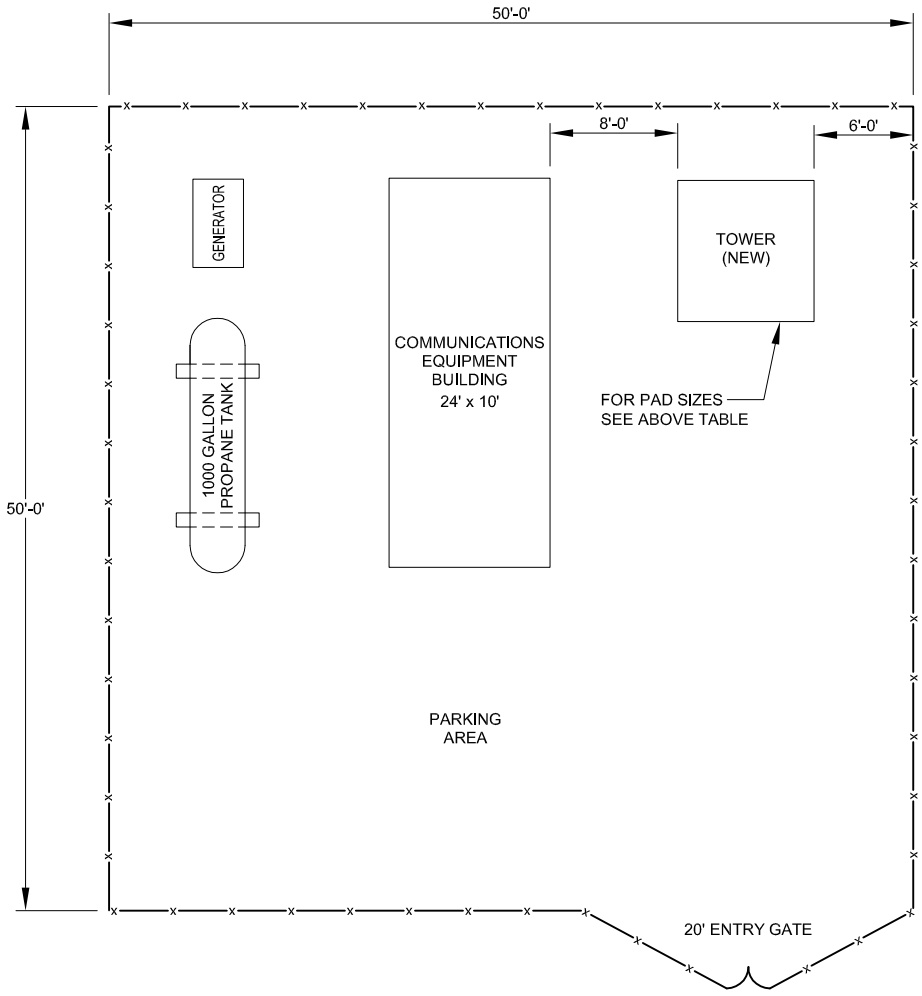
Pacific Connector GAS PIPELINE

DRAWN BY: AA	DATE: 05/11/18	ISSUED FOR BID:	SCALE: NONE
CHECKED BY: HO	DATE:	ISSUED FOR CONSTRUCTION:	
APPROVED BY: NPR	DATE:	DRAWING NUMBER: ATTACHMENT - 1	SHEET 1 OF 1

ATTACHMENT 2

Typical PCGP Communications Facility Plot Plan

ITEM	FACILITY TYPE & NAME	COUNTY	LANDOWNER	MX. TOWER HEIGHT (INCL. ANTENNA)	TOWER PAD DIMENSIONS	DESCRIPTION
1	ROBINSON BUTTE COMM. SITE	JACKSON	FOREST SERVICE	80 FT.	10'-0" x 10'-0"	SELF SUPPORTING NO GUY WIRES
2	BLUE RIDGE COMM. SITE	COOS	BLM	120 FT.	14'-0" x 14'-0"	SELF SUPPORTING NO GUY WIRES
3	(KENYON) SIGNAL TREE COMM. SITE	COOS	BLM	125 FT.	14'-0" x 14'-0"	SELF SUPPORTING NO GUY WIRES
4	FLOUNCE ROCK COMM. SITE	JACKSON	BLM	165 FT.	15'-6" x 15'-6"	SELF SUPPORTING NO GUY WIRES
5	STUKEL MTN. COMM. SITE	KLAMATH	BLM	180 FT.	17'-0" x 17'-0"	SELF SUPPORTING NO GUY WIRES



TYPICAL COMMUNICATIONS TOWER SITE PLAN

REFERENCE DRAWINGS		REVISIONS							
DRAWING NO.	TITLE	NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
		-	-	MTC	ISSUED FOR REVIEW		CA	EM
		-	09/17/19	PGD	REMOVED ABVA #4 DUE TO RELOCATION		DM	JW

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
COMMUNICATIONS TOWER
TYPICAL SITE PLAN

Pacific Connector GAS PIPELINE

DRAWN BY: AA	DATE: 05/11/18	ISSUED FOR BID:	SCALE: NONE
CHECKED BY: HO	DATE:	ISSUED FOR CONSTRUCTION:	
APPROVED BY: NPR	DATE:	DRAWING NUMBER: ATTACHMENT - 2	SHEET 1 OF 1

ATTACHMENT 3

Preliminary Location Maps for Potential New Tower Construction

DRAWING NO.	REFERENCE TITLE

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
36" PACIFIC CONNECTOR GAS PIPELINE
BLUE RIDGE COMMS TOWER
S-35, T-26-S, R-12-W
COOS COUNTY, OREGON

Pacific Connector GAS PIPELINE

NO.	DATE	BY	REVISION NUMBER	W.O. NO.	CHK.	APP.

DWG. BY: JCP	DATE: 4-26-2010	ISSUED FOR BID:	SCALE: AS NOTED
CHK BY:	DATE:	ISSUED FOR CONTS:	
APPR. BY:	DATE:	DRAWING NUMBER: Blue Ridge	SHEET 1
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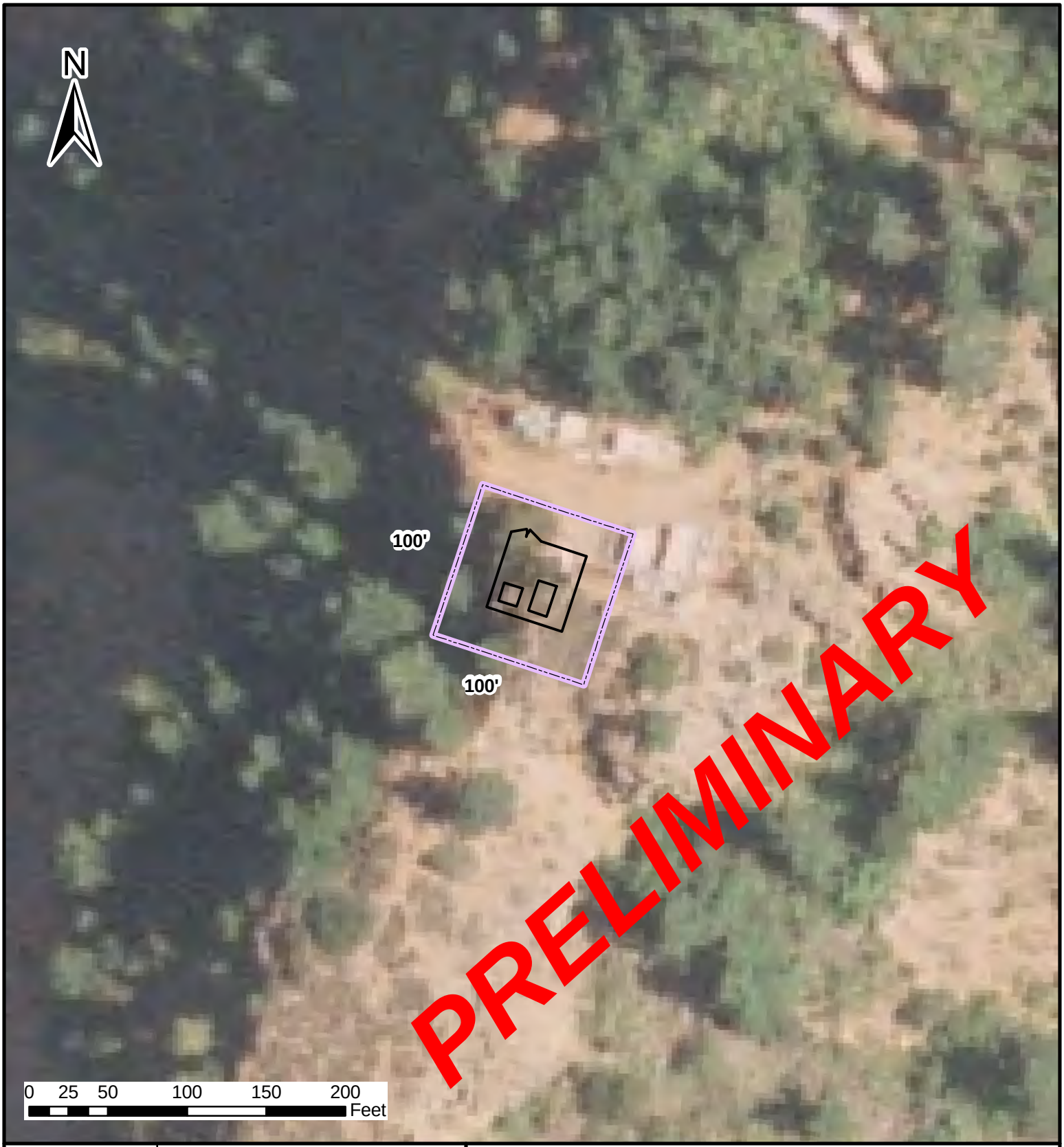


DRAWING NO.	REFERENCE TITLE

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
36" PACIFIC CONNECTOR GAS PIPELINE
FLOUNCE ROCK COMMS TOWER
S-05, T-33-S, R-02-E
JACKSON COUNTY, OREGON

Pacific Connector GAS PIPELINE

NO.	DATE	BY	REVISION NUMBER	W.O. NO.	CHK.	APP.

DWG. BY: JCP	DATE: 4-26-2010	ISSUED FOR BID:	SCALE: AS NOTED
CHK BY:	DATE:	ISSUED FOR CONTS:	
APPR. BY:	DATE:	DRAWING NUMBER: Flounce Rock	SHEET 1
		Q:\Oregon_gas\Mapping\Exhibits\Comms\Flounce Rock.mxd	OF 1

DRAWING NO.	REFERENCE TITLE

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
36" PACIFIC CONNECTOR GAS PIPELINE
KENYON MOUNTAIN COMMS TOWER
S-33, T-29-S, R-09-W
COOS COUNTY, OREGON

Pacific Connector GAS PIPELINE

NO.	DATE	BY	REVISION NUMBER	W.O. NO.	CHK.	APP.

DWG. BY: JCP	DATE: 4-26-2010	ISSUED FOR BID:	SCALE: AS NOTED
CHK BY:	DATE:	ISSUED FOR CONTS:	
APPR. BY:	DATE:	DRAWING NUMBER: Kenyon Mountain	SHEET 1
		Q:\Oregon_gas\Mapping\Exhibits\Comms\Kenyon Mountain.mxd	OF 1

DRAWING NO.	REFERENCE TITLE

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
36" PACIFIC CONNECTOR GAS PIPELINE
ROBINSON BUTTE COMMS TOWER
S-08, T-37-S, R-04-E
JACKSON COUNTY, OREGON

Pacific Connector GAS PIPELINE

NO.	DATE	BY	REVISION NUMBER	W.O. NO.	CHK.	APP.

DWG. BY: JCP	DATE: 4-26-2010	ISSUED FOR BID:	SCALE: AS NOTED
CHK BY:	DATE:	ISSUED FOR CONTS:	
APPR. BY:	DATE:	DRAWING NUMBER: Robinson Butte	SHEET 1
		Q:\Oregon_gas\Mapping\Exhibits\Comms\Robinson Butte.mxd	OF 1

DRAWING NO.	REFERENCE TITLE

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
36" PACIFIC CONNECTOR GAS PIPELINE
STUKEL MOUNTAIN COMMS TOWER
S-15, T-40-S, R-10-E
KLAMATH COUNTY, OREGON

Pacific Connector GAS PIPELINE

NO.	DATE	BY	REVISION NUMBER	W.O. NO.	CHK.	APP.

DWG. BY: JCP	DATE: 4-26-2010	ISSUED FOR BID:	SCALE: AS NOTED
CHK BY:	DATE:	ISSUED FOR CONTS:	
APPR. BY:	DATE:	DRAWING NUMBER: STUKEL MOUNTAIN	SHEET 1
		Q:\Oregon_gas\Mapping\Exhibits\Comms\Stukel Mountain.mxd	OF 1

ATTACHMENT 4

USFS Communications Site Plan Guide and Technical Data Communication Type Land Use Application

COMMUNICATION SITE PLAN OF DEVELOPMENT **HO#3**

1. Purpose and Need of the Facilities
    a. what will be built
    b. what is use
    c. what is size
    d. can it be housed within an existing site as a sublease
    e. can it be constructed to allow for future expansion and permit subleasing of the facility
    f. can it accommodate government agencies as sublessee
    g. is this ancillary to an existing right-of-way
    h. list alternative routes or locations

2. Right-of-way Location
    a. legal description of the facility
    b. maps
    c. drawings of typical tower installation, shelters, and guy wire configuration
    b. engineering design drawings and/or standards for roads, drainage, and power lines

3. Facility Design Factors
    a. design factors to be considered include wind loads, type and color of structures, wiring standards, suitability of soils and geology for placement of the facility
    b. technical data information
    c. list temporary use areas that are needed
    d. required associated rights-of-way, including access roads, power lines
    e. length, width, acreage of right-of-way
    f. compatibility with other users
    g. potential conflicts with other communication modes (i.e., mixing high power continuous with low power intermittent operations, obstructions between microwave towers, etc.)
    h. required associated rights-of-way including access roads, power lines, material sites

4. Additional Components
    a. list existing components on and off public land
    b. list possible future components on and off public land
    c. location of equipment storage areas

5. Government Agencies Involved
    a. Federal Communication Commission
    b. state and local agencies

6. Construction of the Facilities
    a. will a helicopter be required
        1) if so designate the flight routes on a map
    b. will temporary access be required
    c. will the site be fenced after construction
    d. construction (brief description)
        1) major facilities (including vehicles and number of tons and loads)
        2) ancillary facilities (including vehicles and number of tons and loads)
    e. work force (number of people and vehicles)
    f. flagging or staking the right-of-way
    e. clearing and grading
    f. facility construction data
        1) description of construction process
    g. access to and along right-of-way during construction
    h. contingency planning
        1) holder contacts
        2) BLM contacts
    i. safety requirements
    j. industrial wastes and toxic substances

7. Resource Values and Environmental Concerns
    a. address at level commensurate with anticipated impacts
        1) location with regard to designated corridors
    b. anticipated conflicts with resources or public health and safety
        1) air, noise, geologic hazards, mineral and energy resources, paleontological resources, soils, water, vegetation, wildlife, threatened and endangered species, cultural resources, visual resources, BLM projects, recreation activities, wilderness, etc.

8. Stabilization and Rehabilitation
    a. soil replacement and stabilization
    b. disposal of vegetation removed during construction (i.e., trees, shrubs, etc.)
    c. seeding specifications
    d. fertilizer
    e. limiting access to right-of-way

9. Operation and Maintenance
    a. will all-weather roads be required
    b. will operational access to the site require a helicopter
    a. safety
    b. industrial wastes and toxic substances
    c. inspection and maintenance schedules
    d. work schedules
    e. fire control
    f. long term access
    g. signs
    h. inspections
    i. contingency planning

10. Termination and Restoration
    a. removal of structures
    b. obliteration of roads, building sites, antenna sites
    c. stabilization and re-vegetation of disturbed areas

USDA Forest Service Technical Data Communication Type Land Use (Ref. FSM 2700)	INSTRUCTIONS: Applicant completes system items 1 to 16, and submit this form, license(s), along with an application to place communication equipment on National Forest System land. This form is authorized by Federal Land Policy and Management Act of 1976, P. L. 94-579 to evaluate the requested use and no authorization may be issued unless this form is completed.

1. Applicants's Name: _____
   Street Address: _____
   City State & Zip Ccde: _____
   Telephone Number: ( ) -

2. Location Applied For:
   Site Name: _____ Forest: _____ District: _____

3. Technical Data:

a. License number and call sign	
b. Date license issued	(mm/dd/yyyy)
c. FCC/NTIA eligibility	
d. Class of service (FCC/NTIA symbol)	
e. Type of emission (FCC/NTIA symbol)	
f. Transmit output power (watts)	
g. Transmit output (Effective Radiated Power)	
h. CTCSS control tone (Hz)	
i. Receive frequency crystal	
j. Receiver IF frequency 1	
frequency 2	
k. Receive frequency	
l. Transmit frequency crystal	
Multi 1	
Multi 2	
Multi 3	
Multi 4	
Output	

4. Control Method:
   Wireline ☐ Radio Link ☐ Local ☐
   Repeater ☐ Microwave ☐ Other ☐

5. Control Frequency _____

6. Antenna Type:
   Omnidirectional ☐ Directional ☐ Polarization ☐ Gain _____ dB
   Height to top of antenna from ground level _____ ft.; Dish Diameter _____ ft.
   Beam path with _____ deg.; Azimuth _____ deg.; Tilt _____ +/- deg.;
   Name of place beam goes to: _____ Beam path length _____ ft.

7. Tower Type: Pole – Guyed ☐ Self-Supporting ☐ Height _____ ft.
   Metal – Guyed ☐ Self-Supporting ☐ Height _____ ft.

8. Ground elevation above sea level at the base of the tower _____ ft.

9. Tower: Latitude: _____ Longitude _____

10. Chief Engineer or Service company: _____
    Street Address: _____
    City _____ State _____ Zip Code _____
    Phone Number ( ) - Emergency Number ( ) -

11. Will station have commercial power? Yes ☐ No ☐

12. Will station have standby power plant? Yes ☐ No ☐

13. Will station have commercial telephone? Yes ☐ No ☐

Area code and Phone number (_____) _____-_____

14. Attached *(check appropriate block(s))* :

☐ Current FCC License/NTIA Radio Frequency Authorization
☐ FCC License Application
☐ FCC Construction Permit with Land Owner (FS) sign-off

15. Additional Information:

NOTICE: Title 18, U.S.C. Section 1001, makes it a crime for any person to knowingly and willfully make any false, fictitious, or fraudulent statements or representations to matters under the jurisdiction of the United States Government.

16. Applicant's Signature: _____ Title: _____ Date: _____ (m/dd/yyyy)

Department of the Interior
Bureau of Land Management

BLUE RIDGE COMMUNICATIONS SITE MANAGEMENT PLAN

Prepared by the United States Bureau of Land Management
Coos Bay District Office
State of Oregon

Approved by: _____ _____
Field Manager **Date**

4/27/12

BLUE RIDGE COMMUNICATIONS SITE PLAN

I. INTRODUCTION

Demand for new communication sites continues to be active in the United States including carrier requests to locate cellular facilities on public lands in the western states. This demand is due to advances in communication technology, strong consumer interest, and a 1983 Federal Communication Commission (FCC) decree establishing wireless carrier coverage requirements.

Blue Ridge is an established communication site with characteristics desired by government agencies, wireless carriers, microwave relay, and other communication providers. The communication site is approximately 15 miles inland from the Pacific Ocean and four miles north of Fairview.

This Communication Site Management Plan has been developed to document and evaluate the existing communication site and facilities located on Blue Ridge. The plan also provides an outline for orderly future development of the site in conformance with the Coos Bay District Office's current land use planning document, the Coos Bay Resource Management Plan (RMP). When the current RMP is reviewed and revised, a clearly defined boundary of the communication site area will be delineated to facilitate efficient site operations and maintenance.

Current BLM program guidance for resource management planning specifies that every planning document shall contain determinations relevant to communication sites. The Coos Bay RMP, approved in 1995 addresses this land use under General Objectives Chapter 2-88 and on Map 2-11. Therefore, in order to supplement the land use planning document, this site management plan has been prepared to address specific issues encountered on Blue Ridge.

Approved lessees or right-of-way (ROW) holders with facilities currently located on Blue Ridge are shown in the Users' Table, Appendix B. Additional tenants or customers may be accommodated within the confines of existing authorized communication facilities as long as such additions are in compliance with the terms and conditions of authorized leases or ROW grants and with the supplemental direction contained in this site plan. Requests for new communication site facilities may be authorized at the discretion of the Bureau of Land Management (BLM) Authorized Officer through the issuance of new Communications Use Leases, or in some cases, by the issuance of additional ROW grants.

This site plan will be incorporated into all future new leases issued for the Blue Ridge Communication Site. This plan will also be included as a part of all existing leases and renewed leases or ROW grants as the terms of those authorizations allow. Provisions of the site plan are enforced through the terms and conditions of the ROW or lease authorization. Each lessee is expected to incorporate mandatory BLM lease and site plan requirements into any subsequent agreements with the lessee's tenants and customers. The lessee is also responsible for enforcement of said requirements involving the lessee's tenants and customers.

A. Terms and Definitions

The terms used in this communications site management plan conform to the definitions listed in the April 22, 2005, Federal Register notice "Rights-of-Way, Principles and Procedures: Rights-of-Way under the Federal Land Policy and Management Act and the Mineral Leasing Act", with further clarification provided in BLM Handbook 2860-1 and the United States Code of Federal Regulations (CFR) 43 CFR 2800. In the event of a conflict, between the plan and these sources, the Federal Register notice and the BLM Handbook will govern.

The words "lease" and "lessee" as used in this plan refer to the relationship between the BLM and the communications use lease lessee, or ROW holder. The words "customer" and "tenant" refer to the relationship between the lessee or holder and the occupants in the lessee's facilities.

LEASE OR ROW – A use authorization issued to a communication Facility Owner or Facility Manager allowing for the use of public land to construct and or operate a communications facility and, unless specifically prohibited, to sublease to occupants in that facility.

LESSEE, LEASE HOLDER, OR ROW HOLDER – A Facility Owner or Facility Manager

CUSTOMER – A facility occupant who is paying a facility manager, facility owner, or tenant for using all or any part of the space in the facility, or for communication services, and is not selling communication services or broadcasting to others.

TENANT – A facility occupant who is paying a facility manager, facility owner, or other entity for occupying and using all or part of a facility. A tenant operates communication equipment in the facility for profit by broadcasting to others or selling communication services.

COMMUNICATIONS SITE – An area of BLM-managed public land designated through the land and resource management planning process as being used or is suitable for communications uses. A communications site may be limited to a single communications facility, but most often encompasses more than one. Each site is identified by name; usually a local prominent landmark, such as Signal Tree Communications Site.

FACILITY – The building, tower, and related incidental structures or improvements authorized under the terms of the grant or lease.

FACILITY MANAGER – The holder of a BLM communications use authorization who leases space for other communication users. A facility manager does not own or operate communications equipment in the facility for personal or commercial purposes.

FACILITY OWNER – Individuals, commercial entities, organizations, or agencies, that own a communications facility on Federal land; own and operate their own communications equipment; and hold a communications use authorization. Facility owners may or may not lease space in the facility to other communications users.

NON-BROADCAST – This category includes Commercial Mobile Radio Service (CMRS), Facility Managers, Cellular Telephone, Private Mobile Radio Service (PMRS), Microwave, Local Exchange Network, and Passive Reflector.

BROADCAST – This category includes Television Broadcast, AM and FM Radio Broadcast, Cable Television, Broadcast Translator, Low Power Television, and Low Power FM Radio.

RIGHT-OF-WAY (ROW) – The public land authorized to be used or occupied pursuant to a ROW grant.

RIGHT-OF-WAY GRANT – A use authorization issued pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701 *et seq.*), or issued on or before October 21, 1976, pursuant to then existing statutory authority, authorizing the use of a ROW over, upon, under or through public land for construction, operation, maintenance and termination of a project.

HOLDER – Any applicant who has received a ROW grant, lease or temporary use permit.

USERS – All ROW and lease holders, lessees, customers, and tenants that own or operate a facility or communication equipment at the communication site.

SENIOR USE – Any use whose implementation date is prior to the implementation date of the use in question.

RANALLY METRO AREA (RMA) – A series of nine population zone areas, the highest of which is greater than 5 million and the lowest being 25,000 or less. These zones are determined annually and published in the Ranally Metro Area Population Ranking, an independent publication from Rand McNally, and are used in rent determination under guidelines established in 43 CFR 2806.

B. Purpose

This plan will be used by Bureau of Land Management officials, administering communications uses at Blue Ridge, existing lessees, holders, and applicants desiring a lease, grant, or an amendment to an existing lease or grant. The plan will be kept updated by amending pages or sections of the plan rather than issuing a revised edition of the plan. When an administrative revision is necessary (such as the addition of a user), a letter will be sent to the holders from the Coos Bay District Office enclosing a copy of revised pages or sections. The amendments will be consecutively numbered. Other proposed revisions to the plan will be circulated to holders for comment prior to implementation.

Overall management direction for the administration of communications sites is outlined in the U.S. Code of Federal Regulations (CFR's) and the BLM Handbook and applicable BLM Instructional Memoranda. Specific direction for site management planning on designated communications sites is contained in BLM Handbook 2860-1. Primary regulations and policy pertaining to issuance of ROW authorizations by the Bureau of Land Management are found in Title 43, Code of Federal Regulations (CFR), Sections 2801- 2808 and BLM Handbook 2860-1.

This Site Management Plan provides applicable guidance and adds current policy and technical standards for better management of the Blue Ridge Communication Site. This plan governs development and management of Blue Ridge and will be modified in the future as needs and conditions warrant. Any future such uses must be designed, installed, operated, and maintained

to be compatible and not interfere with the senior uses as defined in Section A above. This site-specific plan is administrative in nature and is Categorically Excluded from further review under the National Environmental Policy Act (NEPA) in accordance with 516.DM 2, Appendix 1, item 1.10, which states " – Policies, directives, regulations, and guidelines that are of an administrative, financial, legal, technical, or procedural in nature and whose environmental effects are too broad, speculative, or conjectural to lend themselves to meaningful analysis and will later be subject to the NEPA process, either collectively or case-by-case". Any additional development of Blue Ridge will be addressed in a site-specific NEPA document.

C. Site Description

The site is located on Blue Ridge east of Coos Bay, Oregon. The area is managed by the Umpqua Resource Area, Coos Bay District Office and the site is specifically located in portions of Section 35, T. 26 S.., R. 12 W., Willamette Meridian, Coos County, Oregon at approximately 43° 16' 14" North Latitude and 124° 05' 13" West Longitude. The elevation at the Blue Ridge Communications Site is approximately 1600 feet above mean sea level. A site map is provided as Appendix A.

D. Area Served

This site does not serve a Ranally Metro Area, RMA. The population zone served is less than 25,000 (Zone 9). This zone may be adjusted in the future as population change. This information will be used for rental fee determination.

E. Access

Access to Blue Ridge is from Highway 101 in Coos Bay toward Sumner on the Sumner-Fairview Road then east on local roads to the site. All of the access roads are either County or public roads on the BLM.

F. Site History and Development

The Blue Ridge Communication Site was established as a fire lookout in the early 1930's under authorization from the General Land Office. BLM later classified all such sites administered by the State of Oregon state-wide as lookout sites under the Public Works Act of September 3, 1954 (68 Stat 1146). When the state no longer needed Blue Ridge, the lookout was removed and it was later developed as a communication site.

The initial communications facility right-of-way authorization on Blue Ridge was issued for a microwave relay facility to Western Coast Telephone in 1960, which became GTE, then Verizon and is now Frontier Communication under ORORE 006061. The BLM also installed communication facilities, OROR 036189, at this site which upgraded into a newer building and tower. AT&T constructed the third facility for microwave relay. This facility is now managed by American Tower (OROR053667).

The demand for the site appears to be low and the existing facilities seem to be adequate for the foreseeable future.

A list of all authorized facilities as of the date of this plan can be found in Appendix B. Any modifications to existing facilities or proposals for new facilities must be approved by the Coos Bay District Office according to the appropriate NEPA process and guidance described in this document.

G. Goals and Objectives of Site Management Plan

1. Manage the Blue Ridge site for low-power uses including two-way radio, microwave, cellular, and internet service provider (ISP). All uses must be designed, operated and maintained so as not to physically or electronically interfere with the senior uses. The maximum power output expressed as effective radiated power (ERP) for the Blue Ridge Communications Site is based on the maximum output allowed for two-way radio under the FCC's rules at Title 47, Code of Federal Regulations, Part 90. As of the 2003 regulation, that is 500 watts ERP. Each use must operate at or below the power level authorized by their respective FCC license as long as it does not exceed the site limitation. This power limitation does not preclude existing and new uses from being designed, operated and maintained to meet other interference, noise floor, receive sensitivity, or radio frequency radiation (RFR) standards included in this plan. No continuously transmitting uses are authorized at this site, excluding microwave and radio control channels.

2. Manage communication equipment on the Blue Ridge Site to maintain the radio frequency (RF) hazard to be within the Public Standard as defined by the FCC.

3. Systematically develop the site to maximize the number of compatible uses while ensuring safety and protection of resources. Development of new towers or buildings within each of the authorized owner's facilities will be authorized only after their respective tower or building space area is filled to near capacity.

4. Help fulfill the public need for adequate communications sites.

5. Protect the interests of holders, lessees, tenants and customers, by preserving a safe and electronically "clean" environment.

6. Encourage the efficient development and use of space and facilities within the designated site, subject to the BLM's goal to provide the best possible public service at reasonable cost.

7. Achieve visual quality objectives by requiring design standards that are unobtrusive and utilizing earth tone colors and non-reflective surface material and stringent site maintenance requirements.

8. Describe the BLM's policy for authorizing road use and maintenance.

9. Develop new facilities only after the appropriate site-specific NEPA analysis and coordination with current lease or ROW holders and users.

10. Amend the Communications Site Plan as necessary to be consistent with future RMPs. BLM will provide authorization holders with proposed amendments to this plan and will allow a reasonable period of time for the holders to review and comment on the proposed changes.

11. Encourage a Communications Site Users Association for road access, maintenance, and fuel-break maintenance as well as on-site user coordination.

II. AUTHORITY AND DIRECTION

A. Authority

The authority used by BLM to authorize communications uses on public land (administered by the BLM) is the Federal Land Policy and Management Act of 1976, 90 Stat. 2776 (43 U.S. C. 1761-1771) and is reflected in Title 43, Code of Federal Regulations (CFR), Sections 2801- 2808 and various BLM Washington Office Information Bulletins and Instruction Memoranda.

BLM authority for communications site management planning is contained in Bureau of Land Management Handbook 2801-1, Plan of Development. Direction on and policy for, communication use authorizations is contained in Bureau of Land Management Manual (BLM Manual) section 2860.

Authority for the issuance of authorizations and/or licenses for the transmission and reception of electronic radiation for communication purposes is granted by Congress and administered by the Federal Communications Commission (FCC) and/or the National Telecommunication and Information Administration – Interagency Radio Advisory Committee (NTIA/IRAC).

B. Relationship to Communications Site Lease/ROW Grants

This site plan will be incorporated into all leases and grants issued (now and/or in the future) for this communications site and must be used in conjunction with the granting authorization. **PROVISIONS OF THE SITE PLAN ARE ENFORCED THROUGH THE GRANTING AUTHORIZATION (LEASE OR ROW GRANT).** Each lessee or holder is expected to include the requirements of the authorization and this site plan into any documents, which describe the business relationship between the lessee and their tenants or customers. The lessee or holder is responsible for enforcing those provisions.

III. GENERAL RESPONSIBILITIES

A. The Bureau of Land Management

The BLM retains the responsibility for issuing and amending authorizing instruments to Facility Owners and Facility Managers, only for the areas actually occupied by the authorized improvements. The issuance of a FCC license (authorization), or frequency assignment, does not authorize occupancy of public lands. Granting occupancy and use of public lands rests exclusively with the BLM. This includes:

1. Approving any new facility(ies) at the site.

2. Approving amendments to existing facilities (i.e. additions to tower, building, support facilities), and assignments of leases and ROW grants to qualified buyers of facilities on the site.

3. Approving any modifications to existing facilities including the tower, antenna, equipment or building. Also, approving any changes to the existing FCC licenses, prior to the submission of an application to the FCC.

4. Frequency Management. The BLM is not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

B. Facility Owners and Facility Managers

Facility owners and facility managers (or their designated representatives) are responsible for:

1. Complying with their use authorization and all provisions of this site plan.
2. Ensuring that all new facilities, expansions, or improvements are consistent with the Coos Bay District Office land use planning documents; any environmental document(s)/decisions for the site; and, this site plan.
3. Ensuring facilities/equipment not complying with Federal/State/local laws/regulations/ ordinances will be removed or modified within one year of the approval of this plan. Any modification needs pre-approval by the BLM.
4. Keeping all facilities within the established limits of their authorized area.
5. Providing the BLM, with the name, address and phone number for a local contact person. The Facility Owner and Facility Manager and the contact person may be the same individual. The contact person will be available for emergencies and will have the authority to make decisions about construction issues, facility maintenance and all equipment within the facility.
6. Providing 30-day notice to all facility owners/facility managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential interference. This notification requirement applies to new frequencies for facility owners/facility managers as well as their tenants and customers.
7. Adhering to the lease/ROW grant as follows:

    a. Facility Owners and Facility Managers with Communications Use Leases are authorized to rent building/tower space to tenants and/or customers without prior written approval from the BLM.

    b. Tenants and/or customers may not construct their own equipment shelter (building, shelter, generator pad, cabinet, etc.) or antenna support structure (tower or mast). The facility owner must own all communication shelters and towers under their lease or grant. [If that is not possible, a separate SF-299 application, cost-recovery fees, analysis, and authorization are required. This will result in the use being a tenant/customer of the

original lease/ROW in addition to being a separate facility for billing purposes. See 43 CFR 2806.37]

c. Tenants and/or customers using a facility covered by a Facility Lease/ROW will not have separate BLM leases/ROWs to authorize their use except in situations where regulations or policy require them

d. Facility Owners and Facility Managers are responsible for complying with the terms and conditions of the facility lease/ROW. Facility Owner/Managers are also responsible for ensuring that their tenants and customers are in compliance with the terms and conditions of the lease/ROW, and applicable FCC or NTIA/IRAC license terms and conditions.

e. The Facility Owner and Facility Manager may not place any unreasonable restrictions nor any restriction restraining competition or trade practices on tenants and/or customers, or potential tenants and/or customers.

8. Ensuring that all new communications facilities and equipment are installed, operated, and maintained according to the Motorola R-56 Standards and Guidelines for Communication Sites. Repairs and modifications to existing facilities/equipment must also meet Motorola R-56 Standards. These standards may be waived by the BLM authorized officer when recommended by a site user association or similar technical committee upon request of a facility owner/manager when equivalent measures would achieve similar results.

9. Ensuring that all communication equipment meets ANSI, FCC and BLM regulations, guidelines and standards concerning radiation limitations by:

   a. Monitoring radiation levels at their facility and;

   b. Immediately correcting any radiation levels that are, or could be a hazard to human health. (FCC 47CFR sections 1.1307(b), 1.1310 and 2.1093) and FCC OET Bulletin 65, August 1997.

10. Providing the BLM with a certified copy of all uses and the correct category of uses within the facility, along with the current phone numbers and addresses of all tenants and customers as of September 30th each year. This report is due by October 15th each year.

11. Keeping the premises around their buildings free of trash and debris.

12. Placing the lease/ROW serial number on the door of their communications site building, or on a gate if a fenced compound.

13. Correcting interference problems. The users are normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

C. FCC and NTIA/IRAC

The FCC and NTIA/IRAC are responsible for Frequency Management. The FCC and NTIA/IRAC are not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the authorizations.

IV. AUTHORIZED USES AND USERS WITHIN A FACILITY

Use by Multiple Users

Use of all facilities and improvements by more than one user will be required except where the facility owner is a government agency. Site applicants will take the lead in this area and design their proposals to accommodate multiple uses of facilities and improvements. This includes multiple uses of buildings, towers, back-up generators, grounding systems, fuel containers, access ways and parking areas.

BLM will not authorize new ROWs, ROW expansion, or modification until it is determined that existing authorized space and facilities are being used to capacity. Development or expansion of a ROW solely to preclude potential competitors from locating nearby is unacceptable and will not be authorized by the BLM.

Facility Owners and Facility Managers are not required to lease facility space to others if they can prove to the BLM authorized officer that:

1. Space is not available;
2. The use is incompatible with the existing facilities;
3. Additional space is needed by the facility owner/manager;
4. Additional users would violate system security needs; or,
5. Potential interference is not resolvable.

V. FEES

The BLM will charge Facility Owners and Facility Managers annual rental fees pursuant to federal regulations contained in 43 CFR 2806. The fees are based on two factors- the type of communications use, and the population served by the use. These fees are considered fair market value for the use of public land. The population Zone 9 (less than 25,000) will be used for these calculations unless something else is specifically agreed to in writing by the authorizing officer or until populations change.

Fees that Facility Owners and Facility Managers may charge their tenants and customers are to be reasonable (consistent with, and not in excess of, other fees for similar facilities) and commensurate with the uses and occupancy of the facilities and services provided to tenants and customers.

VI. GENERAL OPERATION AND MAINTENANCE DIRECTION

A. Unique Resource Considerations at this Communication Site

There are no currently identified special resource coordination considerations with on-site or adjacent resource values. Should special conditions arise through the revision process of the land use plan or other situations, this site plan will be amended accordingly. Special habitat may occur on adjacent parcels, but no site specific restrictions have been applied to uses at this site.

B. Wiring and Grounding

1. All equipment is to be installed within existing buildings and in metal equipment racks or within metal equipment cabinets and in accordance with manufacturers' specifications. All equipment, racks, cabinets and overhead ladder trays are to be grounded and shielded in compliance with National Electrical Code (NEC) and in accordance with accepted industry standards.

2. All electrical wiring and grounding must meet the NEC and applicable State/local codes. All permanent wiring shall be installed in metallic conduit. Surge protection shall be installed between the electric service meter and the first power distribution panel.

3. Lightning protection shall be in accordance with NEC part 810-20 Antenna Discharge Units and Part 810-21 Grounding Conductors. Periodic bonding of the antenna feed lines to the tower (when galvanized steel) shall be made with proper bonding connectors that are stainless steel (preferred), Copperweld, tin plated, or made of brass.

4. Each building is to have its own separate grounding system for all users in that structure. Wherever practical, interconnection of individual grids and/or the simultaneous placement of a large sized copper ground wire with any new grounding systems that are buried on the site will be required.

5. Site or facility grounding must be constructed of copper with #2 AWG or larger wire, Copperweld, or 2" or larger solid copper strap, connected to an adequate site/facility ground electrode system. The site/facility ground electrode system shall be bonded to the power service entrance grounding electrode conductor. Guy wires should also be grounded using manufacturers approved methods to preclude bi-metallic junction and corrosion. All equipment on the site (buildings, towers, power units, transmitters, receivers, antennas, combiners, telephone systems, power cabinets, HVAC units, etc) must be connected to the site/facility ground by direct connection. Electrical system ground wiring is required for electrical ground fault protection and circuit breaker coordination. The grounding systems shall comply with applicable laws, codes and in

accordance with standard engineering practice. Below ground connections must use either an exothermic welding process (i.e., Cadweld, Thermoweld, etc.), copper wedge pressure devices (i.e., Ampact, Burndy, Wrench-lock, etc.), or brazed copper connections in conjunction with a mechanical UL listed connector (to be used as a physical strength enhancement component). Brazing by itself is not an acceptable method of bonding below earth grade (buried).

C. Communications Equipment

Equipment Ownership

All equipment shall be labeled (or the information available at the site, as applicable) with:

1. The owner's name;
2. Transmitter frequency(ies);
3. A valid FCC, or IRAC, authorization;
4. Transmitting power output(s); and
5. A current 24-hour phone contact number.

Transmitting Equipment

All transmitters will have protective devices (shields, filters, isolation components), designed into or externally installed, to prevent interference with other users. All transmitters will meet FCC licensing requirements. Two-way transmitters should have dual section isolators for a total of 60 db of isolation.

The re-radiation of intercepted signals from any unprotected transmitter and its associated antenna system will be prevented by the use of appropriate filters (wide band and narrow band broadcast transmitters).

Direct radiation of out-of-bound emissions (i.e., noise or spurious harmonics) will be reduced to a level such that they may not be identified as a source of interference as defined in the FCC Rules and Regulations (e.g., Part 90.209(e) for the non-broadcast uses, and Parts 73 and 74 for broadcast uses). If site noise (electromagnetic noise) becomes an issue, noise threshold limits will be established, and amended into the site plan, prior to authorizing any new uses.

Direct radiation of out-of-bound emissions, (i.e., transmitter wide band noise, spurious emissions, harmonics, etc.) shall be reduced to a noninterference level by using bandpass, lowpass, and/or harmonic filtering. Where duplexing is used, use of a notch type device should be avoided.

Re-radiation of signals from a transmitter and its associated antenna system shall be prevented by installing appropriate devices (i.e., ferrite isolators), with minimum return loss of 25 db.

All transmitters not in immediate use and not specifically designated as standby equipment shall be removed. Loads connected to circulators are to be capable of dissipating the total power output of the transmitter.

Receiving Equipment

All receivers shall comply with all applicable parts of the FCC rules, including Parts 2 and 15.

All receivers shall have sufficient "front end" pre-selection to prevent receiver spurious response. The use of bandpass, band-reject cavity or crystal filters may be required to prevent receiver-produced intermodulation or adjacent-channel interference.

Where duplexing is used, a bandpass cavity duplexer is required. Use of the notch-type device is not permitted. Where notch-type devices are currently in place and there is no interference problems, their use may continue until the equipment is replaced, at which time they must be replaced with bandpass devices.

Tower

Generally only one tower is authorized for each facility owner. Facility Owners and Facility Managers may obtain permission to construct the second tower only after submitting evidence that demonstrates that their existing tower is completely filled and full use has been made of combining systems.

1. All towers will be left unpainted, if they are dull, galvanized steel. Paint is required only if the tower has a shiny (i.e., reflective) surface. If paint is required, the BLM will determine what non-reflective color the tower shall be painted.

2. Maximum tower height (including antennas) for this site is 120 feet.

3. Anti-climb devices, removable steps, or other means to discourage unauthorized climbing, are highly recommended to reduce or avoid liability claims.

4. All new towers will be self-supporting. No guy lines are permitted.

5. To avoid possible impacts to birds or bats, follow the most current version of the U.S. Fish & Wildlife Service's Interim Guidelines on the Siting, Construct, Operation and Decommissioning of Communication Towers, available at the following website: *http://www.fws.gov/habitatconservation/com_tow_guidelines.pdf*

Antennas

1. Microwave (dish) antennas (other than ground mounted satellite dishes) will be limited to a maximum of eight (8) feet in diameter. The smallest diameter dishes are preferred if technically feasible.

2. Dishes should be mounted as low as possible to reduce visual impacts.

3. All antennas must meet all OSHA safety standards. If an antenna exceeds FCC public radiation standards (see FCC OET Bulletin 65) at ground level in publicly accessible areas, it will be remedied within 24 hours after measures are taken or isolated (e.g., fencing, signing, relocation, lowering power levels are all possible remedies). Ground measurements of RFR levels will be taken before mitigation measures are implemented.

4. Color(s) for dish antennas, or covers, must be pre-approved by the BLM. New white dish antennas and/or covers will not be approved. Existing white dishes and covers must be repainted or replaced with dishes of approved color (typically dark gray), as repairs or replacement become necessary.

5. Antennas will be purchased with or treated to have a non-reflectance surface.

Interference

The responsibility for correcting interference problems is a matter for resolution between the lease/ROW holder of the facility(ies), the user causing the interference, and the affected party(ies). First users on a site have seniority with respect to the resolution of interference complaints. Senior holders have an obligation to maintain their equipment to industry standards, to operate their systems in accordance with the terms of both the FCC license and NTIA/IRAC frequency authorization, and to comply with the BLM authorization.

New users on a site must correct, at their expense, interference problems that they create. They may be required to furnish an intermodulation study, electromagnetic noise study, or other interference-related data and must agree to accept financial responsibility for elimination or prevention of any interference caused by the facility before their application can be evaluated. They must cease operation of the suspect equipment until the problem is corrected. If interference problems cannot be resolved or corrected within a reasonable time, the new use that is causing the interference may be terminated and the equipment removed.

All users shall cooperate with the Site Users Association, if one is formed, and the BLM in identification and correction of any interference. The BLM does not have authority for correcting interference problems, but can act as a mediator to help all affected parties. Interference problems must be coordinated with the FCC or NTIA/IRAC whichever is appropriate.

Interference with law enforcement and/or emergency communications must be corrected immediately. The operation of equipment covered by this site plan shall not interfere with United States Government radio or electronic operations already in existence on public land within two (2) miles of this site. The user causing this interference, shall, at its own expense, take all action necessary to prevent or eliminate such interferences. If it does not eliminate such interference within ten (10) days after receipt of notice from the BLM to do so, this use will be terminated.

If electromagnetic noise becomes an issue, noise thresholds will be established and this site plan will be amended accordingly.

D. Cables and Transmission Line (Wave Guides)

All new cabling will be jacketed and shielded and shall either be flexible or semi-rigid type. Existing substandard cables will be upgraded as repairs or replacement become necessary.

Cables will be properly installed and will be strapped and fastened down. Use of ports at building entrance points will be kept to a minimum by use of combiners.

When attaching cables onto a tower, conduits should be used. Coax and wave guides should be installed in a wave guide ladder or equally divided among all tower legs.

All transmission lines (wave guides) are to be supported in accordance with manufacturer's specifications.

Unjacketed transmission line of any type is prohibited. No transmission line shall be left unterminated.

Double shielded braided, or solid shielded cable will be used. No RG-8 type cable is permitted. No connector-type adapters will be used on transmission lines. Only correct connectors that will mate to connected devices are to be used.

Conduits will be shared when they service common areas and will be buried where possible.

E. Radiation

All communications uses must meet ANSI, FCC and BLM regulations, guidelines and standards concerning radiation limitations. This site is considered uncontrolled for the purposes of compliance with RFR standards.

Monitoring radiation levels at the site is the responsibility of all site users and will occur at intervals to comply with FCC regulations and guidelines. A copy of the monitoring report will be provided to the BLM upon request. The FCC is responsible for enforcement of the monitoring and standardization for compliance. The FCC could revoke the license and/or issue a fine for failure to comply. Additionally, the BLM could terminate or suspend the use authorization for failure to comply.

Onsite RFR measurements will be taken using appropriate equipment that can adequately measure and record both on-tower and on the ground levels before mitigation measures related to RFR are implemented pursuant to FCC standards and requirements.

Security fences with RFR notice signs are required around areas that exceed public use levels including anchor points outside the primary facility compound fence, if necessary. Raising higher power transmitting antenna on the tower or modifying the antenna type to half wavelength may be necessary to eliminate RFR hazards. Reducing power may also be required if other alternatives are not feasible. All fencing location and design or new tower construction must be pre-approved by the BLM.

Warning signs will comply with ANSI C95.2 color, symbol, and content conventions. Contact information including name and telephone number will also be included on warning signs. Existing warning signs compliant with FCC 47 CFR 1.1307(b) which do not currently include name and telephone number will be accepted as long as the name and telephone number is clearly posted on other signage at the Lessee's site.

Lowering power levels for on-tower access during maintenance will be coordinated between affected users.

Any identified RFR radiation problems that are, or could be, a human health hazard must be corrected within 24 hours after measurement tests have been completed or be removed from the site by the site user(s). If the proposed corrective action involves any new ground disturbance, it must be pre-approved by the BLM.

F. Utilities-Availability of and Requirements for:

Commercial Electrical Power

Commercial power is provided to the site under separate ROW grant to PacifiCorp.

Telephone Service

There is no commercial telephone provided to the site.

If additional service is ever deemed necessary, a separate ROW grant will be issued. Site users will pay for the cost of:

1. The necessary resource surveys and reports for service connections; and

2. The cost of constructing service connections.

For visual reasons, overhead utility poles may not be authorized.

Fuel Tanks

Facility Owners and Facility Managers are responsible for providing fuel storage (propane and diesel) and emergency power for their tenants and customers. No tenants or customers will be authorized to have separate fuel tanks and/or generators. Each facility owner will preferably consolidate fuel storage into a tank large enough in size to accommodate all tenants and customers within their facility. At a minimum, tanks will be grouped together in a consolidated area adjacent to their facilities. All fuel storage tanks (e.g., LPG, propane and diesel) must meet current fire department, Federal, State and local government safety and hazardous materials requirements. Propane is the preferred fuel for future generators.

1. All tanks will be:

    a. Signed in red letters, "SMOKING OR OPEN FLAME PROHIBITED WITHIN 20 FEET";

b. In conformance with National Fire Protection Association (NFPA) requirements; and,

c. Painted an approved color, or screened by an enclosure to blend in with the natural environment. If an enclosure is used, it must be pre-approved and painted an approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

2. Diesel tanks will also be:

a. Enclosed in BLM and fire department approved secondary containment vaults that are painted a BLM-approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

b. Constructed with underground fuel lines. Fuel line must be constructed of black, treated pipe and fittings, and must be posted.

c. A containment basin must be maintained below all diesel tanks which are not designed and approved to be self contained.

G. Sanitary Facilities

1. Plans for any sanitary facilities must be pre-approved by the BLM. If it is determined by the BLM that the users need such facilities, they will be provided by the lease/ROW holder in a manner and location satisfactory to the BLM and within the requirements of the County Health Department.

H. Security and Law Enforcement

The County Sheriff's Department is the key law enforcement agency for the area. They are responsible for most civil and criminal matters. The BLM will be responsible for enforcing matters related to uses of BLM lands (e.g. resource protection issues).

Patrolling and policing for security purposes is the user's responsibility.

Gates and key access must be approved in advance by the BLM and must be adequate for BLM and Coos Fire Protection Association (CFPA) access needs.

All future facilities must be fenced to prevent public access to towers and facilities. Future fencing must meet the following criteria:

1. All fences must meet health and safety requirements.

2. All fence locations and design require BLM pre-approval. The standard fencing type will be chain-link (i.e. cyclone).

3. The standard fence height will be eight (8) feet.

4. Fencing will be designed, installed, maintained, grounded, and of a type to minimize interference issues as described in the Motorola R-56 standards.

5. Fences will be signed with RFR notices if RFR is above public levels.

I. Site Maintenance

The objective of maintenance activities is to present a clean, neat, and orderly appearance at the site and have all of the authorized improvements safe for workers and the public. All users will keep up the overall appearance of the site.

Miscellaneous debris remaining after any construction and/or equipment installation, removal or modification, is not only a hazard, but can cause interference or intermodulation problems. In particular, all loose wire or metal objects are to be removed from the site.

The users of the Site will remove all graffiti within 10 working days of finding it, weather permitting. If graffiti is on natural features (e.g. rocks), the graffiti will be removed in a method approved by the BLM Authorized Officer.

Users will not be permitted to leave or dispose of trash, garbage or cut brush on public lands. No outside trash or litter containers will be provided. Site users will remove litter from the site as it is produced.

Policing of litter in common areas (i.e. areas between buildings and developed sites) is the shared responsibility of those holders bordering these areas.

During construction and/or maintenance, paintbrushes will not be cleaned off on the rocks around the site and excess materials (e.g., cement, wire, metal, building materials) will be removed from public land.

Peeling paint on buildings and/or towers will be re-painted within thirty (30) days of discovery by the facility owner or facility manager and within 10 days of notification of the holder by the BLM, weather permitting. The Lessee is responsible for the abatement and control of noxious weeds within the bounds of their lease site and common use areas. Abatement practices are to be implemented in accordance with the Coos Bay District Office weed abatement programs. The Lessee shall control noxious weeds, as listed by Oregon Department of Agriculture, within the right-of-way. Manual control of noxious weeds using hands or hand tools may be conducted without further review. Proposed mechanical, biological and chemical control activities must be reviewed by Bureau of Land Management specialists for compliance with applicable laws and policies. Contact the authorized officer at least 30 days prior to proposed work. The Lessee shall prevent the spread of noxious weeds from the right-of-way.

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 described in BLM policy and relevant NEPA documents. Additionally, a BLM-approved Pesticide Use Proposal is necessary prior to pesticide application and all pesticide application will be done by a licensed pesticide applicator. When planning the use of pesticides, the Lessee shall submit a Pesticide Use Proposal or - a plan showing the pest(s) to be controlled as well as the proposed type and quantity of material to be used, method of application, and any other information deemed necessary by the authorized officer. All use of pesticides shall be approved in writing by the authorized officer prior to such use.

J. Inspections

Enforcement authority is vested in the BLM as the Communications Site Administrator for Blue Ridge via 43 CFR 2800. The BLM may conduct an annual inspection of each user's facility. This inspection will verify:

1. Compliance with technical standards.
2. Structural integrity.
3. As-built plan accuracy.
4. Electromagnetic compatibility.
5. General site health, safety, and cleanliness.

The BLM shall provide written notice of the scheduled inspection date at least 30 days in advance. Each primary shall arrange to have personnel available at the site at the time of the inspection.

Any non-compliance found by a user shall be forwarded to the BLM. The BLM will conduct an inspection and a written copy of the inspection report shall be forwarded to the violating user within 30 working days following the inspection. The report shall include:

1. A description of the violation.
2. Corrective action required.
3. Name, address, and organization of the responsible party.
4. Time allowed for completion of corrective measures.
5. Anticipation action in the event of noncompliance with remedial instructions.

K. Fire Prevention and Hazard Reduction Requirements

Facility owners and facility managers will be required to control vegetation within the fenced area around their facilities. Gravel or mineral soil (i.e., bare ground) or mowed vegetation must be maintained to a minimum of ten (10) feet clearance around buildings; and a minimum of ten (10) feet clearance around any propane tanks. Identified threatened, endangered, or sensitive plant species must remain within the minimum clearance areas.

Smoking is prohibited in flammable vegetation areas.

Roof structures shall be kept reasonably clear of debris at all times.

No explosives will be stored at this site. Flammable materials shall be stored in conformance with the requirements of local fire regulations. Flammables will be placed in closed containers

and stored away from sources of ignition and combustible materials. If flammables are stored within a building, the building will be locked, properly signed and well ventilated.

Approved spark arresters will be required and maintained on all internal combustion engines.

At least one (1) U.L. rated 20 lb. A:B:C dry chemical fire extinguisher is required inside each building. Prior to each June, fire extinguisher(s) shall be inspected by holders and refilled, if necessary.

Any fire will be immediately reported to "911", the nearest BLM office and/or Coos County Sheriff.

BLM Officers will make periodic fire prevention inspections. They will call to the holder's attention any lack of compliance with the above regulations, plus any other existing hazards. Compliance with these inspections is required within the time limits specified in the inspection report.

All fire protection standards must be accomplished by the beginning of fire season unless otherwise agreed to, and then maintained throughout the fire season.

For new construction, the BLM will provide the Holder with a separate Construction Fire Plan which will be prepared at that time as applicable.

L. Access Maintenance and Restrictions

Roads

The roads are primarily paved to within 1 mile of the site and then it is well maintained gravel by the County and BLM. If a user association is formed on Blue Ridge, the costs of road maintenance may be assessed by the association and enforced through this management plan. Individual users who damage or disturb the access road, or any associated structures, such as ditches, culverts, roadside vegetation, signs and/or underground utilities or facilities, will be required to repair the road and/or associated structures, to conditions equal to or superior to those prior to any damage or disturbance. This work must be done according to applicable BLM road maintenance standards and may require the appropriate NEPA analysis.

Interior Site Driveways/ Parking Areas

Interior site driveways within the communications site will be maintained by the site users. Interior roads will be planned and approved during establishment of new facilities. Interior roads will be maintained in a manner to allow only one entrance to the site. Off-road vehicle use in and around the site will be avoided.

Road Closures

Roads on public land are subject to periodic closures to entry during periods of extreme fire danger, inclement weather, or wet conditions. Authorized site users may use the site during these periods but should use judgment and may need to seek advance approval from the BLM.

VII. CONDITIONS FOR CONSTRUCTION, MODIFICATIONS OR EXPANSION

A. Facility Owner/Manager Responsibilities

In addition to the responsibilities listed in Section III, new applicants and existing Facility Owners/Managers proposing new, modified, or expanded facilities are responsible for:

1. Submitting a complete application to the Coos Bay District Office (ATTN: "Realty Specialist") prior to any new construction, or modifications to existing improvements, unless new electronic equipment is being installed in/on an existing tower and/or an existing building. The application must include:

   a. The appropriate cost recovery and application fees as determined by the BLM;

   b. A copy of the approved Site Plan Base Map showing all of the proposed (new) facilities including structures, towers, and auxiliary equipment;

   c. Completed drawings/plans prepared by a registered engineer and Plan of Development approved by the BLM;

   d. Identification of any microwave beam paths, a plot of their azimuth(s), and their proposed elevation(s) on the tower;

   e. Documentation that shows that proposed facilities will not be obstructing, or interfering with any existing fixed point to point antennas, omni directional broadcast antennas, or microwave beam paths in the directions of primary population targets. Proposed beam path needs must be shown on Site Plan Base Map; and,

   f. Any needed recommendations, changes or modifications to their original proposal, based on any required resource surveys and/or reports.

2. Demonstrating that their proposals will not cause undue interference with any existing uses before the BLM can approve new facilities. In addition, it is the applicant's responsibility to show that any new facilities will make the most efficient use of the limited amount of space at the site.

3. Showing their proposals will provide for future users without additional construction.

4. Providing engineering and geotechnical investigations for development of specific foundation designs and grading plans.

5. Providing for erosion control as part of the Plan of Development prior to construction activities. At a minimum, erosion control must include: sediment control, stipulations that cut/fill slopes will be graded and contoured to prevent erosion and/or excessive runoff, and recommendations for temporary erosion control measures, (e.g., netting, silt fences, swales, and/or sediment collection areas).

6. Coordinating with other Federal (e.g., FCC and FAA), State and County agencies and obtaining all required approvals and/or permits.

7. Providing 30-day notice to all facility owners/managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential interference. This would be for new frequencies for themselves and their tenants and customers.

8. Insuring that all written approvals have been obtained from the BLM prior to construction. In addition:

   a. Directional antennas will only be protected within the arch between their licensed 3 dB points.

   b. New and/or modified facilities will not obstruct existing fixed point-to-point antennas or omni-directional broadcast antennas in directions of primary population targets.

B. <u>Construction Methods and Resource Protection</u>

Plans submitted by an applicant for any new construction or modifications shall specify provisions for soil rehabilitation measures including, but not limited to, soil replacement and stabilization and for proper handling of runoff from buildings, parking area, access roads, and undeveloped common areas.

The following methods and resource protection measures will be required to minimize impacts during construction:

1. Avoid and protect sensitive resource areas, as identified by the BLM.

2. Compliance with the Plan of Development and the Erosion Control Plan.

3. During construction and/or maintenance, no paint or paint thinner will be disposed of on site.

4. Minimize ground disturbance and vegetation removal as much as possible during construction activities. All ground-disturbing activities require BLM pre-approval.

5. Disturbed areas will be re-vegetated with species pre-approved by BLM as soon as possible after construction. If necessary, reseeding will be required until vegetation is successfully established as determined by the BLM.

6. No grading material will be cast off during construction/reconstruction activities. Excess soil can be used for fill material on road and/or building/tower pads.

7. Temporary, on-site storage of construction materials will require pre-approval by the BLM.

8. Construction materials and supplies, except for hazardous materials (see number 9. below) may be left unattended at the construction site at the end of each workday, but at the owner's risk.

9. Hazardous materials, including, but not limited to all fuels, oils, and lubricants are not to be left unattended at the site at any time. During construction, these materials are to be removed from the site at the end of each workday, or temporarily stored inside a locked and signed building until the following workday.

10. All surplus construction materials and/or waste debris must be removed from the site no later than thirty (30) days after construction has been completed.

11. Any earth moving or heavy equipment (e.g. dozers, graders, cranes, backhoes, etc.) leaving the designated roadway and/or approved parking area(s) to perform authorized activities at the site, will be washed off prior to being brought onto public lands to prevent the introduction and spread of noxious weeds into the area.

C. Construction Inspection

1. All new construction, reconstruction, or major modification shall conform to the established technical standards and accepted engineering practices (i.e., the Uniform Building Code).

2. Any construction inspections required by other applicable agencies are the responsibility of the lessee/holder. Copies of completed inspections are to be provided to the Coos Bay District Office, Authorized Officer, either as they occur or as part of the final as-built plan. Inspection information shall become a permanent part of the holder's lease/ROW case file.

3. The Lessee/Holder agrees that corrective work detailed in BLM, or other agency required compliance inspections, would be completed by the scheduled completion date. If the Lessee/Holder disagrees or has questions about specific items, the Lessee/Holder must contact the BLM in order that the disagreement or item may be resolved.

4. A final set of as-built plans will be submitted to the Coos Bay District Officer, Authorized Officer, within 90 days of acceptance of structure (if contracted) or of completion date.

D. New or Remodeled/Expanded Buildings

1. Any new buildings must be designed to accommodate multiple users along with fitting into the physical environment as defined in a site-specific environmental analysis developed at the time of the proposal. All new facilities must meet R-56 standards.

2. Buildings are required to be one-story. The roof must be metal or covered with metal to be fire resistant. Roofs can be equipped with antenna support structures, such as poles and railings that can extend up to 25-feet above ground level.

3. Facility Owners and Facility Managers are encouraged to construct the interior of their buildings in a modular fashion, so that they can:

a. Sublease sections to others;

b. Provide tenants and customers with internal separation and security;

c. Reduce physical interference; and

d. Increase management effectiveness.

4. The following materials are approved for construction of new facilities (i.e. buildings)

   a. Floors – Concrete slab with drainage.

   b. Walls – Concrete block, metal or pre-fabricated concrete.

   c. Roof – Metal, or concrete, if painted to eliminate shiny surfaces, or other fireproof material as approved by the BLM. Proposals for wooden roofs will not be approved.

   d. Partitions – If it is felt partitions are necessary in buildings, ensure they are constructed with fire resistant material (e.g., concrete block, reinforced concrete, or properly grounded fencing.

   e. Color – Proposed color for use on all exterior building surfaces must be pre-approved by the BLM. The goal of the color selection for the facilities is to make the building as inconspicuous as possible and make buildings located on the skyline look inconspicuous when viewed from a distance. The intent is to reduce or eliminate glare from reflective and/or illuminated surfaces such as windowpanes, sheeting and reflective paints. Non-reflective, BLM approved colors will be used on equipment buildings.

5. Building entry lights must:

   a. Only light the immediate area in the vicinity of the door;

   b. Be motion activated and have a limited time duration (e.g., 3-5 minutes); and

   c. Have a shielded beam that is pointed at the building door.

   Requests for all-night (i.e. "dusk-to-dawn") lighting, or entry lighting that would be visible from outside of the site will not be approved. FAA-required lighting would be the only exception.

E. <u>New or Remodeled/Expanded Towers</u>

1. All new construction, reconstruction, and modifications to towers will be pre-approved by the BLM prior to implementation.

2. It is the applicant/holder's responsibility to assure that a new, or modified, structure will not unduly interfere electronically or physically with any existing equipment at the site. Towers must be spaced, so as to prevent ground level radiation and/or interference problems. This

must be clearly demonstrated in writing to the BLM prior to issuance of a lease/ROW or amendment.

3. All new towers will comply with current structural and safety specifications and design standards, including safety-climbing devices. Towers should be as narrow and "open" as safety and structural integrity allow. New towers will be designed using maximum wind, snow, and/or tower loading anticipated for the site.

VIII. SITE ASSOCIATION/ADVISORY GROUP

A Site Users' Association is probably not needed at this time. In the future if the number of users and/or the number of facilities increases, a Users Association may be desirable to coordinate common needs.

The objective of a sanctioned association will be to represent all site users as a group when dealing with the Coos Bay BLM Field Office on matters relating to the site administration. The association will be able to work in cooperation with the BLM to identify problems or opportunities and make recommendations to the BLM for any changes in management strategies at the site. The association could also provide input to the BLM regarding the future addition of equipment and facilities at the site. While the advice and recommendations of the association would not be binding on the BLM, the BLM could use the input for administration of the site. The BLM would be a member of such a group and would help jointly develop the charter (i.e., the ground rules).

IX. APPENDICIES

A. Location and Site Maps

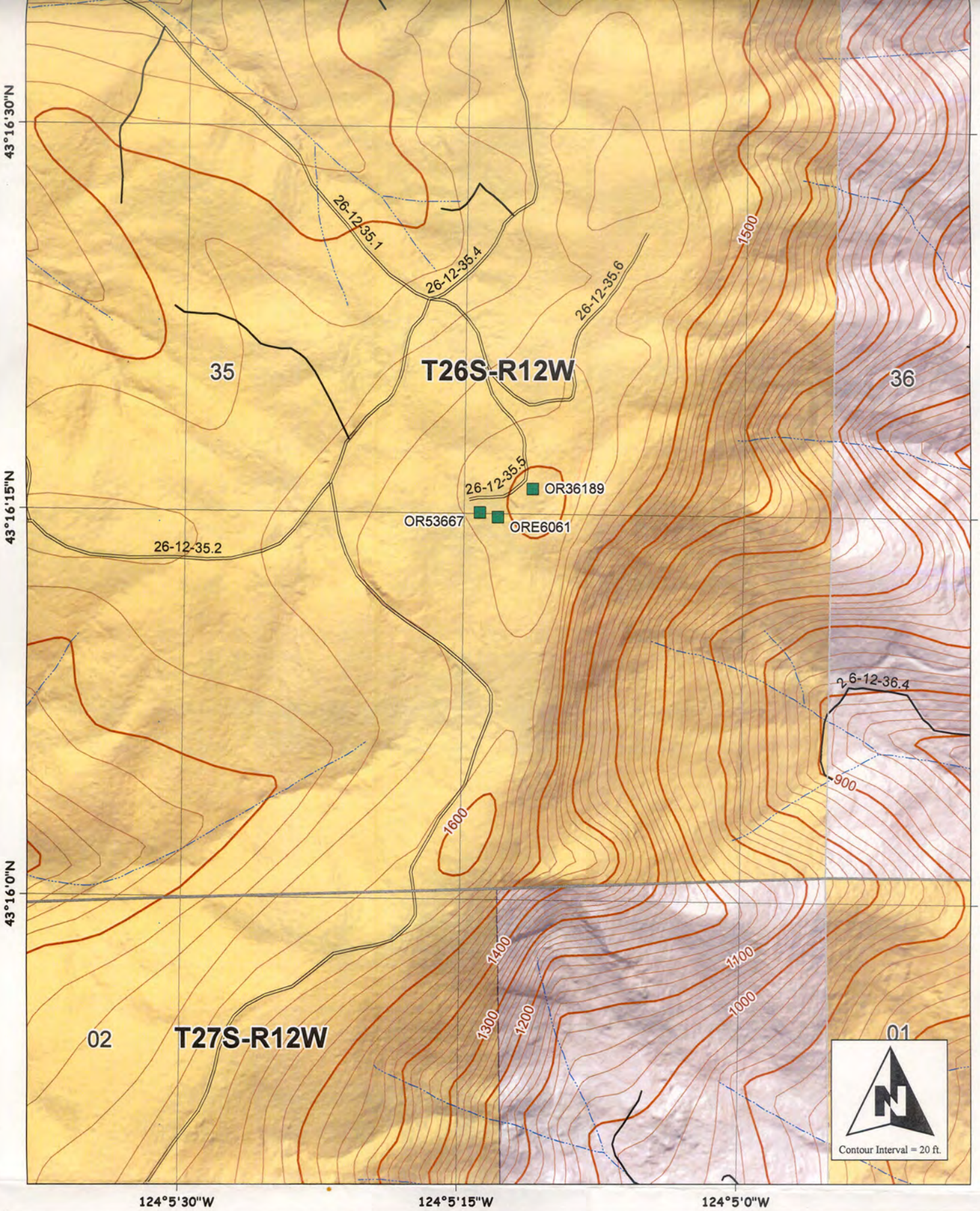
B. Authorized Facilities

C. Site Photographs

D. Inspection Checklist

APPENDIX A

SITE MAP



Map Features

(Not all map features shown in the legend will be present in the area mapped above.)

- Blue Ridge Comm Sites
- Highway
- County Road
- Paved Road
- Gravel Road
- Natural/Unk Surface Road
- Perennial Stream
- Intermittent Stream
- BLM Administered Land
- Bureau of Indian Affairs
- U.S. Forest Service
- Other Federal Lands
- Private or Other Lands

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Coos Bay District Office
Umpqua Resource Area
1300 Airport Lane
North Bend, OR 97459

0 500 1,000
Feet

Appendix A: Blue Ridge Communication Site

APPENDIX B

AUTHORIZED FACILITIES

	Auth #	Use	Building	Tower	Access/Parking	Other
Facility # 1 Coos Bay BLM	**ORORO 036189**	**PMRS**	**8'x10' concrete**	**100' guyed**	**Access and parking**	
Facility #2 American Tower	**ORORO 053667**	**MIC**	**20'x20' concrete**	**100' 4-legged metal**	**Access and parking**	**Horns & portable generator in parking lot**
Facility #3 Frontier Communication	**ORORE 006061**	**MIC**	**25' x 15' metal**	**100' guyed**	**Access and parking**	**500 gallon diesel vault**

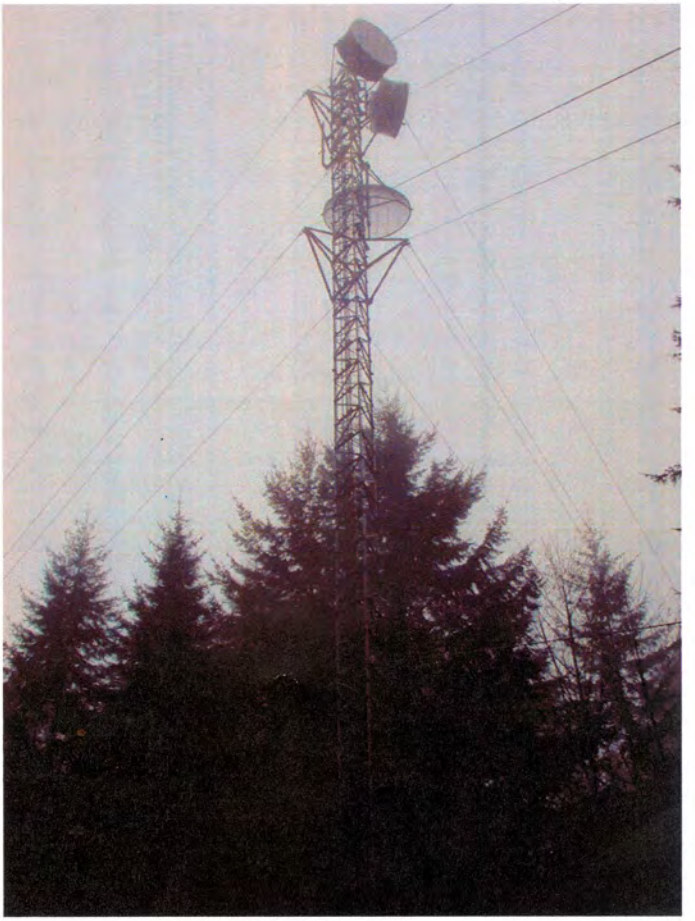
APPENDIX C

SITE PHOTOGRAPHS

Blue Ridge
Facility 1 – Bureau of Land Management
OR036189

Blue Ridge
Facility 2 – American Tower
OR053667

Blue Ridge
Facility 3 – Frontier Communications
ORORE006061



APPENDIX D

INSPECTION CHECKLIST

"Blue Ridge Annual Technical Inspection"

Date Inspected: _____ Time Inspection: _____

Permit Holder: _____ Authorization # _____

Site Technician : _____ Phone # _____

Number of Transmitters _____ License Posted _____

Please mark the following Items as Acceptable (A) or Unacceptable (U).

Electrical Wiring ---------- (A) (U) Grounding ---------- (A) (U)

Equipment Installation ---------- (A) (U) Housekeeping ---------- (A) (U)

Building Repair ---------- (A) (U) Tower Repair ---------- (A) (U)

Please mark the following Items as Yes (Y) or NO (N) or (NA)

Isolators ---------- (Y) (N) (NA) Circulators ---------- (Y) (N) (NA)

Cavities ---------- (Y) (N) (NA) Terminators ---------- (Y) (N) (NA)

Filters ---------- (Y) (N) (NA) Lightning Protection ---------- (Y) (N) (NA)

Comments: _____

_____

Recommended Corrective Action: _____

_____

_____

Required Corrective Action To Be Taken: _____

_____

_____

_____

Committee Representatives: _____

Bureau of Land Management Representatives: _____

Please make the required corrective action within the next 120 days. Please make a written report of corrective action taken and submit to the BLM in Coos Bay. If you should have any questions, please call the BLM office.

Department of the Interior
Bureau of Land Management

FLOUNCE ROCK COMMUNICATIONS SITE MANAGEMENT PLAN

Prepared by the Bureau of Land Management
Butte Falls Resource Area
Medford District, Oregon

Approved by: **Jon K. Raby** **11/17/2009**
Field Manager **Date**

FLOUNCE ROCK COMMUNICATIONS SITE MANAGEMENT PLAN

I. INTRODUCTION

Demand for new communication sites continues to be active in the United States including carrier requests to locate cellular facilities on public lands in the western states. This demand is due to advances in communication technology, strong consumer interest, and a 1983 Federal Communication Commission (FCC) decree establishing wireless carrier coverage requirements.

Flounce Rock is a communication site administered by the BLM Butte Falls Resource Area. It is an established site with characteristics desired by wireless carriers, microwave users, and other communication providers. The communication site overlooks smaller communities such as Prospect and Trail, and also a rural but growing population area to the south and to some extent the more distant city of Medford. Highway 62 runs in a generally west/east direction along the Rogue River approximately two miles south of Flounce Rock. A number of other secondary roads also run through the surrounding area.

This Communication Site Management Plan has been developed to document and evaluate the existing communication site and facilities located on Flounce Rock. The plan also provides an outline for orderly future development of the site in conformance with the Butte Falls Resource Area's current land use planning document, the Medford District Record of Decision and Resource Management Plan (RMP).

Current BLM program guidance for resource management planning specifies that every planning document shall contain determinations relevant to communication sites. The Medford District RMP, approved in June of 1995, does not discuss specific details needed for proper management of the communication site. Therefore, in order to supplement the land use planning document, this site management plan has been prepared to address specific issues encountered on Flounce Rock.

Approved lessees or right-of-way (ROW) holders with facilities currently located on Flounce Rock are shown in the Users' Table, Appendix B. Additional tenants or customers may be accommodated within the confines of existing authorized communication facilities as long as such additions are in compliance with the terms and conditions of authorized leases or ROW grants and with the supplemental direction contained in this site plan. Requests for new communication site facilities may be authorized at the discretion of the Bureau of Land Management (BLM) Authorized Officer through the issuance of new Communications Use Leases, or in some cases, by the issuance of additional ROW grants.

This site plan will be incorporated into all future new leases issued for the Flounce Rock Communication Site. This plan will also be included as a part of all existing leases and renewed leases or ROW grants as the terms of those authorizations allow. Provisions of the site plan are enforced through the terms and conditions of the ROW or lease authorization. Each lessee is expected to incorporate mandatory BLM lease and site plan requirements into any subsequent agreements with the lessee's tenants and customers. The lessee is also responsible for enforcement of said requirements involving the lessee's tenants and customers.

A. Terms and Definitions

The terms used in this communications site management plan conform to the definitions listed in the April 22, 2005, Federal Register notice "Rights-of-Way, Principles and Procedures: Rights-of-Way under the Federal Land Policy and Management Act and the Mineral Leasing Act", with further clarification provided in BLM Handbook 2860-1 and the United States Code of Federal Regulations (CFR) 43 CFR 2800. In the event of a conflict, between the plan and these sources, the Federal Register notice and the BLM Handbook will govern.

The words "lease" and "lessee" as used in this plan refer to the relationship between the BLM and the communications use lease lessee, or ROW holder. The words "customer" and "tenant" refer to the relationship between the lessee or holder and the occupants in the lessee's facilities.

LEASE OR ROW – A use authorization issued to a communication Facility Owner or Facility Manager allowing for the use of public land to construct and or operate a communications facility and, unless specifically prohibited, to sublease to occupants in that facility.

LESSEE, LEASE HOLDER, OR ROW HOLDER – A Facility Owner or Facility Manager

CUSTOMER – A facility occupant who is paying a facility manager, facility owner, or tenant for using all or any part of the space in the facility, or for communication services, and is not selling communication services or broadcasting to others.

TENANT – A facility occupant who is paying a facility manager, facility owner, or other entity for occupying and using all or part of a facility. A tenant operates communication equipment in the facility for profit by broadcasting to others or selling communication services.

COMMUNICATIONS SITE – An area of BLM-managed public land designated through the land and resource management planning process as being used or is suitable for communications uses. A communications site may be limited to a single communications facility, but most often encompasses more than one. Each site is identified by name; usually a local prominent landmark, such as Flounce Rock Communications Site.

FACILITY – The building, tower, and related incidental structures or improvements authorized under the terms of the grant or lease.

FACILITY MANAGER – The holder of a BLM communications use authorization who leases space for other communication users. A facility manager does not own or operate communications equipment in the facility for personal or commercial purposes.

FACILITY OWNER – Individuals, commercial entities, organizations, or agencies, that own a communications facility on Federal land; own and operate their own communications equipment; and hold a communications use authorization. Facility owners may or may not lease space in the facility to other communications users.

NON-BROADCAST – This category includes Commercial Mobile Radio Service (CMRS), Facility Managers, Cellular Telephone, Private Mobile Radio Service (PMRS), Microwave, Local Exchange Network, and Passive Reflector.

BROADCAST – This category includes Television Broadcast, AM and FM Radio Broadcast, Cable Television, Broadcast Translator, Low Power Television, and Low Power FM Radio.

RIGHT-OF-WAY (ROW) – The public land authorized to be used or occupied pursuant to a ROW grant.

RIGHT-OF-WAY GRANT – A use authorization issued pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701 *et seq.*), or issued on or before October 21, 1976, pursuant to then existing statutory authority, authorizing the use of a ROW over, upon, under or through public land for construction, operation, maintenance and termination of a project.

HOLDER – Any applicant who has received a ROW grant, lease or temporary use permit.

USERS – All ROW and lease holders, lessees, customers, and tenants that own or operate a facility or communication equipment at the communication site.

SENIOR USE – Any use whose implementation date is prior to the implementation date of the use in question.

RANALLY METRO AREA (RMA) – A series of nine population zone areas, the highest of which is greater than 5 million and the lowest being 25,000 or less. These zones are determined annually and published in the Ranally Metro Area Population Ranking, an independent publication from Rand McNally, and are used in rent determination under guidelines established in 43 CFR 2806.

B. Purpose

This plan will be used by BLM officials administering communications uses at Flounce Rock, existing lessees, holders, and applicants desiring a lease, grant, or an amendment to an existing lease or ROW grant. The plan will be kept updated by amending pages or sections of the plan rather than issuing a revised edition of the plan. When an administrative revision is necessary (such as the addition of a user), a letter will be sent to the holders from the Butte Falls Resource Area enclosing a copy of revised pages or sections. The amendments will be consecutively numbered. Other proposed revisions to the plan will be circulated to holders for comment prior to implementation.

Overall management direction for the administration of communications sites is outlined in the CFR and the BLM Handbook and applicable BLM Instructional Memoranda. Specific direction for site management planning on designated communications sites is contained in BLM Handbook 2860-1. Primary regulations and policy pertaining to issuance of ROW authorizations by the BLM are found in Title 43 CFR Sections 2801- 2808 and BLM Handbook 2860-1.

The 1995 Medford District RMP, as amended, states public lands will continue to be available for communications sites and will be located adjacent to existing facilities to the extent technically and economically feasible. It also states "allow expansion of communications facilities on existing communication sites consistent with protection of threatened and endangered species". It goes on to state "consider new communication sites on a case-by-case basis".

This Site Management Plan provides applicable guidance and adds current policy and technical standards for better management of the Flounce Rock Communications Site. This plan governs development and management of Flounce Rock and will be modified in the future as needs and conditions warrant. Any future such uses must be designed, installed, operated, and maintained to be compatible and not interfere with the senior uses as defined in Section A above. This site-specific plan is administrative in nature and is Categorically Excluded from further review under the National Environmental Policy Act (NEPA) in accordance with 516.DM 2, Appendix 1, item 1.10, which states " – Policies, directives, regulations, and guidelines that are of an administrative, financial, legal, technical, or procedural in nature and whose environmental effects are too broad, speculative, or conjectural to lend themselves to meaningful analysis and will later be subject to the NEPA process, either collectively or case-by-case". Any additional development of Flounce Rock will be addressed in a site-specific NEPA document.

C. Site Description

The site is located approximately 6.3 miles west of Prospect, Oregon, and approximately 2 miles north of Lost Creek Reservoir. It is on Flounce Rock, a prominent landmark in the area. The area is managed by the Butte Falls Resource Area. It is specifically located in sec. 5, T. 33 S., R. 2 E., Jackson County, Oregon at approximately 42º 43' 39.7" North Latitude and 122º 36' 31.9" West Longitude. The elevation at the Flounce Rock Communications Site is approximately 4,133 feet above mean sea level. A site map is provided as Appendix A.

D. Area Served

This site serves the Medford Ranally Metro Area (RMA), population 100,000 to 299,999, which is an RMA Zone 6. This zone may be adjusted in the future as populations change. This information will be used for rental fee determination.

E. Access

Access to Flounce Rock is from State Highway 62, to Ulrich Road, then north and west to the site over BLM road #32-2E-34 for approximately 6.4 miles. Where the road crosses private lands, BLM has legal access through exclusive easements. These easements were acquired in the past from the private landowners.

F. Site History and Development

The first communications facility ROW on Flounce Rock was issued to Elk Lumber Company, now Meriwether S. Oregon Land and Timber (Forest Capital Partners), in 1954 for two-way radio communications. At that time, the road and power line were also authorized to Elk Lumber

Company. In 1965, the U. S. Forest Service and the BLM established facilities for radio repeaters for their respective agency use. The next facility authorized was to the Prospect Lions Club in 1966. This facility was a television broadcast translator serving the community of Prospect.

In 1982, the Corp of Engineers, Portland Office, was authorized a ROW for a microwave and radio repeater facility at the site. Western Tele-Communications was authorized a microwave relay facility at the site in 1985. This facility was transferred to Pinnacle in 2001, then later to Corban Communications, now defunct. Pacific Power & Light, now Pacificorp, was authorized a radio and microwave relay facility in 1988. The final two facilities were authorized to Cellular One, (now AT&T) and U.S. Cellular for cellular phone service in 1993.

The Meriwether facility is scheduled for removal in 2009 or 2010.

Space appears to be available in the existing buildings and towers to serve this area for the current and future demand. Any modifications to existing facilities or proposals for new facilities must be approved by the Medford District Office according to the appropriate NEPA process and guidance described in this document.

A list of all authorized facilities as of the date of this plan can be found in Appendix B. Any modifications to existing facilities or proposals for new facilities must be approved by the Butte Falls Resource Area according to the appropriate NEPA process and guidance described in this document.

The site currently appears to be relatively free of interference, receiver sensitivity, and noise. If additional new uses deteriorate the receiving/transmitting operation of the existing uses, the new uses may be required to institute additional studies, equipment upgrades, frequency isolation, or physically separate from the existing uses. This may be particularly required if they are continuously transmitting in nature.

G. Goals and Objectives of Site Management Plan

1. This site is to be used for low power communications uses only. The maximum power output expressed as effective radiated power (ERP) for the Flounce Rock Communications Site is based on the maximum output allowed for two-way radio under the FCC's rules at Title 47, Code of Federal Regulations, Part 90. As of the 2003 regulation, that is 500 watts ERP. Each use must operate at or below the power level authorized by their respective FCC license as long as it does not exceed the site limitation. This power limitation does not preclude existing and new uses from being designed, operated and maintained to meet other interference, noise floor, receive sensitivity, or RFR standards included in this plan.

2. Manage communication equipment on the Flounce Rock site to maintain the radio frequency (RF) hazard to be within the Public Standard as defined by the FCC.

3. Systematically develop the site to maximize the number of compatible uses while ensuring safety and protection of resources. Development of new towers or buildings within each of the authorized owner's facilities will be authorized only after their respective tower or building space area is filled to near capacity.

4. Help fulfill the public need for adequate communications sites.

5. Protect the interests of holders, lessees, tenants and customers, by preserving a safe and electronically "clean" environment.

6. Encourage the efficient development and use of space and facilities within the designated site.

7. Achieve visual quality objectives by requiring design standards that are unobtrusive and utilizing earth tone colors and non-reflective surface material and stringent site maintenance requirements.

8. Describe the BLM's policy for maintenance of the road to the Flounce Rock communications site.

9. Develop new facilities only after the appropriate site-specific NEPA analysis and coordination with current lease or ROW holders and users. This future development must be consistent with the land use plan.

10. Amend this Communications Site Plan as necessary to be consistent with future RMPs. BLM will provide authorization holders with proposed amendments to this plan and will allow a reasonable period of time for the holders to review and comment on the proposed changes.

II. AUTHORITY AND DIRECTION

A. Authority

The authority used by BLM to authorize communications uses on public land (administered by the BLM) is the Federal Land Policy and Management Act of 1976, 90 Stat. 2776 (43 U.S. C. 1761-1771) and is reflected in Title 43, Code of Federal Regulations (CFR), Sections 2801- 2808 and various BLM Washington Office Information Bulletins and Instruction Memoranda.

BLM authority for communications site management planning is contained in BLM Handbook 2801-1, Plan of Development. Direction on and policy for communication use authorizations is contained in BLM Manual Section 2860.

Authority for the issuance of authorizations and/or licenses for the transmission and reception of electronic radiation for communication purposes is granted by Congress and administered by the FCC and/or the National Telecommunication and Information Administration – Interagency Radio Advisory Committee (NTIA/IRAC).

B. Relationship to Communications Site Leases/ROW Grants

This site plan will be incorporated into all leases and ROW grants issued (now and/or in the future) for this communications site and must be used in conjunction with the granting authorization. **PROVISIONS OF THIS SITE PLAN ARE ENFORCED THROUGH THE GRANTING AUTHORIZATION (LEASE OR ROW GRANT).** Each lessee or holder is

expected to include the requirements of the authorization and this site plan into any documents, which describe the business relationship between the lessee and their tenants and customers. The lessee or holder is responsible for enforcing those provisions.

III. GENERAL RESPONSIBILITIES

A. The Bureau of Land Management

The BLM retains the responsibility for issuing and amending authorizing instruments to Facility Owners and Facility Managers, only for the areas actually occupied by the authorized improvements. The issuance of a FCC license (authorization), or frequency assignment, does not authorize occupancy of public land. Granting occupancy and use of public land rests exclusively with the BLM. This includes:

1. Approving any new facility(ies) at the site.

2. Approving amendments to existing facilities (i.e., additions to tower, building, support facilities), and approving assignments of leases and ROW grants to qualified buyers of facilities on the site.

3. Approving any modifications to existing facilities including the tower, antenna, equipment or building. Also, approving any changes to the existing FCC licenses, prior to the submission of an application to the FCC.

4. Frequency Management. The BLM is not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

B. Facility Owners and Facility Managers

Facility owners and facility managers (or their designated representatives) are responsible for:

1. Complying with their use authorization and all provisions of this site plan.
2. Ensuring that all new facilities, expansions, or improvements are consistent with the Butte Falls Resource Area land use planning documents; any environmental document(s)/decisions for the site; and, this site plan.
3. Ensuring facilities/equipment not complying with Federal/State/local laws/regulations/ ordinances will be removed or modified within one year of the approval of this plan. Any modification needs pre-approval by the BLM.
4. Keeping all facilities within the established limits of their authorized area.
5. Providing the BLM with the name, address and phone number for a local contact person. The Facility Owner and Facility Manager and the contact person may be the same individual. The contact person will be available for emergencies and will have the authority to make

decisions about construction issues, facility maintenance and all equipment within the facility.

6. Providing 30-day notice to all facility owners/facility managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential interference. This notification requirement applies to new frequencies for facility owners/facility managers as well as their tenants and customers
7. Adhering to the lease/ROW grant as follows:

    a. Facility Owners and Facility Managers with Communications Use Leases are authorized to rent building/tower space to tenants and/or customers without prior written approval from the BLM.

    b. Tenants and/or customers may not construct their own equipment shelter (building, shelter, generator pad, cabinet, etc.) or antenna support structure (tower or mast). The facility owner must own all communication shelters and towers under their lease or grant. [If that is not possible, a separate SF-299 application, cost-recovery fees, analysis, and authorization are required. This will result in the use being a tenant/customer of the original lease/ROW in addition to being a separate facility for billing purposes. See 43 CFR 2806.37]

    c. Tenants and/or customers using a facility covered by a Facility lease/ROW will not have separate BLM leases/ROWs to authorize their use except in situations where regulations or policy require them.

    d. Facility Owners and Facility Managers are responsible for complying with the terms and conditions of the facility lease/ROW. Facility Owners/Facility Managers are also responsible for ensuring that their tenants and customers are in compliance with the terms and conditions of the lease/ROW and applicable FCC or NTIA/IRAC license terms and conditions.

    e. The Facility Owner and Facility Manager may not place any unreasonable restrictions nor any restriction restraining competition or trade practices on tenants and/or customers, or potential tenants and/or customers.

8. Ensuring that all communications facilities and equipment are installed, operated, and maintained according to the Motorola R-56 Standards and Guidelines for Communication Sites. Repairs and modifications to existing facilities/equipment must also meet Motorola R-56 Standards. These standards may be waived by the BLM authorized officer when recommended by a site user association or similar technical committee upon request of a facility owner/manager when equivalent measures would achieve similar results.

9. Ensuring that all communication equipment meets ANSI, FCC and BLM regulations, guidelines and standards concerning radiation limitations by:

    a. Monitoring radiation levels at their facility and;

b. Immediately correcting any radiation levels that are, or could be a hazard to human health. (FCC 47 CFR sections 1.1307(b), 1.1310 and 2.1093) and FCC OET Bulletin 65, August 1997.

10. Providing the BLM with a certified copy of all uses and the correct category of uses within the facility, along with the current phone numbers and addresses of all tenants and customers as of September 30th each year. This report is due by October 15th each year.

11. Keeping the premises around their buildings free of trash and debris.

12. Placing the BLM lease/ROW serial number on the door of their communications site building, or on a gate if a fenced compound.

13. Correcting all interference problems. The users are normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

C. FCC and NTIA/IRAC

The FCC and NTIA/IRAC are responsible for Frequency Management. The FCC and NTIA/IRAC are not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the authorizations.

IV. AUTHORIZED USES AND USERS WITHIN A FACILITY

Use by Multiple Users

Use of all facilities and improvements by more than one user will be required except where the facility owner is a government agency or as noted below. Site applicants will take the lead in this area and design their proposals to accommodate multiple uses of facilities and improvements. This includes multiple uses of buildings, towers, back-up generators, grounding systems, fuel containers, access ways and parking areas.

BLM will not authorize new ROWs, ROW expansion, or modification until it is determined that existing authorized space and facilities are being used to capacity. Development or expansion of a ROW solely to preclude potential competitors from locating nearby is unacceptable and will not be authorized by the BLM.

Facility Owners and Facility Managers are not required to lease facility space to others if they can prove to the BLM authorized officer that:

1. Space is not available;

2. The use is incompatible with the existing facilities;

3. Additional space is needed by the facility owner/manager;

4. Additional users would violate system security needs; or,

5. Potential interference is not resolvable.

6. Additional users would violate security requirements to which the Facility Owner or Facility Manager is subject.

V. FEES

The BLM will charge Facility Owners and Facility Managers annual rental fees pursuant to federal regulations contained in 43 CFR 2806. The fees are based on two factors- the type of communications use, and the population served by the use. These fees are considered fair market value for the use of public land. The population Zone 9 (less than 25,000) will be used for these calculations unless something else is specifically agreed to in writing by the authorizing officer or until populations change.

Fees that Facility Owners and Facility Managers may charge their tenants and customers are to be reasonable (consistent with, and not in excess of, other fees for similar facilities) and commensurate with the uses and occupancy of the facilities and services provided to tenants and customers.

VI. GENERAL OPERATION AND MAINTENANCE DIRECTION

A. Unique Resource Considerations at this Communication Site

There are no currently identified special resource coordination considerations with on-site or adjacent resource values. Should special conditions arise through the revision process of the land use plan or other situations, this site plan will be amended accordingly.

B. Wiring and Grounding

1. All equipment is to be installed within existing buildings and in metal equipment racks or within metal equipment cabinets and in accordance with manufacturers' specifications. All equipment, racks, cabinets and overhead ladder trays are to be grounded and shielded in compliance with National Electrical Code (NEC) and in accordance with accepted industry standards.

2. All electrical wiring and grounding must meet the NEC and applicable State/local codes. All permanent wiring shall be installed in metallic conduit. Surge protection shall be installed between the electric service meter and the first power distribution panel.

3. Lightning protection shall be in accordance with NEC part 810-20 Antenna Discharge Units and Part 810-21 Grounding Conductors. Periodic bonding of the antenna feed lines

to the tower (when galvanized steel) shall be made with proper bonding connectors that are stainless steel (preferred), Copperweld, tin plated, or made of brass.

4. Each building is to have its own separate grounding system for all users in that structure. Wherever practical, interconnection of individual grids and/or the simultaneous placement of a large sized copper ground wire with any new grounding systems that are buried on the site will be required.

5. Site or facility grounding must be constructed of copper with #2 AWG or larger wire, Copperweld, or 2" or larger solid copper strap, connected to an adequate site/facility ground electrode system. The site/facility ground electrode system shall be bonded to the power service entrance grounding electrode conductor. Guy wires should also be grounded using manufacturers approved methods to preclude bi-metallic junction and corrosion. All equipment on the site (buildings, towers, power units, transmitters, receivers, antennas, combiners, telephone systems, power cabinets, HVAC units, etc) must be connected to the site/facility ground by direct connection. Electrical system ground wiring is required for electrical ground fault protection and circuit breaker coordination. The grounding systems shall comply with applicable laws, codes and in accordance with standard engineering practice. Below ground connections must use either an exothermic welding process (i.e., Cadweld, Thermoweld, etc.), copper wedge pressure devices (i.e., Ampact, Burndy, Wrench-lock, etc.), or brazed copper connections in conjunction with a mechanical UL listed connector (to be used as a physical strength enhancement component). Brazing by itself is not an acceptable method of bonding below earth grade (buried).

C. Communications Equipment

Equipment Ownership

All equipment shall be labeled (or the information available at the site, as applicable) with:

1. The owner's name;

2. Transmitter frequency(ies);

3. A valid FCC, or IRAC, authorization;

4. Transmitting power output(s); and

5. A current 24-hour phone contact number.

Transmitting Equipment

All transmitters will have protective devices (shields, filters, isolation components), designed into or externally installed, to prevent interference with other users. All transmitters will meet FCC licensing requirements. Two-way transmitters should have dual section isolators for a total of 60 db of isolation.

The re-radiation of intercepted signals from any unprotected transmitter and its associated antenna system will be prevented by the use of appropriate filters (wide band and narrow band broadcast transmitters).

The direct radiation of out-of-band emissions (i.e., noise or spurious harmonics) will be reduced to a level such that they may not be identified as a source of interference as defined in the FCC Rules and Regulations (e.g., Part 90.209(e) for non-broadcast uses). If site noise (electromagnetic noise) becomes an issue, noise threshold limits will be established, and amended into the site plan, prior to authorizing any new uses.

Direct radiation of out-of-bound emissions, (i.e., transmitter wide band noise, spurious emissions, harmonics, etc.) shall be reduced to a noninterference level by using bandpass, lowpass, and/or harmonic filtering. Where duplexing is used, use of a notch type device should be avoided.

Re-radiation of signals from a transmitter and its associated antenna system shall be prevented by installing appropriate devices (i.e., ferrite isolators), with minimum return loss of 25 db.

All transmitters not in immediate use and not specifically designated as standby equipment shall be removed. Loads connected to circulators are to be capable of dissipating the total power output of the transmitter.

Receiving Equipment

All receivers shall comply with all applicable parts of the FCC rules, including Parts 2 and 15.

All receivers shall have sufficient "front end" pre-selection to prevent receiver spurious response. The use of bandpass, band-reject cavity or crystal filters may be required to prevent receiver-produced intermodulation or adjacent-channel interference.

Where duplexing is used, a bandpass cavity duplexer is required. Use of the notch-type device is not permitted. Where notch-type devices are currently in place and there are no interference problems, their use may continue until the equipment is replaced, at which time they must be replaced with bandpass devices.

Tower

Generally only one tower is authorized for each facility owner. Facility Owners and Facility Managers may obtain permission to construct the second tower only after submitting evidence that demonstrates that their existing tower is completely filled and full use has been made of combining systems.

1. All towers will be left unpainted, if they are dull, galvanized steel. Paint is required only if the tower has a shiny (i.e., reflective) surface. If paint is required, the BLM will determine what non-reflective color the tower shall be painted.

2. Maximum tower height for future towers at this site is 165 feet.

3. Anti-climb devices, removable steps, or other means to discourage unauthorized climbing, are highly recommended to reduce or avoid liability claims.

4. All new towers will be self supporting. No guy lines are permitted.

5. To avoid possible impacts to birds or bats, follow the most current version of the U.S. Fish & Wildlife Service's Interim Guidelines on the Siting, Construction, Operation and Decommissioning of Communication Towers, available at the following website: *http://migratorybirds.fws.gov/issues/towers/comtow.html*

Antennas

1. Microwave (dish) antennas (other than ground mounted satellite dishes) will be limited to a maximum of eight (8) feet in diameter. The smallest diameter dishes are preferred if technically feasible.

2. Dishes should be mounted as low as possible to reduce visual impacts.

3. All antennas must meet all OSHA safety standards. If an antenna exceeds FCC public radiation standards (see FCC OET Bulletin 65) at ground level in publicly accessible areas, it will be remedied within 24 hours after measurements are taken or isolated (e.g., fencing, signing, relocation, lowering power levels are all possible remedies). Ground measurements of radio frequency radiation (RFR) levels will be taken before mitigation measures are implemented.

4. Color(s) for dish antennas, or covers, must be pre-approved by the BLM. New white dish antennas and/or covers will not be approved. Existing white dishes and covers must be repainted or replaced with dishes of approved color (typically dark grey), as repairs or replacement become necessary.

5. Antennas will be purchased with or treated to have a non-reflective surface.

Interference

The responsibility for correcting interference problems is a matter for resolution between the lease/ROW holder of the facility(ies), the user causing the interference, and the affected party(ies). First users on a site have seniority with respect to the resolution of interference complaints. Senior holders have an obligation to maintain their equipment to industry standards, to operate their systems in accordance with the terms of both the FCC license and NTIA/IRAC frequency authorization, and to comply with the BLM authorization.

New users on a site must correct, at their expense, interference problems that they create. They may be required to furnish an intermodulation study, electromagnetic noise study, or other interference-related data and must agree to accept financial responsibility for elimination or prevention of any interference caused by the facility before their application can be evaluated. They must cease operation of the suspect equipment until the problem is corrected. If interference problems cannot be resolved or corrected within a reasonable time, the new use that is causing the interference may be terminated and the equipment removed.

All users shall cooperate with the Site Users Association, if one is formed, and the BLM in identification and correction of any interference. The BLM does not have authority for correcting interference problems, but can act as a mediator to help all affected parties. Interference problems must be coordinated with the FCC or NTIA/IRAC, whichever is appropriate.

Interference with law enforcement and/or emergency communications must be corrected immediately. The operation of equipment covered by this site plan shall not interfere with United States Government radio or electronic operations already in existence on public land within two (2) miles of this site. The user causing this interference, shall, at its own expense, take all action necessary to prevent or eliminate such interferences. If it does not eliminate such interference within ten (10) days after receipt of notice from the BLM to do so, this use will be terminated.

If electromagnetic noise becomes an issue, noise thresholds will be established and this site plan will be amended accordingly.

D. Cables and Transmission Line (Wave Guides)

All new cabling will be jacketed and shielded and shall either be flexible or semi-rigid type. Existing substandard cables will be upgraded as repairs or replacement become necessary.

Cables will be properly installed and will be strapped and fastened down. Use of ports at building entrance points will be kept to a minimum by use of combiners.

When attaching power cables onto a tower, conduits should be used. Coax and wave guides should be installed in a wave guide ladder or equally divided among all tower legs.

All transmission lines (wave guides) are to be supported in accordance with manufacturer's specifications.

Unjacketed transmission line of any type is prohibited. No transmission line shall be left unterminated.

Double shielded braided or solid shielded cable will be used. No RG-8 type cable is permitted. No connector-type adapters will be used on transmission lines. Only correct connectors that will mate to connected devices are to be used.

Conduits will be shared when they service common areas and will be buried where possible.

E. Radiation

All communications uses must meet ANSI, FCC, and BLM regulations, guidelines, and standards concerning radiation limitations. This site is considered uncontrolled for the purposes of compliance with RFR standards.

Monitoring radiation levels at the site is the responsibility of all site users and will occur at intervals to comply with FCC regulations and guidelines. A copy of these monitoring reports

will be provided to the BLM upon request. The FCC is responsible for enforcement of the monitoring and standardization for compliance. The FCC could revoke the license and/or issue a fine for failure to comply. Additionally, the BLM could terminate or suspend the use authorization for failure to comply.

Onsite RFR measurements will be taken using appropriate equipment that can adequately measure and record both on-tower and on-the-ground levels before mitigation measures related to RFR are implemented pursuant to FCC standards and requirements.

Security fences with RFR notice signs are required around areas that exceed public use levels including anchor points outside the primary facility compound fence, if necessary. Raising higher power transmitting antenna on the tower or modifying the antenna type to half wavelength may be necessary to eliminate RFR hazards. Reducing power may also be required if other alternatives are not feasible. All fencing location and design or new tower construction must be pre-approved by the BLM.

Warning signs will comply with ANSI C95.2 color, symbol, and content conventions. Contact information including name and telephone number will also be included on warning signs. Existing warning signs compliant with FCC 47 CFR 1.1307(b) which do not currently include name and telephone number will be accepted as long as the name and telephone number is clearly posted on other signage at the Lessee's site.

Lowering power levels for on-tower access during maintenance will be coordinated between affected users.

Any identified RFR radiation problems that are, or could be, a human health hazard must be corrected within 24 hours after measurement tests have been completed or be removed from the site by the site user(s). If the proposed corrective action involves any new ground disturbance, it must be pre-approved by the BLM.

F. Utilities-Availability of and Requirements for:

Commercial Electrical Power

Commercial power is provided to the site under a separate ROW grant to PacifiCorp. The current electrical service to the site has the capacity to service additional users at the site. Future upgrades of the electrical service will be part of the right-of-way to PacifiCorp and may need to be paid for by the benefiting user(s).

Telephone Service

If additional telephone service is ever deemed necessary or expanded at this site, a separate ROW grant will be issued. Site users will also pay for the cost of:

1. The necessary resource surveys and reports for service connections; and

2. The cost of constructing service connections.

For visual reasons, overhead utility poles may not be authorized.

Fuel Tanks

Facility owners and facility managers are responsible for providing fuel storage (propane and diesel) and emergency power for their tenants and customers. No tenants or customers will be authorized to have separate fuel tanks and/or generators. Each facility owner will preferably consolidate fuel storage into a tank large enough in size to accommodate all tenants and customers within their facility. At a minimum, tanks will be grouped together in a consolidated area adjacent to their facilities. All fuel storage tanks (e.g., LPG, propane and diesel) must meet current fire department, Federal, State and local government safety and hazardous materials requirements. Propane is the preferred fuel for future generators.

1. All tanks will be:

    a. Signed in red letters, "SMOKING OR OPEN FLAME PROHIBITED WITHIN 20 FEET";

    b. In conformance with National Fire Protection Association (NFPA) requirements; and,

    c. Painted an approved color, or screened by an enclosure to blend in with the natural environment. If an enclosure is used, it must be pre-approved and painted an approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

2. Diesel tanks will also be:

    a. Enclosed in BLM and fire department approved secondary containment vaults that are painted a BLM-approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

    b. Constructed with underground fuel lines. Fuel line must be constructed of black, treated pipe and fittings, and must be posted.

    c. A containment basin must be maintained below all diesel tanks which are not designed and approved to be self contained.

G. Sanitary Facilities

Plans for any sanitary facilities must be pre-approved by the BLM. If it is determined by the BLM that the users need such facilities, they will be provided by the lease/ROW holder in a manner and location satisfactory to the BLM and within the requirements of the Jackson County Health Department.

H. Security and Law Enforcement

The Jackson County Sheriff's Department is the key law enforcement agency for the area. They are responsible for most civil and criminal matters. The BLM will be responsible for enforcing matters related to uses of BLM lands (e.g., resource protection issues).

Patrolling and policing for security purposes is the user's responsibility.

Several of the facilities on Flounce Rock are currently fenced. If fencing is ever deemed necessary for security purposes at other facilities on the site, it must meet the following criteria:

1. All fences must meet health and safety requirements.

2. All fence locations and design require Bureau of Land Management pre-approval. The standard fencing type will be chain-link (i.e. cyclone).

3. The standard fence height will be eight (8) feet.

4. Fencing will be designed, installed, maintained, and of a type to minimize interference issues as described in the Motorola R-56 standards.

5. Fences will be signed with RFR notices if RFR is above public levels.

I. Site Maintenance

The objective of maintenance activities is to present a clean, neat, and orderly appearance at the site and have all of the authorized improvements safe for workers and the public. All users will keep up the overall appearance of the site.

Miscellaneous debris remaining after any construction and/or equipment installation, removal or modification, is not only a hazard, but can cause interference or intermodulation problems. In particular, all loose wire or metal objects are to be removed from the site.

The users of the site will remove all graffiti within 10 working days of finding it, weather permitting.

Users will not be permitted to leave or dispose of trash, garbage or cut brush on public lands. No outside trash or litter containers will be provided. Site users will remove litter from the site as it is produced.

Policing of litter in common areas (i.e., areas between buildings and developed sites) is the shared responsibility of those holders bordering these areas.

During construction and/or maintenance, excess materials (e.g., cement, wire, metal, building materials) will be removed from public land.

Peeling paint on buildings and/or towers will be re-painted within thirty (30) days of discovery by the facility owner or facility manager and within 10 days of notification of the holder by the BLM, weather permitting.

The Lessee is responsible for the abatement and control of noxious weeds within the bounds of their lease site and common use areas. Abatement practices are to be implemented in accordance with the Butte Falls Resource Area weed abatement programs.

J. Inspections

Enforcement authority is vested in the BLM as the Communications Site Administrator for Flounce Rock via 43 CFR 2800. The BLM may conduct an annual inspection of each user's facility. This inspection will verify:

1. Compliance with technical standards.
2. Structural integrity.
3. As-built plan accuracy.
4. Electromagnetic compatibility.
5. General site health, safety, and cleanliness.

The BLM shall provide written notice of the scheduled inspection date at least 30 days in advance. Each user shall arrange to have personnel available at the site at the time of the inspection.

Any non-compliance found by a user shall be reported to the BLM. The BLM will conduct an inspection and a written copy of the inspection report shall be forwarded to the violating user within 30 working days following the inspection. The report shall include:

1. A description of the violation.
2. Corrective action required.
3. Name, address, and organization of the responsible party.
4. Time allowed for completion of corrective measures.
5. Anticipated action in the event of noncompliance with remedial instructions.

K. Fire Prevention and Hazard Reduction Requirements

Facility owners and facility managers will be required to control vegetation within the fenced area around their facilities. Gravel or mineral soil (i.e., bare ground) must be maintained to a minimum of (10) feet clearance around buildings and a minimum of (10) feet clearance around any propane tanks. Identified threatened, endangered, or sensitive plant species must remain within the minimum clearance areas.

Smoking is prohibited in flammable vegetation areas.

Roof structures shall be kept reasonably clear of debris at all times.

No explosives will be stored at this site. Flammable materials shall be stored in conformance with the requirements of local fire regulations. Flammables will be placed in closed containers

and stored away from sources of ignition and combustible materials. If flammables are stored within a building, the building will be locked, properly signed and well ventilated.

Approved spark arresters will be required and maintained on all internal combustion engines.

At least one (1) U.L. rated 20 lb. A:B:C dry chemical fire extinguisher is required inside either each building or in any vehicle the user brings to the site. Prior to each June, fire extinguisher(s) shall be inspected by holders and refilled, if necessary.

Any fire will be immediately reported to "911", the nearest BLM office and/or Jackson County Sheriff.

BLM Officers will make periodic fire prevention inspections. They will call to the holder's attention any lack of compliance with the above regulations, plus any other existing hazards. Compliance with these inspections is required within the time limits specified in the inspection report.

All fire protection standards must be accomplished by the beginning of fire season unless otherwise agreed to, and then maintained throughout the fire season.

For new construction, the BLM will provide the Holder with a separate Construction Fire Plan which will be prepared at that time as applicable

L. Access Maintenance and Restrictions

Roads

The road to the site is generally good condition due to maintenance by BLM and the county. However, it is certain that future use of the site will, over time, degrade the quality of the road and will require maintenance. If a user association is formed on Flounce Rock, the costs of road maintenance will be assessed by the association and enforced through this management plan. If a user association is not formed, maintenance costs may be assessed depending on the amount of use on the road. If there is disagreement among users as to the assessed costs, BLM will determine the costs to be borne by each leaseholder.

Individual users who damage or disturb the access road, or any associated structures, such as ditches, culverts, roadside vegetation, signs and/or underground utilities or facilities, will be required to repair the road and/or associated structures, to conditions equal to or superior to those prior to any damage or disturbance. This work must be done according to applicable road maintenance standards and may require the appropriate NEPA analysis.

Interior Site Driveways/ Parking Areas

Interior site driveways within the communications site will be maintained by the site users. Interior roads will be planned and approved during establishment of new facilities. Interior roads will be maintained in a manner to allow only one entrance to the site. Off-road vehicle use by a user in and around the communication site will be avoided.

Road Closures

Native surface roads are subject to periodic closures to entry during periods of extreme fire danger, inclement weather, or wet conditions. Authorized site users may use the site during these periods, but should use judgment and may need to seek advance approval from the Bureau of Land Management.

VII. CONDITIONS FOR CONSTRUCTION, MODIFICATIONS OR EXPANSION

A. Facility Owner/Manager Responsibilities

In addition to the responsibilities listed in Section III, new applicants and existing Facility Owners/Managers proposing new, modified, or expanded facilities are responsible for:

1. Submitting a complete application to the Butte Falls Resource Area (ATTN: "Realty Specialist") prior to any new construction or modifications to existing improvements, unless new electronic equipment is being installed in/on an existing tower and/or an existing building. The application must include:

    a. The appropriate cost recovery and application fees as determined by BLM.

    b. A copy of the approved Site Plan Base Map showing all of the proposed (new) facilities including structures, towers, and auxiliary equipment;

    c. Completed drawings/plans prepared by a registered engineer and Plan of Development approved by the BLM;

    d. Identification of any microwave beam paths, a plot of their azimuth(s), and their proposed elevation(s) on the tower;

    e. Documentation that shows that proposed facilities will not be obstructing, or interfering with, any existing fixed point to point antennas, omni-directional broadcast antennas, or microwave beam paths in the directions of primary population targets. Proposed beam path needs must be shown on Site Plan Base Map; and,

    f. Any needed recommendations, changes or modifications to their original proposal, based on any required resource surveys and/or reports.

2. Demonstrating that their proposals will not cause undue interference with any existing uses before the BLM can approve new facilities. In addition, it is the applicant's responsibility to show that any new facilities will make the most efficient use of the limited amount of space at the site.

3. Showing their proposals will provide for future users without additional construction.

4. Providing engineering and geotechnical investigations for development of specific foundation designs and grading plans.

5. Providing for erosion control as part of the Plan of Development prior to construction activities. At a minimum, erosion control must include: sediment control, stipulations that cut/fill slopes will be graded and contoured to prevent erosion and/or excessive runoff, and recommendations for temporary erosion control measures, (e.g. netting, silt fences, swales, and/or sediment collection areas).

6. Coordinating with other Federal (e.g., FCC and FAA), State and County agencies and obtaining all required approvals and/or permits.

7. Providing 30-day notice to all facility owners/facility managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential interference. This would be for new frequencies for themselves and their tenants and customers.

8. Insuring that all written approvals have been obtained from the BLM prior to construction. In addition:

   a. Directional antennas will only be protected within the arch between their licensed 3 dB points.

   b. New and/or modified facilities will not obstruct existing fixed point-to-point antennas or omni-directional broadcast antennas in directions of primary population targets.

B. Construction Methods and Resource Protection

Plans submitted by an applicant for any new construction or modifications shall specify provisions for soil rehabilitation measures including, but not limited to, soil replacement and stabilization and for proper handling of runoff from buildings, parking area, access roads, and undeveloped common areas.

The following methods and resource protection measures will be required to minimize impacts during construction:

1. Avoid and protect sensitive resource areas, as identified by the BLM.

2. Compliance with the Plan of Development and the Erosion Control Plan.

3. During construction and/or maintenance, no paint or paint thinners will be disposed of on site.

4. Minimize ground disturbance and vegetation removal as much as possible during construction activities. All ground-disturbing activities require BLM pre-approval.

5. Disturbed areas will be re-vegetated with species pre-approved by BLM as soon as possible after construction. If necessary, reseeding will be required until vegetation is successfully established as determined by the BLM.

6. No grading material will be cast off during construction/reconstruction activities. Excess soil can be used for fill material on road and/or building/tower pads.

7. Temporary on-site storage of construction materials will require pre-approval by the BLM.

8. Construction materials and supplies, except for hazardous materials (see number 9. below) may be left unattended at the construction site at the end of each workday, but at the owner's risk.

9. Hazardous materials, including but not limited to all fuels, oils, and lubricants, are not to be left unattended at the site at any time. During construction, these materials are to be removed from the site at the end of each workday, or temporarily stored inside a locked and signed building until the following workday.

10. All surplus construction materials and/or waste debris must be removed from the site no later than thirty (30) days after construction has been completed.

11. Any earth moving or heavy equipment (e.g., dozers, graders, cranes, backhoes, etc.) leaving the designated roadway and/or approved parking area(s) to perform authorized activities at the site, will be washed off prior to being brought onto public lands to prevent the introduction and spread of noxious weeds into the area.

C. Construction Inspection

1. All new construction, reconstruction, or major modification shall conform to the established technical standards and accepted engineering practices (i.e., the Uniform Building Code).

2. Any construction inspections required by other applicable agencies are the responsibility of the lessee/holder. Copies of completed inspections are to be provided to the Butte Falls Resource Area, Authorized Officer, either as they occur or as part of the final as-built plan. Inspection information shall become a permanent part of the holder's lease/ROW case file.

3. The Lessee/Holder agrees that corrective work detailed in BLM, or other agency required compliance inspections, would be completed by the scheduled completion date. If the Lessee/Holder disagrees or has questions about specific items, the Lessee/Holder must contact the BLM in order that the disagreement or item may be resolved.

4. A final set of as-built plans will be submitted to the Butte Falls Resource Area Authorized Officer within 90 days of acceptance of structure (if contracted) or of completion date.

D. New or Remodeled/Expanded Buildings

1. Any new buildings must be designed to accommodate multiple users along with fitting into the physical environment as defined in a site-specific environmental analysis developed at the time of the proposal.

2. Buildings are required to be one-story. The roof must be metal or covered with metal to be fire resistant. Roofs can be equipped with antenna support structures, such as poles and railings that can extend up to 25-feet above ground level.

3. Facility Owners and Facility Managers are encouraged to construct the interior of their buildings in a modular fashion, so that they can:

    a. Sublease sections to others;

    b. Provide tenants and customers with internal separation and security;

    c. Reduce physical interference; and

    d. Increase management effectiveness.

4. The following materials are approved for construction of new facilities (i.e. buildings):

    a. Floors – Concrete slab with drainage.

    b. Walls – Concrete block, metal, or pre-fabricated concrete.

    c. Roof – Metal, or concrete, if painted to eliminate shiny surfaces, or other fireproof material as approved by the BLM. Proposals for wooden roofs will not be approved.

    d. Partitions – If it is felt partitions are necessary in buildings, ensure they are constructed with fire resistant material (e.g., concrete block, reinforced concrete, or properly grounded fencing.

    e. Color – Proposed color for use on all exterior building surfaces must be pre-approved by the BLM. The goal of the color selection for the facilities is to make the building as inconspicuous as possible and make buildings located on the skyline look inconspicuous when viewed from a distance. The intent is to reduce or eliminate glare from reflective and/or illuminated surfaces such as windowpanes, sheeting and reflective paints. Non-reflective, BLM-approved colors will be used on equipment buildings.

5. Building entry lights must:

    a. Only light the immediate area in the vicinity of the door;

    b. Be motion activated and have a limited time duration (e.g., 3-5 minutes); and

    c. Have a shielded beam that is pointed at the building door.

Requests for all-night (i.e., "dusk-to-dawn") lighting, or entry lighting that would be visible from outside of the site will not be approved. FAA-required lighting would be the only exception.

E. New or Remodeled/Expanded Towers

1. All new construction, reconstruction, and modifications to towers will be pre-approved by the BLM prior to implementation.

2. It is the applicant/holder's responsibility to assure that a new, or modified, structure will not unduly interfere electronically or physically with any existing equipment at the site. Towers must be spaced, so as to prevent ground level radiation and/or interference problems. This must be clearly demonstrated in writing to the BLM prior to issuance of a new lease/ROW or amendment.

3. All new towers will comply with current structural and safety specifications and design standards, including safety-climbing devices. Towers should be as narrow and "open" as safety and structural integrity allow. New towers will be designed using maximum wind, snow, and/or tower loading anticipated for the site.

VIII. SITE ASSOCIATION/ADVISORY GROUP

A site association is probably not needed at this time. If development were to increase, a users association may become desirable. Leadership would need to come from one of the users. As needed in the future, the site association would be responsible for obtaining and maintenance of an administrative access and upkeep of internal roads and parking areas. The site association would also be responsible for ensuring cooperation between users for on-tower access. A site safety officer would be identified within the site association. The site association would be expected to develop a Radio Frequency Radiation Plan/Agreement and recommend measures to reduce interference issues (e.g., through use of filters).

The goal of the site association would also be to maximize the effective use of the site. The objective of a sanctioned association will be to represent all site users as a group when dealing with the Butte Falls Resource Area on matters relating to the site administration. The association would be able to work in cooperation with the BLM to identify problems or opportunities and make recommendations to the BLM for any changes in management strategies at the site. The association could also provide input to the BLM regarding the future addition of equipment and facilities at the site. While the advice and recommendations of the association would not be binding on the BLM, the BLM could use the input for administration of the site. The BLM would be a member of such a group and would help jointly develop the charter (i.e., the ground rules).

In the absence of a formal Site Association, the BLM may utilize a Site Advisory Group that can make suggestions and/or recommendations to specific problems associated with the administration of the site.

IX. APPENDICES

A. Location and Site Maps

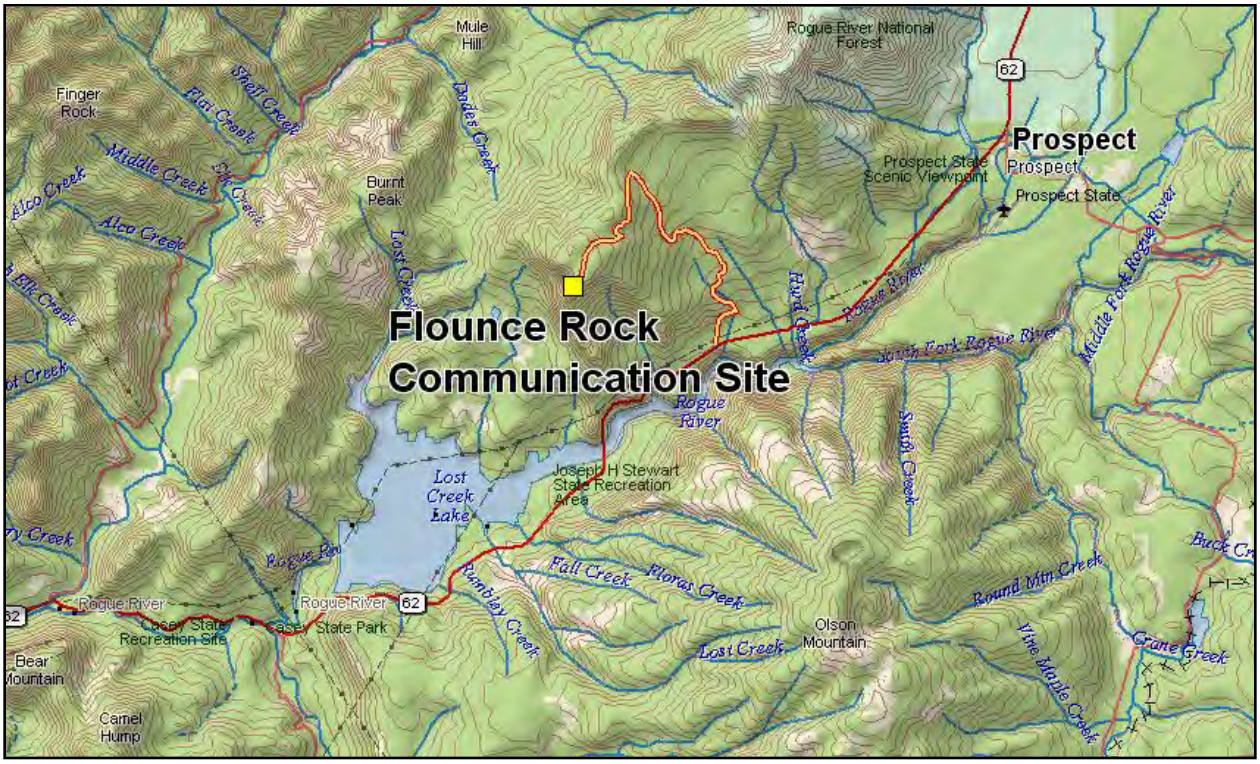
B. Authorized Facilities

C. Site Photographs

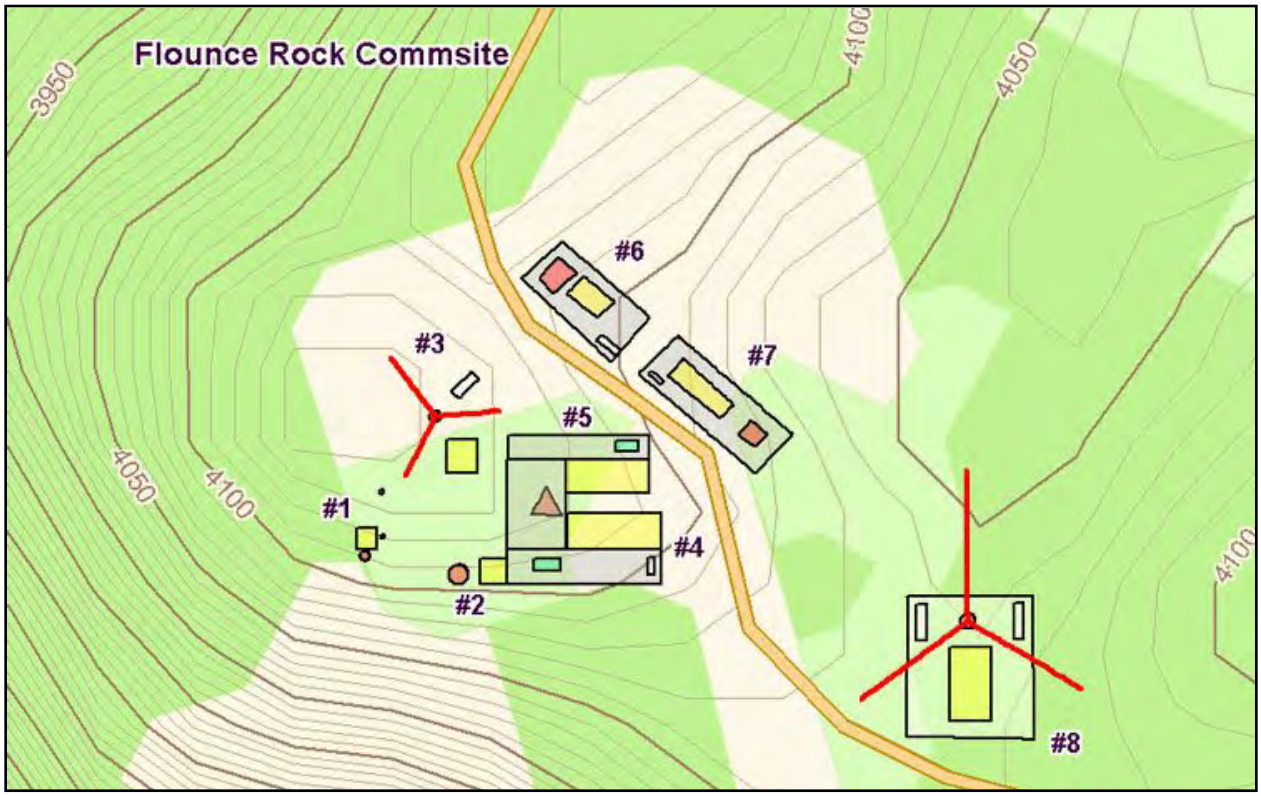
D. Inspection Checklist

APPENDIX A

LOCATION MAP



SITE MAP


Flounce Rock Commsite
3950
4100
4050
4050
4100
4100
#1
#2
#3
#4
#5
#6
#7
#8

APPENDIX B

FLOUNCE ROCK COMMUNICATIONS SITE LESSEE/HOLDER FACILITY TABLE

(See associated User's Table on the Website)

	Auth #	Use	Building	Tower	Access/Parking	Other
Facility # 1 Prospect Lions Club	**ORORE 015295**	**FAM**	**6'x 6' block**	**35' rohn 20' rohn 10' mast**	**Access and parking.**	
Facility #2 BLM Medford	**ORORE 015011**	**PMRS**	**8'x 8' block**	**40' monopole**	**Access and parking.**	
Facility #3 Meriwether S. OR Land and Timber	**ORORE 062087 (scheduled for removal)**	**PMRS**	**8'x 12' block**	**60' guyed**	**Access and parking.**	
Facility #4 AT&T	**ORORE 48431**	**CEL**	**12'x 28' aggregate**	**120' lattice**	**Access and parking**	**Fence 200 gal propane Generator**
Facility #5 US Cellular	**ORORE 48869**	**CEL**	**13'x 21' aggregate**	**None (on AT&T tower)**	**Access and parking.**	**1000 gal propane, Generator Fence**
Facility #6 Corp of Eng. Portland	**ORORE 29029**	**MIC/PMRS**	**10'x 12' alum siding**	**30' lattice**	**Access and parking**	**500 gal propane Generator 30'x 50' fence**
Facility #7 Pacificorp	**ORORE 63072**	**MIC/PMRS**	**10'x 20' metal**	**25' lattice**	**Access and parking**	**250 gal propane generator 30'x 60' fence.**
Facility #8 Telava	**ORORE 65924**	**MIC**	**10'x 25' metal**	**165' guyed**	**Access and parking**	**2- 1000 gal propane tanks. Generator 30'x 60' fence**

APPENDIX C

SITE PHOTOGRAPHS

(See associated Facility Photos on the Website)

Facility 1, Prospect Lions Club

Facility 2, BLM

Facility 3, Meriwether So. OR Land and Timber (to be removed)

Facility 4, AT&T

Facility 5, US Cellular

Facility 6, Corps of Engineers

Facility 7, PacifiCorp

Facility 8, Telava

APPENDIX D

"Flounce Rock Annual Technical Inspection"

Date Inspected: _____ Time Inspection: _____

Permit Holder: _____ Authorization # _____

Site Technician: _____ Phone # _____

Number of Transmitters _____ License Posted _____

Please mark the following Items as Acceptable (A) or Unacceptable (U).

Electrical Wiring ---------- (A) (U) Grounding ---------- (A) (U)

Equipment Installation ---------- (A) (U) Housekeeping ---------- (A) (U)

Building Repair ---------- (A) (U) Tower Repair ---------- (A) (U)

Please mark the following Items as Yes (Y) or NO (N) or (NA)

Isolators ---------- (Y) (N) (NA) Circulators ---------- (Y) (N) (NA)

Cavities ---------- (Y) (N) (NA) Terminators ---------- (Y) (N) (NA)

Filters ---------- (Y) (N) (NA) Lightning Protection ---------- (Y) (N) (NA)

Comments: _____

_____

Recommended Corrective Action: _____

_____

_____

Required Corrective Action to Be Taken: _____

_____

_____

_____

_____

Committee Representatives: _____

Bureau of Land Management Representatives: _____

Please make the required corrective action within the next 120 days. Please make a written report of corrective action taken and submit to the BLM. If you should have any questions, please call the BLM office.

ROBINSON BUTTE COMMUNICATIONS SITE MANAGEMENT PLAN

ROGUE RIVER-SISKIYOU NATIONAL FOREST
HIGH CASCADES RANGER DISTRICT
PROSPECT, OREGON

Submitted By: **/s/Kerwin Dewberry** **7/1/2010**
District Ranger Date

Approved By: **/s/Scott D. Conroy** **7/7/2010**
Forest Supervisor Date

Table of Contents

I. DEFINITIONS

Authorized Officer. The Forest Service employee with the delegated authority to issue and manage communications uses. The authorized officer is usually the District Ranger or Forest Supervisor of the unit on which the communications site is located.

Co-location. Installation of telecommunications equipment in or on an existing communications facility or other structure.

Communications Site. An area of National Forest System (NFS) lands designated as an electronic site through the Forest Land and Resource Management planning process for telecommunications uses. A communications site may be limited to a single communications facility, but most often encompasses more than one. Each site is identified by name, usually denoting a local prominent landmark, such as Bald Mountain Communications Site.

Customer. An individual, business, organization, or agency that is paying a facility owner or tenant for communications services and is not re-selling communications services to others. Private ("other communications use" category) and internal (private mobile radio service and non-commercial microwave categories) communications uses leasing space in a building and not re-selling communications services to others are considered customers for rental calculation purposes.

Facility. A building, tower, or other physical improvement (buildings and towers do not have to be combined to be considered a facility) that is built or installed to house and support authorized communications equipment.

Facility Manager. The holder of a Forest Service communications use authorization who (1) owns a communications facility on NFS lands, (2) rents space in or on their facility to other communication users, but (3) does not own or operate their own communications equipment and they do not directly provide communications services to third parties. Persons or entities that manage or administer a communications facility on NFS lands for a facility owner or a facility manager are not facility managers for purposes of this communications site plan.

Facility Owner. The holder of a Forest Service communications use authorization who (1) owns a communications facility on NFS lands, (2) may or may not be renting space or equipment to other communications users in or on their facility, and (3) owns and operates their own communications equipment in their facility.

Multiple-Use Facility. A communications site facility that has multiple communications uses operated directly by the facility owner or has customers or tenants in or on that facility.

Ranally Metro Area. Geographic areas in the United States identified by Rand McNally in its Commercial Atlas and Marketing Guide that define population centers of 50,000 or more. There are approximately 450 Ranally Metro Areas (RMAs) in the United States.

Senior Use. A communications use that predates another communications use. The most senior use or uses form the basis for the communications site designation.

Single-Use Facility. A communications site facility that contains only the single communications use of the facility owner and no tenants or customers in or on the facility.

Tenant. A communications user who rents space in a communications facility and operates communications equipment for the purpose of re-selling communications services to others for profit. Tenants may hold separate authorizations, without sub-tenancy rights, at the full schedule rent based on the category of use.

II. NARRATIVE

A. Site Description

Robinson Butte Communication Site is located on High Cascades Ranger District, Rogue River-Siskiyou National Forest, Jackson County, State of Oregon in NW1/4, SW1/4,Section 8, T. 37 S., R. 4 E., Willamette Meridian at approximately Latitude 42° 21' 52" North, Longitude 122° 22' 53" West. The elevation at Robinson Butte communications site is approximately 5855 feet above mean sea level (msl). The area for development is approximately 2 acres in size. Robinson Butte Communication Site is road accessible. The USDA Forest Service currently maintains a fire lookout on Robinson Butte.

This site serves Medford, Oregon Ranally Metro Area (RMA). The population is currently greater than 100,000 less than 300,000 and is therefore Zone 6. The population identified for this Zone is updated annually by the Forest Service, Washington Office, Director of Lands, and is used to determine the annual rental fee due the Forest Service.

The most senior use at this site is two-way radio and the site is designated as low power non-broadcast. This designation was established in the Robinson Butte Electronic Communication Site Environmental Assessment and Decision Notice approved on September 2, 1993. The decision was consistent with Rogue River-Siskiyou National Forest Land and Resource Management plan within prescriptions which allow electronic sites. The maximum power output for the Robinson Butte Communication Site is based on the maximum output allowed for two-way radio under the Federal Communications Commission's rules at Title 47, Code of Federal Regulations, Part 90.

This plan supersedes the Robinson Butte Electronic Site Plan approved September 2, 1993.

B. Existing Site Development

Robinson Butte was first developed as a fire detection location in 1933. In 1974, the lookout was replaced with the current 53' treated timber structure. The current tower structure provides space for commercial cellular and microwave antennas. Discourage future commercial use of Forest Service facilities.

Medford Cellular (ATT) was issued a permit (ASH413601) for cellular telephone on September 11, 1993.

US Cellular was issued a permit (ASH413701) for cellular telephone. The Forest Service lookout tower serves as the antenna support for US Cellular equipment.

See Appendix B for a current list of currently authorized facilities.

C. Objectives

The primary objectives of the Robinson Butte Communications Site Management Plan are to:

1. Document site management policy, procedures and standards, which are not already specified in the standard communication site lease.

2. Manage for primary use as fire detection facility. No uses shall visually or electronically interfere with fire lookout operations.

3. Manage for low power communications uses only. The maximum power output expressed as ERP is based on the maximum output allowed for two-way radio under the Federal Communications Commission's rules at Title 47, Code of Federal Regulations, Part 90. As of the 2003 regulation, that is 500 watts ERP. Each use must operate at or below the power level authorized by their respective FCC license as long as it does not exceed the site limitation.

4. No continuously transmitting uses are authorized at this site, excluding microwave.

5. All uses must be designed, operated and maintained so as not to physically or electronically interfere with the senior uses. If new used deteriorate the receiving/transmitting operation of existing uses, the new use uses may be required to institute at their expense; additional studies, equipment upgrades, frequency isolation, or physically separate themselves from the existing uses.

6. Present a program for operation within the site.

7. Help fulfill the public need for adequate communication sites.

8. Protect the interests of leaseholders and site users by preserving a safe and an electronically "clean" environment.

9. Encourage the efficient development and use of space and facilities within the designated site, subject to the USFS goal to provide the best possible public service at reasonable cost.

10. Authorize new Tenant and/or Customer uses that can physically and electronically be accommodated within existing buildings and/or towers.

11. Maintain visual resource objectives by requiring design standards that are unobtrusive and by utilizing earth tone colors and non-reflective surface material consistent with the standards in the Land and Resource Management Plan.

12. Amend this Communications Site Plan as necessary to be consistent with future Forest Resource Management Plan. The Forest Service will provide authorization holders with proposed amendments to this plan and will allow a reasonable period of time for the holders to review and comment on the proposed changes.

III. AUTHORITY AND JURISDICTION

A. Authority

Forest Service authority to authorize and manage communications uses on National Forest System lands derives from the Federal Land Policy and Management Act of 1976 (43 U.S. C. 1761-1771); Title 36, Code of Federal Regulations, part 251, subpart B (36 CFR 251, subpart B); Forest Service Manual (FSM) 2700; and Forest Service Handbook (FSH) 2709.11, chapter 90.

B. Jurisdiction

The Forest Service has jurisdiction over the use and occupancy of National Forest System (NFS) lands for communications purposes under the National Forest Management Act (NFMA) of 1976 (16 U.S.C. 1600 et seq.); the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.), and Title 36, Code of Federal Regulations, part 251, Subpart B (36 CFR part 251, subpart B).

The Federal Communications Commission (FCC) has jurisdiction over the use of non-Federal channels of radio and television transmission under licenses granted by the FCC. The National Telecommunications and Information Administration (NTIA) has jurisdiction over the use of Federal channels of radio transmission under authorizations granted by the NTIA.

The issuance of an FCC license or NTIA authorization does not authorize the use and occupancy of NFS lands. A Forest Service special use authorization is required for the use and occupancy of NFS lands for communications purposes.

The Forest Service has jurisdiction over resolution of conflicts associated with the use and occupancy of NFS lands, such as those involving location and re-radiation. The FCC and NTIA are not responsible for resolving occupancy conflicts associated with the use and occupancy of NFS lands or the resolution of other conflicts when entities are operating within the limits of their FCC license or NTIA authorization. However, the FCC or the NTIA may be useful in assisting in the resolution of interference problems or other frequency conflicts.

IV. RIGHTS AND RESPONSIBILITIES

A. The Forest Service

The Forest Service retains the responsibility for issuing and amending authorizing instruments to Facility Owners and Facility Managers for the authorized improvements. The issuance of a FCC license (authorization), or frequency assignment, does not authorize occupancy of National Forest system lands. Granting occupancy and use of National Forest system lands rest exclusively with the Forest Service. This includes:

1. Amend or modify this site plan as deemed appropriate.

2. Approve new facilities including those constructed within a lease holder's authorized area.

3. Approve assignment of a communications site lease.

B. Facility Owners and Facility Managers Are Responsible for:

1. Complying with the terms and conditions of their communications site authorization and this site plan.

2. Ensuring that all new facilities, expansions, or improvements are consistent with the Rogue River-Siskiyou National Forests Land and Resource Management Plan, environmental documentation and decisions affecting the use of this site, and the provisions of this site plan.

3. May rent building and tower space to tenants and customers without prior written approval from the Forest Service as long as that tenant or customer use is an approved communications use as designated in this site plan and does not interfere with other existing uses at the site.

4. May not place any unreasonable restrictions on potential or existing tenants and customers.

5. Ensuring that facilities and equipment not complying with Federal, State, and local laws, regulations, and ordinances will be removed or modified within one year of approval of this site plan. Modifications require the pre-approval of the authorized officer.

6. Keeping all facilities within the established limits of their authorized area. The Facility owner or manager may not, for itself or for any customer or tenant, authorize construction of any equipment shelter or tower, or manipulation of the site or vegetation in any way, without specific authorization from the Forest Service (See sec. VII).

7. Providing the authorized officer the name, address, and telephone number of a local contact. The facility owner or the facility manager and the local contact person may be the same individual. The local contact shall be available for emergencies and shall have the authority to make decisions about construction issues, facility maintenance, and all equipment within the facility.

8. Ensuring that all communications equipment in their facility is properly installed, operated, and maintained in accordance with ANSI, FCC, and Forest Service regulations, guidelines and standards concerning radiation limitations, including monitoring radiation levels at their facility and immediately correcting any radiation levels that are, or could be a hazard to human health.

9. Providing the authorized officer by October 15th of each year, a certified statement listing their type or types of communications uses they provide and the business names of all occupants and their type of communication use in the facility on September 30th of that year.

10. Treat and control noxious weeds as allowed for in the terms and conditions of the authorization on and adjacent to their permitted area, access, and parking areas. Treatment requirements and standards must be according to applicable regulations. Standards and application procedures may be obtained from the Forest Office.

C. Tenants and Customers:

May co-locate in an existing facility when their communications use is an approved use in the site plan. Co-location in a non-Federal communications facility does not require a Forest Service authorization. Tenants and customers who co-locate in a Federal facility shall first be issued a special use permit from the authorized officer before locating in that Federal facility.

V. USE OF THE SITE

A. Multiple-Use Facilities

Co-location, when practical, shall be required. Site applicants shall take the lead in this area and shall design their proposals to accommodate multiple uses of facilities and improvements. This includes the multiple-use of buildings, towers, solar generating

systems, back-up generators, grounding systems, fuel containers, access ways, and parking areas.

Due to the limited development space at the site, new facilities, or major modifications to existing facilities, shall be designed to accommodate additional users even if other users are, or could be, competitors.

Facility owners and facility managers are not required to lease facility space to others if they can demonstrate to the authorized officer that:

1. Space is not available;

2. The use is incompatible with the existing communications uses at the site. For example, the proposed use is not compatible with other uses as provided for in FSH 2709.11, section 97, exhibit 05;

3. Additional space is needed by the facility owner or the facility manager; or

4. Additional users would compromise security of the facility or communications systems located in that facility.

VI. RENTAL FEES

Unless specified differently in the communications site lease, the Forest Service shall charge facility owners and facility managers of non-Federal facilities and tenants and customers in Federal facilities an annual rental fee based on the fee schedule for communications uses on National Forest System lands contained in FSH 2709.11, section 95. The rental rates shall be adjusted annually using the Consumer Price Index-Urban (CPI-U), and the population figures are adjusted annually based on the most recent Rand McNally Commercial Atlas and Marking Guide (for RMAs) and Rand McNally Road Atlas for non-RMA communities.

Rental fees that facility owners and facility managers may charge their tenants and customers shall be:

1. Reasonable and commensurate with the use and occupancy of the facilities and services provide to tenants and customers; and

2. Consistent with other fees charged for similar facilities.

VII. CONDITIONS FOR NEW CONSTRUCTION AND MODIFICATION OR EXPANSION OF A FACILITY

A. New Construction, Modification, and Expansion Responsibilities

Construction space at the site is available. If new facilities are proposed or if existing facilities ever need modification, the following guidelines shall apply.

In addition to the responsibilities listed in Section IV, proponents, facility owners, and facility managers seeking to construct a new facility or modify or expand an existing facility are responsible for:

1. Submitting a complete application to the authorized officer prior to any new construction, modification, or expansion of a facility. The application shall include:

    a. A copy of the approved site plan base map showing all of the proposed new, modified, or expanded facilities, including structures, towers, and auxiliary equipment;

    b. Completed drawings or plans prepared by a professional engineer or architect;

    c. Identification of any proposed microwave beam paths, a plot of their azimuth, and their proposed elevation on the tower; and

    d. Documentation showing that the proposed facilities will not obstruct or interfere with any exiting uses, including fixed point-to-point antennas, omni-directional broadcast antennas, or microwave beam paths.

2. Demonstrating that the new facility will make the most efficient use of the limited amount of space at the site and will provide for future uses without additional construction.

3. Providing engineering and geotechnical investigations for development of specific foundation designs and grading plans.

4. Providing an erosion control plan prior to construction. At a minimum, the erosion control plan shall include sediment control, stipulations that cut and fill slopes will be graded and contoured to prevent erosion and excessive runoff, and recommendations for temporary erosion control measures, such as netting, silt fences, swales, sediment collection areas, and so forth.

5. Coordinating with other Federal and local governments and securing all pertinent permits and approvals from those agencies.

6. Providing 30-days notice to all facility owners and facility managers at the site, as well as the Forest Service, of all new frequencies, either for themselves or their tenants and customers, proposed for the site. A completed FS-2700-10 shall be sent with the 30-day notice to allow for comment of potential

interference. This would be for new frequencies for themselves and their tenants or customers.

B. Construction Methods and Resource Protection

Plans submitted by a proponent, facility owner, or a facility manager for construction, modification, or expansion of a facility shall provide for soil rehabilitation measures, including soil replacement and stabilization and proper handling of runoff from buildings, parking areas, access roads, and undeveloped common areas. The authorized officer must approve all cutting or trimming of vegetation.

During construction, modification, or expansion of facilities, facility owners and facility managers shall:

1. Identify, avoid, and protect sensitive resource areas identified by the Forest Service.

2. Comply with the erosion control plan.

3. Notify the Forest Service authorized officer prior to commencing any approved ground-disturbing activities.

4. During construction and/or maintenance, paintbrushes will not be cleaned off on rocks. No marks of any kind, including survey marks, will be permitted on rocks.

5. Minimize, to the greatest extent possible, ground disturbance and vegetation removal.

6. Re-vegetate extensive cut and fill slopes with native vegetation as soon as possible after construction. All re-vegetation must have prior written approval of the authorized officer.

7. Not cast off grading material. Excess soil can be used as fill material for roads, buildings and towers.

8. Obtain prior written approval of the authorized officer for temporary, on-site storage of construction materials.

9. Not leave hazardous materials, including fuels, oils, and lubricants unattended at the site at any time. Hazardous materials shall be removed from the site at the end of each workday or temporarily stored inside a locked and posted building until the following workday. Construction materials and supplies other than hazardous materials may be left unattended at the construction site at the end of each workday at the owner's risk.

10. Remove surplus construction materials and waste debris from the site no later than 30 days after construction has been completed.

11. To prevent the spread of noxious weeds into the area, power wash off any earth-moving or heavy equipment, such as dozers, graders, cranes, backhoes, and so forth before it is brought onto National Forest System lands.

C. Construction Inspection

1. All new construction, modification, and expansion of facilities shall conform to established technical standards and accepted engineering practices, such as the Uniform Building Code.

2. Any construction inspections required by other agencies are the responsibility of the holder. Copies of completed inspections shall be provided to the Authorized Officer, either as they occur or as part of the final as-built plan. Inspection information shall become a permanent part of the holder's special-use file.

3. Corrective work required as a result of Forest Service or other agency inspections shall be completed by the date specified in the inspection report to the satisfaction of the inspecting official.

4. A final set of as-built plans shall be submitted to the Authorized Officer within 90 days of acceptance of a structure (if the construction was contracted) or of its completion date (if the construction was not contracted).

D. New or Remodeled or Expanded Buildings

1. Any new buildings shall be designed to accommodate multiple users and shall be consistent with a site-specific environmental analysis conducted at the time of the proposal.

2. Buildings shall be one-story and have a flat roof unless specifically authorized. The roof shall be non-reflective metal or other non-reflective fire resistant material approved by the Forest Service. Building height will be restricted to a single story unless specifically authorized for two stories or with a snow vestibule. Roofs can be equipped with antenna support structures, such as poles and railings that can extend up to 25 feet above ground level.

3. Facility owners and facility managers are encouraged to construct the interior of their buildings in a modular fashion, so that they can:

    a. Sublease sections to others;

    b. Provide tenants and customers with internal separation and security;

c. Reduce physical interference; and

d. Increase management effectiveness.

4. The following materials are approved for construction of new buildings:

a. Floors: Concrete slab with drainage or as part of a non-flammable pre-fabricated structure.

b. Walls: Concrete block, metal, or pre-fabricated concrete.

c. Roofs: Concrete, metal (if painted to eliminate shiny surfaces), or other fireproof material approved by the Forest Service. Proposals for wooden roofs will not be approved.

d. Partitions: Fire resistant material, such as reinforced concrete or properly grounded expanded metal.

e. Color: Color used on all exterior building surfaces must have prior written approval of the authorized officer. The goal of color selection is to make buildings as inconspicuous as possible when viewed from a distance. The intent is to reduce or eliminate glare from reflective and/or illuminated surfaces such as windowpanes, sheeting and reflective paints. Non-reflective, Forest Service approved dark gray to green colors shall be used on equipment buildings.

Building entry lights must:

a. Only light the immediate area in the vicinity of the door;

b. Be motion-activated and have a limited time duration of 3 to 5 minutes; and

c. Have a shielded beam that is pointed at the building door.

Requests for all-night (dusk-to-dawn) lighting or entry lighting that would be visible from outside the site will not be approved.

E. New or Remodeled/Expanded Towers

1. All construction, modification, and expansion of towers shall have the prior written approval of the authorized officer.

2. It is the applicant and holder's responsibility to ensure that new, modified, or expanded towers will not unduly interfere electronically or physically with any existing equipment at the site. Towers shall be spaced so as to prevent ground level radiation and interference problems. Compliance with these

requirements shall be demonstrated in writing to the authorized officer prior to issuance of a lease, permit, or amendment.

3. All new towers shall comply with current structural and safety specifications and design standards, including safety-climbing devices. Towers should be as narrow and "open" as safety and structural integrity allow. New towers should be designed using maximum wind, snow, and tower loading anticipated for the site.

4. All new towers (including antennas) shall not exceed 80 feet. All new towers shall be self-supporting unless specifically authorized.

5. To avoid possible impacts to birds or bats, follow the most current version of the U.S. Fish & Wildlife Service's Interim Guidelines on the Siting, Construction, Operation and Decommissioning of Communication Towers (available at http://migratorybirds.fws.gov/issues/towers/comtow.html).

6. All towers shall be left unpainted if they are made of dull, galvanized steel. Paint is required only if the tower has a shiny or reflective surface. Non-reflective, Forest Service approved dark gray to green colors will be approved unless the FAA requires red and white tower striping.

7. No lights, beacons, or strobes shall be allowed on new towers unless specifically required by the FCC/FAA.

VIII. GENERAL OPERATION AND MAINTENANCE

A. Special Environmental and/or Biological Considerations

There are no unique environmental or resource coordination requirements at this site. If issues arise in the future, this plan will be amended in accordance with the applicable decision or direction.

B. Wiring and Grounding

1. All equipment shall be installed in metal cabinets or open frame equipment racks that are grounded and shielded. Grounding is to be installed in accordance with manufacturer's recommendations and accepted industry standards.

2. All electrical wiring and grounding shall meet the National Electrical Code and applicable State codes. All permanent wiring shall be installed in metallic conduit. Surge protection shall be installed on all power distribution panels.

3. Every effort shall be made to protect the equipment from lightning damage. Lightning protectors should be used on all coaxial cable connections to

equipment enclosures. Gas gap and MOV protectors should be used on all control, audio, and power lines.

4. Each building shall have its own separate grounding system for all users in that structure. Wherever practical, interconnection of individual grids and/or the simultaneous placement of large sized copper ground wire with any new grounding systems that are buried on the site shall be encouraged.

5. Grounding shall be installed in accordance with accepted practices and standards, such as Motorola specification R-56 and the NEC. Grounding using bentonitic clays is currently the only approved method for chemical grounding. Other types of chemical grounding shall require completion of NEPA documentation by the applicant prior to consideration for approval by the authorized officer.

C . Communications Equipment

1. Equipment Ownership

   All equipment shall be labeled with:

   a. The owner's name;

   b. Applicable transmitter frequencies;

   c. The applicable FCC license or NTIA authorization;

   d. Transmitting power outputs; and

   e. A current 24-hour telephone contact number.

2. Transmitting Equipment

   All transmitters shall have protective devices built into them or externally installed to prevent interference with other uses. All transmitters shall meet FCC licensing requirements.

   The re-radiation of intercepted signals from any unprotected transmitter and its associated antenna system shall be prevented by the use of appropriate filters, typically bandpass filters, circulators, and/or harmonic filters.

   The direct radiation of out-of-band emissions (noise or spurious harmonics) shall be reduced to a level such that it may not be identified as a source of interference as defined in FCC Regulations (47 CFR 90.209(e)). If site noise (electromagnetic noise) becomes an issue, noise threshold limits shall be established, and amended into the Site Plan.

All transmitters not in immediate use and not specifically designated as standby equipment shall be removed. Loads connected to circulators shall be capable of dissipating the total power output of the transmitter.

3. Receiving Equipment

A bandpass device, such as a cavity or crystal filter, is recommended at the input of all receiving devices. Cavity filters or other protective devices may be used at receiver inputs to reduce interference.

Where duplexing is used, a notch-type device should be avoided. In situations where a notch-type device is used, a bandpass filter shall be used on both the receiver and transmitter.

4. Antennas

a. Microwave (dish) antennas and other than ground-mounted satellite dishes shall not exceed 10 feet in diameter.

b. All antennas shall meet all OSHA safety standards. If an antenna is operating in excess of FCC public or occupations standards, steps will be taken, such as fencing, posting of signs, relocation, lowering power levels, within 24 hours to bring it into compliance. Ground measurements of RFR levels will be taken before mitigation measures are implemented.

c. Colors for dish antennas or covers shall be pre-approved by the authorized officer. White dish antennas and covers will not be approved. Existing white dishes and covers shall be repainted or replaced as repairs or replacement become necessary.

d. Antennas shall be treated to reduce or eliminate reflected glare.

e. Low-powered transmit and receive antennas may be located low on the tower or on the ground.

5. Interference

The responsibility for correcting interference problems lies with the holder of the communications site authorization for the facility, the user causing the interference, and the affected parties. Generally, the first users at a site have seniority with respect to resolution of interference complaints. Senior users have an obligation to maintain their equipment to industry standards, to operate their systems in accordance with the terms of both the FCC license and NTIA/IRAC frequency authorization, and to comply with the Forest Service communications site authorization. New users at a site shall correct, at their expense, interference problems that they create. They shall cease

operation of the suspect equipment until the problem is corrected. If interference problems cannot be resolved or corrected within a reasonable time, the new use that is causing the interference may be terminated and the equipment removed.

If a Site Users Association is formed, all users shall cooperate with the Forest Service in the identification and correction of any interference. The Forest Service does not have any responsibility for correcting interference problems, but can act as a mediator to help all affected parties. Interference problems should be coordinated with the FCC or NTIA, as appropriate.

Interference with law enforcement and emergency communications shall be corrected immediately. Operation of equipment covered by this site plan shall not interfere with Federal Government radio or electronic operations already in existence on National Forest System lands within two miles of the Robinson Butte Communications Site. The user causing this interference shall at their own expense take all actions necessary to prevent or eliminate the interference. If they do not eliminate the interference within ten days after receipt of notice from the Forest Service to do so, their use will be terminated.

If electromagnetic noise becomes an issue, noise thresholds shall be established and incorporated as an amendment to this site plan. The cost of such analysis is the responsibility of the lease holders.

D. Cables and Transmission Lines

All new cabling shall be jacketed and shielded and shall either be flexible or semi-rigid. Existing substandard cables shall be upgraded as repairs or replacement become necessary. Cables shall be properly installed, strapped, and fastened down. Cable runs should be consistent with applicable engineering standards when attaching cables onto a tower.

All transmission lines (wave guides) shall be supported in accordance with manufacturer's specifications. Unjacketed transmission lines or unjacketed cables of any type are prohibited. No transmission lines shall be left unterminated.

Double-shielded braided or solid-shielded cable shall be used. No RG-8 cable is permitted. No connector-type adapters shall be used on transmission lines. Only correct connectors that will mate to connected devices may be used.

Conduits shall be shared when they service common areas and shall be buried where possible.

E. Radiation

All communications uses shall meet ANSI, FCC, and Forest Service regulations, policy, guidelines, and standards concerning radiation limitations.

Monitoring radiation levels at the site is the responsibility of all site users and shall occur at intervals to comply with FCC regulations and guidelines. A copy of the monitoring report shall be provided to the Forest Service within 30 days of its completion.

Onsite RFR measurements shall be taken using appropriate equipment that can adequately measure levels both on the tower and on the ground before mitigation measures related to RFR are implemented.

Security fences with RFR notice signs are required around areas that exceed public use levels. All fencing location and design shall be pre-approved by the Forest Service.

Warning signs shall be in English and Spanish and comply with ANSI C95.2 color, symbol, and content conventions. Contact information, including name and telephone number will also be included on warning signs.

Any identified RFR problems that are, or could be, a human health hazard shall be corrected within 24 hours after measurement tests have been completed, or the equipment involved shall be removed from the site by the site user. Any ground disturbance associated with correction of RFR problems or removal of equipment causing the problem must have prior written approval of the authorized officer.

F. Utilities

Site users shall pay for the cost to install and maintain utilities, including any resource surveys and reports needed for environmental compliance. For visual reasons, new overhead utility poles are not authorized.

1. Commercial Electrical Power

   Commercial power is provided to this site by Pacific Power.

2. Telephone Service

   Commercial telephone lines do not service this site.

3. Fuel Storage

   Fuel storage facilities on this site must be designed, installed and maintained according to applicable federal, State and local laws and ordinances.

If additional service is ever deemed necessary, a separate authorization will be issued to the owner of the service following the appropriate NEPA analysis and decision. The applicant must pay the cost of necessary resource surveys, and reports and construction costs including appropriate mitigation. For visual reason, overhead utility lines may not be authorized.

G. Sanitary Facilities

Sanitation facilities exist at this site. If needed, any new sanitary facilities shall be pre-approved by the Forest Service. If it is determined by the authorized officer that the user needs such facilities, they will be provided by the applicant/holder in a manner and location satisfactory to the authorized officer and requirements of the local health department.

H. Security and Law Enforcement

The Oregon State Police and Jackson County Sheriffs Department are the principal law enforcement agencies for the area in which the Robinson Butte Communications Site is located. Generally, the State Police and County Sheriffs are responsible for civil and criminal law enforcement. Generally, the Forest Service is responsible for enforcing Federal laws applicable to NFS lands, such as resource protection. Patrol and policing for security purposes is the holder's responsibility.

None of the facilities at Robinson Butte Communication Site are fenced. If additional fencing is ever deemed necessary for security purposes at other facilities on the site, it must meet the following criteria:

1. All fences must meet health and safety requirements.
2. All fence locations and design require Forest Service pre-approval.
3. The standard fencing type will be chain-link (i.e. cyclone).
4. The standard fence height will be eight (8) feet.
5. Fencing will be designed, maintained, and of a type to minimize interference issues.
6. Fences will be signed with RFR notices if RFR is above public levels.

Buildings shall be posted with a 24-hour contact phone number(s) on the main door(s) into the building where appropriate.

I. Site Maintenance

The objectives of site maintenance are to present a clean, neat, and orderly appearance at the site and to have all the authorized improvements at the site be safe for workers and the public. All users are responsible for maintaining the overall appearance of the site.

Miscellaneous debris remaining after any construction or installation, removal or modification of equipment is not only a hazard but can cause interference or intermodulation problems. All loose debris must be removed from the site within 30

days after completing construction, reconstruction, or other activities. In particular, all loose wire or metal objects shall be removed from the site. The users of the site shall remove graffiti within ten working days of finding it. If graffiti is on natural features, such as rocks and trees, site users will remove graffiti a method approved by the authorized officer.

Holders may not leave or dispose of trash, garbage, or cut brush on NFS lands. No outside trash or litter containers are allowed. Site users shall remove all trash and litter from the site as it is produced. Policing of litter in common areas, such as the areas between buildings and developed sites, is the shared responsibility of those holders bordering these areas.

Peeling paint on buildings and towers shall be re-painted within thirty days of discovery or as soon as possible as allowed by weather conditions.

J. Inspections

Unless waived in writing by the authorized officer, the holder shall have conducted annually a certified inspection of the facilities and equipment covered by the authorization. The inspection shall include a technical review that should ensure that all authorized equipment is operating in accordance with requirement of the this site plan, the applicable FCC license or NTIA authorization, ANSI standards, and the manufacturer's specifications. In addition, the inspection should ensure that the authorized equipment is secure, free of rust, properly grounded, and otherwise properly operated and maintained. A copy of the inspection report, certified by a telecommunication specialist, shall be provided to the authorized officer within 30 days of completion of the inspection. The Forest Service may also conduct periodic reviews to monitor for authorization compliance.

K. Fire Prevention and Hazard Reduction Requirements

Facility owners and facility managers will be required to control vegetation within the fenced or immediate area around their facilities. Gravel / mineral soil (i.e. bare ground, mowed vegetation) must be maintained to a minimum of (10) feet clearance around buildings and a minimum of (10) feet clearance around any propane tanks. Identified threatened, endangered, or sensitive plant species must remain within the minimum clearance areas.

Smoking is prohibited in flammable vegetation areas.

Roof structures shall be kept reasonably clear of debris at all times.

No explosives will be stored at this site. Flammable materials shall be stored in conformance with the requirements of local fire regulations. Flammables will be placed in closed containers and stored away from sources of ignition and combustible materials.

If flammables are stored within a building, the building will be locked, properly signed and well ventilated.

Approved spark arresters will be required and maintained on all internal combustion engines.

At least one (1) U.L. rated 20 lb. A:B:C dry chemical fire extinguisher is required inside each building. Prior to each June, fire extinguisher(s) shall be inspected by holders and refilled, if necessary.

Any fire will be immediately reported to "911", the nearest Forest Service office and/or Jackson County Sheriff.

Forest Service Officers will make periodic fire prevention inspections. They will call to the holder's attention any lack of compliance with the above regulations, plus any other existing hazards. Compliance with these inspections is required within the time limits specified in the inspection report.

All fire protection standards must be accomplished by the beginning of fire season unless otherwise agreed to, and then maintained throughout the fire season.

For new construction, the Forest Service will provide the Holder with a separate Construction Fire Plan which will be prepared at that time as applicable. State and local laws/regulations must be followed for the diesel tank installation.

L. Access

1. Road

   Holders who damage the access road, or any of its associated improvements, such as ditches, culverts, roadside vegetation, signs, and underground utilities and facilities, shall be required to repair the road to conditions equal to or superior to those prior to any damage or disturbance.

   Access to Robinson Butte Communication Site is from the junction of Forest Road 37 and Forest Road 3730 near Big Elk Guard Station. From the junction of Forest Road 37 and Forest Road 3730, go north on Forest Road 37 for approximately 0.2 miles; turn left onto access road and go approximately 1.1 miles; go through locked gate go another 0.8 miles to Robinson Butte Communication Site. The Robinson Butte Communication Site is located approximately 25 air miles east of Medford, Oregon and driving time is approximately 1 hour.

2. Internal Roads and Parking Areas

Internal roads and parking areas within the communications site are the responsibility of the site users. Interior roads and parking areas shall be planned and approved by the authorized officer in conjunction with establishment of new facilities. Interior roads shall be maintained so as to allow only one entrance to the site. The intent is to discourage off-road vehicle use in and around the site.

3. Road Closures

Forest Service roads are subject to periodic closures to entry during periods of extreme fire danger, inclement weather, or wetness. Site users may access the site during these closures if they have prior, written approval from the authorized officer.

IX. SITE ASSOCIATION AND ADVISORY GROUP

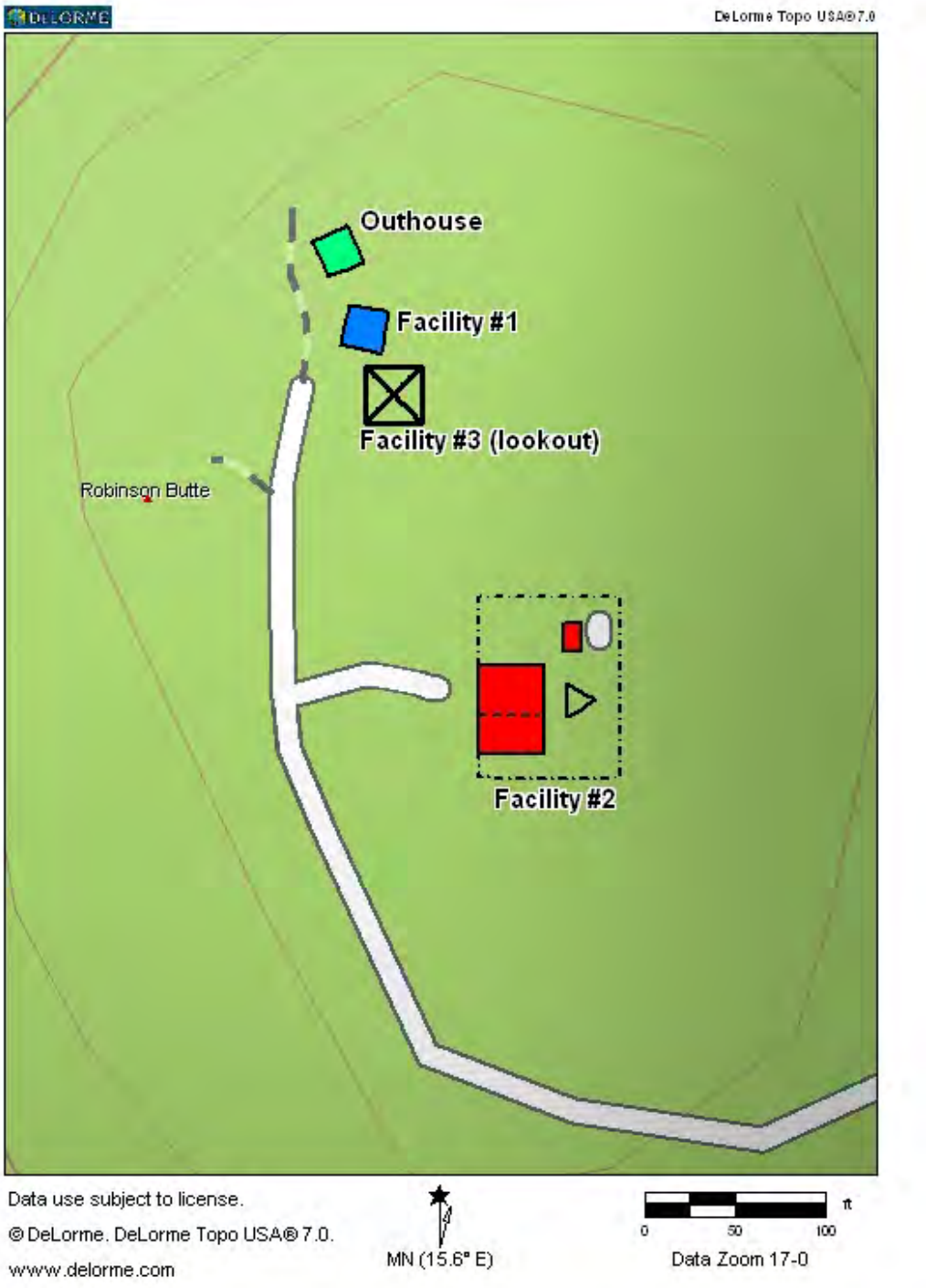
A site association is probably not needed at this time. If development were to increase, a users association may become desirable. Leadership would need to come from one of the users. As needed in the future, the site association would be responsible for obtaining and maintenance of an administrative access and upkeep of internal roads and parking areas. The site association would also be responsible for ensuring cooperation between users for on-tower access. A site safety officer would be identified within the site association. The site association would be expected to develop a Radio Frequency Radiation Plan/Agreement and recommend measures to reduce interference issues (e.g., through use of filters).

The goal of the site association would also be to maximize the effective use of the site. The objective of a sanctioned association will be to represent all site users as a group when dealing with the Forest Service on matters relating to the site administration. The association would be able to work in cooperation with the Forest Service to identify problems or opportunities and make recommendations to the Forest Service for any changes in management strategies at the site. The association could also provide input to the Forest Service regarding the future addition of equipment and facilities at the site. While the advice and recommendations of the association would not be binding on the Forest Service, the Forest Service could use the input for administration of the site. The Forest Service would be a member of such a group and would help jointly develop the charter (i.e., the ground rules).

X. APPENDICIES

APPENDIX A – Location Map

Site Map


DeLorme Topo USA®7.0
Outhouse
Facility #1
Facility #3 (lookout)
Robinson Butte
Facility #2
Data use subject to license.
© DeLorme. DeLorme Topo USA® 7.0.
www.delorme.com
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Data Zoom 17-0

APPENDIX B – Authorized Facilities

	Auth #	Use	Building	Tower	Other
Facility #1 US Cellular	**ASH413701**	**CEL**	**10’ x 12’ Aggregate**	**Om FS Lookout tower**	
Facility #2 Medford Cellular (dba ATT Wireless)	**ASH413601**	**CEL**	**12’ x 26’ Aggregate**	**80’ Lattice**	**Fence 50’ x 50’**
Facility #3 USDA Forest Service Lookout Tower	**N/A**	**PMRS**		**50’ Lookout Tower**	**Outhouse**

APPENDIX C – Facility Photographs

Facility 1 – US Cellular

Facility 2 – Medford Cellular (ATT)

Facility 3 – Forest Service Lookout Tower

Facility 3 – Forest Service Outhouse

APPENDIX D – Inspection Checklist

"Robinson Butte Annual Technical Inspection"

Date Inspected: _____ Time Inspection: _____

Permit Holder: _____ Authorization # _____

Site Technician : _____ Phone # _____

Number of Transmitters _____ License Posted _____

Please mark the following Items as Acceptable (A) or Unacceptable (U).

Electrical Wiring ---------- (A) (U) Grounding ---------- (A) (U)

Equipment Installation ---------- (A) (U) Housekeeping ---------- (A) (U)

Building Repair ---------- (A) (U) Tower Repair ---------- (A) (U)

Please mark the following Items as Yes (Y) or NO (N) or (NA)

Isolators ---------- (Y) (N) (NA) Circulators ---------- (Y) (N) (NA)

Cavities ---------- (Y) (N) (NA) Terminators ---------- (Y) (N) (NA)

Filters ---------- (Y) (N) (NA) Lightning Protection ---------- (Y) (N) (NA)

Comments:

_____

_____

Recommended Corrective Action:

_____

_____

_____

Required Corrective Action To Be Taken:

_____

_____

_____

Committee Representatives:

_____

Forest Service Representatives:

_____

Please make the required corrective action within the next 120 days.
Please make a written report of corrective action taken and submit to the FS.. If you should have any questions, please call the Forest Service office.

Department of the Interior
Bureau of Land Management

SIGNAL TREE COMMUNICATIONS SITE MANAGEMENT PLAN

Prepared by the Bureau of Land Management
Coos Bay District Office, Oregon

Approved by: Kathy Hoffine — **Field Manager**

1/05/2011 — **Date**

SIGNAL TREE COMMUNICATIONS SITE MANAGEMENT PLAN

I. INTRODUCTION

Demand for new communication sites continues to be active in the United States including carrier requests to locate cellular facilities on public lands in the western states. This demand is due to advances in communication technology, strong consumer interest, and a 1983 Federal Communication Commission (FCC) decree establishing wireless carrier coverage requirements.

Signal Tree is an established communication site with characteristics desired by government agencies, wireless carriers, microwave relay, and other communication providers. The communication site overlooks small communities and a rural but growing population area along State Route 42 between Roseburg and Coos Bay.

This Communication Site Management Plan has been developed to document and evaluate the existing communication site and facilities located on Signal Tree. The plan also provides an outline for orderly future development of the site in conformance with the Coos Bay District Office's current land use planning document, the Coos Bay Resource Management Plan (RMP).

Current BLM program guidance for resource management planning specifies that every planning document shall contain determinations relevant to communication sites. The Coos Bay RMP, approved in 1994 addresses this land use under General Objectives Chapter 2-88 and on Map 2-11. Therefore, in order to supplement the land use planning document, this site management plan has been prepared to address specific issues encountered on Signal Tree.

Approved lessees or right-of-way (ROW) holders with facilities currently located on Signal Tree are shown in the Users' Table, Appendix B. Additional tenants or customers may be accommodated within the confines of existing authorized communication facilities as long as such additions are in compliance with the terms and conditions of authorized leases or ROW grants and with the supplemental direction contained in this site plan. Requests for new communication site facilities may be authorized at the discretion of the Bureau of Land Management (BLM) Authorized Officer through the issuance of new Communications Use Leases, or in some cases, by the issuance of additional ROW grants.

This site plan will be incorporated into all future new leases issued for the Signal Tree Communication Site. This plan will also be included as a part of all existing leases and renewed leases or ROW grants as the terms of those authorizations allow. Provisions of the site plan are enforced through the terms and conditions of the ROW or lease authorization. Each lessee is expected to incorporate mandatory BLM lease and site plan requirements into any subsequent agreements with the lessee's tenants and customers. The lessee is also responsible for enforcement of said requirements involving the lessee's tenants and customers.

A. Terms and Definitions

The terms used in this communications site management plan conform to the definitions listed in the April 22, 2005, Federal Register notice "Rights-of-Way, Principles and Procedures: Rights-

of-Way under the Federal Land Policy and Management Act and the Mineral Leasing Act", with further clarification provided in BLM Handbook 2860-1 and the United States Code of Federal Regulations (CFR) 43 CFR 2800. In the event of a conflict, between the plan and these sources, the Federal Register notice and the BLM Handbook will govern.

The words "lease" and "lessee" as used in this plan refer to the relationship between the BLM and the communications use lease lessee, or ROW holder. The words "customer" and "tenant" refer to the relationship between the lessee or holder and the occupants in the lessee's facilities.

LEASE OR ROW – A use authorization issued to a communication Facility Owner or Facility Manager allowing for the use of public land to construct and or operate a communications facility and, unless specifically prohibited, to sublease to occupants in that facility.

LESSEE, LEASE HOLDER, OR ROW HOLDER – A Facility Owner or Facility Manager

CUSTOMER – A facility occupant who is paying a facility manager, facility owner, or tenant for using all or any part of the space in the facility, or for communication services, and is not selling communication services or broadcasting to others.

TENANT – A facility occupant who is paying a facility manager, facility owner, or other entity for occupying and using all or part of a facility. A tenant operates communication equipment in the facility for profit by broadcasting to others or selling communication services.

COMMUNICATIONS SITE – An area of BLM-managed public land designated through the land and resource management planning process as being used or is suitable for communications uses. A communications site may be limited to a single communications facility, but most often encompasses more than one. Each site is identified by name; usually a local prominent landmark, such as Signal Tree Communications Site.

FACILITY – The building, tower, and related incidental structures or improvements authorized under the terms of the grant or lease.

FACILITY MANAGER – The holder of a BLM communications use authorization who leases space for other communication users. A facility manager does not own or operate communications equipment in the facility for personal or commercial purposes.

FACILITY OWNER – Individuals, commercial entities, organizations, or agencies, that own a communications facility on Federal land; own and operate their own communications equipment; and hold a communications use authorization. Facility owners may or may not lease space in the facility to other communications users.

NON-BROADCAST – This category includes Commercial Mobile Radio Service (CMRS), Facility Managers, Cellular Telephone, Private Mobile Radio Service (PMRS), Microwave, Local Exchange Network, and Passive Reflector.

BROADCAST – This category includes Television Broadcast, AM and FM Radio Broadcast, Cable Television, Broadcast Translator, Low Power Television, and Low Power FM Radio.

RIGHT-OF-WAY (ROW) – The public land authorized to be used or occupied pursuant to a ROW grant.

RIGHT-OF-WAY GRANT – A use authorization issued pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701 *et seq.*), or issued on or before October 21, 1976, pursuant to then existing statutory authority, authorizing the use of a ROW over, upon, under or through public land for construction, operation, maintenance and termination of a project.

HOLDER – Any applicant who has received a ROW grant, lease or temporary use permit.

USERS – All ROW and lease holders, lessees, customers, and tenants that own or operate a facility or communication equipment at the communication site.

SENIOR USE – Any use whose implementation date is prior to the implementation date of the use in question.

RANALLY METRO AREA (RMA) – A series of nine population zone areas, the highest of which is greater than 5 million and the lowest being 25,000 or less. These zones are determined annually and published in the Ranally Metro Area Population Ranking, an independent publication from Rand McNally, and are used in rent determination under guidelines established in 43 CFR 2806.

B. Purpose

This plan will be used by BLM officials administering communications uses at Signal Tree, existing lessees, holders, and applicants desiring a lease, grant, or an amendment to an existing lease or ROW grant. The plan will be kept updated by amending pages or sections of the plan rather than issuing a revised edition of the plan. When an administrative revision is necessary (such as the addition of a user), a letter will be sent to the holders from the Coos Bay District Office enclosing a copy of revised pages or sections. The amendments will be consecutively numbered. Other proposed revisions to the plan will be circulated to holders for comment prior to implementation.

Overall management direction for the administration of communications sites is outlined in the CFR and the BLM Handbook and applicable BLM Instructional Memoranda. Specific direction for site management planning on designated communications sites is contained in BLM Handbook 2860-1. Primary regulations and policy pertaining to issuance of ROW authorizations by the BLM are found in Title 43 CFR Sections 2801- 2808 and BLM Handbook 2860-1.

This Site Management Plan provides applicable guidance and adds current policy and technical standards for better management of the Signal Tree Communications Site. This plan governs development and management of Signal Tree and will be modified in the future as needs and conditions warrant. Any future such uses must be designed, installed, operated, and maintained to be compatible and not interfere with the senior uses as defined in Section A above. This site-specific plan is administrative in nature and is Categorically Excluded from further review under the National Environmental Policy Act (NEPA) in accordance with 516.DM 2, Appendix 1, item 1.10, which states " – Policies, directives, regulations, and guidelines that are of an

administrative, financial, legal, technical, or procedural in nature and whose environmental effects are too broad, speculative, or conjectural to lend themselves to meaningful analysis and will later be subject to the NEPA process, either collectively or case-by-case". Any additional development of Signal Tree will be addressed in a site-specific NEPA document.

C. Site Description

The site is located approximately 50 miles southeast of Coos Bay, Oregon and approximately 18 miles west of I-5. It is on Signal Tree also known as Kenyon Mountain, a prominent landmark in the area. The area is managed by the Coos Bay District Office. It is specifically located in the SW¼ of sec. 33, T. 29 S., R. 9 W., Willamette Meridian, Coos County, Oregon at approximately 43º 0' 7.2" North Latitude and 123º 46' 43.3" West Longitude. The elevation at the Signal Tree Communications Site is approximately 3287 feet above mean sea level. A site map is provided as Appendix A.

D. Area Served

This site does not serve a Ranally Metro Area (RMA). The largest population zone served is less than 25,000. This zone may be adjusted in the future as populations change. This information will be used for rental fee determination.

E. Access

From the intersection of Highway 42 just west of Camas valley and Signal Tree road BLM 29-9-36.0 then north and west to the top of the ridge taking BLM 29-9-33.4 to the site from the saddle to the west. The site is approximately 5.66 miles to the saddle and then 0.33 miles to the site.

F. Site History and Development

There are currently thirteen communications facilities at Signal Tree. In the summer of 1961, the Fire Lookout was constructed on the site by the Coos Fire Protection Association and Oregon Department of Forestry. Government radio technology was added over the years including the Coos Bay, ORORO 008651, and Roseburg BLM radio repeaters. Additional facilities were authorized as follows:

In 1961, Pacific Northwest Bell Company was authorized a microwave relay facility at this site under ORORO 054613. This facility was sold to Ramcell in 1998.

Bonneville Power Administration was authorized a facility for microwave relay in 1960 under ORORE 0 006988.

Whitaker Trucking, ORORO 008113, was authorized a facility in 1972 for their two-way radio use and this facility has expanded to include other personal mobile and commercial wireless uses.

Oregon Department of Transportation, ORORO 034997, and Oregon Public Broadcasting, ORORO 034997A were authorized a facility at Signal Tree for two-way radio and microwave relay respectively.

AT&T longline OROR 042214, was authorized a microwave relay facility in 1987 and sold this facility to American Tower, Inc in 2002.

Eugene TV, KVAL Retlaw Enterprises, Inc., OROR 040875, was authorized a microwave relay facility in 1987. This facility also houses other inter-city microwave relay uses in addition to commercial wireless uses.

California-Oregon Broadcasting, Inc, was authorized a facility in 1988 for inter-city microwave relay.

Oregon Department of Forestry, OROR 046988, was authorized in 1991. The Oregon-Wing Civil Air Patrol holds a separate authorization, OROR 049266 in this facility dated 1993. Coos Forest Protection Association also holds a separate authorization, OROR 063498 issued in 2006 in this facility.

US Cellular, OROR 052018, was authorized a facility in 1995.

A list of all authorized facilities as of the date of this plan can be found in Appendix B. Any modifications to existing facilities or proposals for new facilities must be approved by the Coos Bay District Office according to the appropriate NEPA process and guidance described in this document.

The site currently appears to be relatively free of interference, receiver sensitivity, and noise. If additional new uses deteriorate the receiving/transmitting operation of the existing uses, the new uses may be required to institute additional studies, equipment upgrades, frequency isolation, or physically separate from the existing uses.

G. Goals and Objectives of Site Management Plan

1. Manage the Signal Tree site for low-power uses including two-way radio, microwave, cellular, and ISP. All uses must be designed, operated and maintained so as not to physically or electronically interfere with the senior uses. The maximum power output expressed as effective radiated power (ERP) for the Signal Tree Communications Site is based on the maximum output allowed for two-way radio under the FCC's rules at Title 47, Code of Federal Regulations, Part 90. As of the 2003 regulation, that is 500 watts ERP. Each use must operate at or below the power level authorized by their respective FCC license as long as it does not exceed the site limitation. This power limitation does not preclude existing and new uses from being designed, operated and maintained to meet other interference, noise floor, receive sensitivity, or radio frequency radiation (RFR) standards included in this plan. No continuously transmitting uses are authorized at this site, excluding microwave and radio control channels.

2. Manage communication equipment on the Signal Tree site to maintain the radio frequency (RF) hazard to be within the Public Standard as defined by the FCC.

3. Systematically develop the site to maximize the number of compatible uses while ensuring safety and protection of resources. Development of new towers or buildings within each of the authorized owner's facilities will be authorized only after their respective tower or building space area is filled to near capacity.

4. Help fulfill the public need for adequate communications sites.

5. Protect the interests of holders, lessees, tenants and customers, by preserving a safe and electronically "clean" environment.

6. Encourage the efficient development and use of space and facilities within the designated site.

7. Achieve visual quality objectives by requiring design standards that are unobtrusive and utilizing earth tone colors and non-reflective surface material and stringent site maintenance requirements.

8. Describe the BLM's policy for maintenance of the road to the Signal Tree communications site.

9. Develop new facilities only after the appropriate site-specific NEPA analysis and coordination with current lease or ROW holders and users.

10. Amend this Communications Site Plan as necessary to be consistent with future RMPs. BLM will provide authorization holders with proposed amendments to this plan and will allow a reasonable period of time for the holders to review and comment on the proposed changes.

II. AUTHORITY AND DIRECTION

A. Authority

The authority used by BLM to authorize communications uses on public land (administered by the BLM) is the Federal Land Policy and Management Act of 1976, 90 Stat. 2776 (43 U.S. C. 1761-1771) and is reflected in Title 43, Code of Federal Regulations (CFR), Sections 2801- 2808 and various BLM Washington Office Information Bulletins and Instruction Memoranda.

BLM authority for communications site management planning is contained in BLM Handbook 2801-1, Plan of Development. Direction on and policy for communication use authorizations is contained in BLM Manual Section 2860.

Authority for the issuance of authorizations and/or licenses for the transmission and reception of electronic radiation for communication purposes is granted by Congress and administered by the FCC and/or the National Telecommunication and Information Administration – Interagency Radio Advisory Committee (NTIA/IRAC).

B. Relationship to Communications Site Leases/ROW Grants

This site plan will be incorporated into all leases and ROW grants issued (now and/or in the future) for this communications site and must be used in conjunction with the granting authorization. **PROVISIONS OF THIS SITE PLAN ARE ENFORCED THROUGH THE GRANTING AUTHORIZATION (LEASE OR ROW GRANT).** Each lessee or holder is expected to include the requirements of the authorization and this site plan into any documents,

which describe the business relationship between the lessee and their tenants and customers. The lessee or holder is responsible for enforcing those provisions.

III. GENERAL RESPONSIBILITIES

A. The Bureau of Land Management

The BLM retains the responsibility for issuing and amending authorizing instruments to Facility Owners and Facility Managers, only for the areas actually occupied by the authorized improvements. The issuance of a FCC license (authorization), or frequency assignment, does not authorize occupancy of public land. Granting occupancy and use of public land rests exclusively with the BLM. This includes:

1. Approving any new facility(ies) at the site.

2. Approving amendments to existing facilities (i.e., additions to tower, building, support facilities), and approving assignments of leases and ROW grants to qualified buyers of facilities on the site.

3. Approving any modifications to existing facilities including the tower, antenna, equipment or building. Also, approving any changes to the existing FCC licenses, prior to the submission of an application to the FCC.

4. Frequency Management. The BLM is not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

B. Facility Owners and Facility Managers

Facility owners and facility managers (or their designated representatives) are responsible for:

1. Complying with their use authorization and all provisions of this site plan.
2. Ensuring that all new facilities, expansions, or improvements are consistent with the Coos Bay District Office land use planning documents; any environmental document(s)/decisions for the site; and, this site plan.
3. Ensuring facilities/equipment not complying with Federal/State/local laws/regulations/ ordinances will be removed or modified within one year of the approval of this plan. Any modification needs pre-approval by the BLM.
4. Keeping all facilities within the established limits of their authorized area.
5. Providing the BLM with the name, address and phone number for a local contact person. The Facility Owner and Facility Manager and the contact person may be the same individual. The contact person will be available for emergencies and will have the authority to make decisions about construction issues, facility maintenance and all equipment within the facility.

6. Providing 30-day notice to all facility owners/facility managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential interference. This notification requirement applies to new frequencies for facility owners/facility managers as well as their tenants and customers

7. Adhering to the lease/ROW grant as follows:

    a. Facility Owners and Facility Managers with Communications Use Leases are authorized to rent building/tower space to tenants and/or customers without prior written approval from the BLM.

    b. Tenants and/or customers may not construct their own equipment shelter (building, shelter, generator pad, cabinet, etc.) or antenna support structure (tower or mast). The facility owner must own all communication shelters and towers under their lease or grant. [If that is not possible, a separate SF-299 application, cost-recovery fees, analysis, and authorization are required. This will result in the use being a tenant/customer of the original lease/ROW in addition to being a separate facility for billing purposes. See 43 CFR 2806.37]

    c. Tenants and/or customers using a facility covered by a Facility lease/ROW will not have separate BLM leases/ROWs to authorize their use except in situations where regulations or policy require them.

    d. Facility Owners and Facility Managers are responsible for complying with the terms and conditions of the facility lease/ROW. Facility Owners/Facility Managers are also responsible for ensuring that their tenants and customers are in compliance with the terms and conditions of the lease/ROW and applicable FCC or NTIA/IRAC license terms and conditions.

    e. The Facility Owner and Facility Manager may not place any unreasonable restrictions nor any restriction restraining competition or trade practices on tenants and/or customers, or potential tenants and/or customers.

8. Ensuring that all new communications facilities and equipment are installed, operated, and maintained according to the Motorola R-56 Standards and Guidelines for Communication Sites. Repairs and modifications to existing facilities/equipment must also meet Motorola R-56 Standards. These standards may be waived by the BLM authorized officer when recommended by a site user association or similar technical committee upon request of a facility owner/manager when equivalent measures would achieve similar results.

9. Ensuring that all communication equipment meets ANSI, FCC and BLM regulations, guidelines and standards concerning radiation limitations by:

    a. Monitoring radiation levels at their facility and;

    b. Immediately correcting any radiation levels that are, or could be a hazard to human health. (FCC 47 CFR sections 1.1307(b), 1.1310 and 2.1093) and FCC OET Bulletin 65, August 1997.

10. Providing the BLM with a certified copy of all uses and the correct category of uses within the facility, along with the current phone numbers and addresses of all tenants and customers as of September 30th each year. This report is due by October 15th each year.

11. Keeping the premises around their buildings free of trash and debris.

12. Placing the BLM lease/ROW serial number on the door of their communications site building, or on a gate if a fenced compound.

13. Correcting all interference problems. The users are normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

C. FCC and NTIA/IRAC

The FCC and NTIA/IRAC are responsible for Frequency Management. The FCC and NTIA/IRAC are not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the authorizations.

IV. AUTHORIZED USES AND USERS WITHIN A FACILITY

Use by Multiple Users

Use of all facilities and improvements by more than one user will be required except where the facility owner is a government agency. Site applicants will take the lead in this area and design their proposals to accommodate multiple uses of facilities and improvements. This includes multiple uses of buildings, towers, back-up generators, grounding systems, fuel containers, access ways and parking areas.

BLM will not authorize new ROWs, ROW expansion, or modification until it is determined that existing authorized space and facilities are being used to capacity. Development or expansion of a ROW solely to preclude potential competitors from locating nearby is unacceptable and will not be authorized by the BLM.

Facility Owners and Facility Managers are not required to lease facility space to others if they can prove to the BLM authorized officer that:

1. Space is not available;

2. The use is incompatible with the existing facilities;

3. Additional space is needed by the facility owner/manager;

4. Additional users would violate system security needs; or,

5. Potential interference is not resolvable.

V. FEES

The BLM will charge Facility Owners and Facility Managers annual rental fees pursuant to federal regulations contained in 43 CFR 2806. The fees are based on two factors- the type of communications use, and the population served by the use. These fees are considered fair market value for the use of public land. The population Zone 9 (less than 25,000) will be used for these calculations unless something else is specifically agreed to in writing by the authorizing officer or until populations change.

Fees that Facility Owners and Facility Managers may charge their tenants and customers are to be reasonable (consistent with, and not in excess of, other fees for similar facilities) and commensurate with the uses and occupancy of the facilities and services provided to tenants and customers.

VI. GENERAL OPERATION AND MAINTENANCE DIRECTION

A. Unique Resource Considerations at this Communication Site

There are no currently identified special resource coordination considerations with on-site or adjacent resource values. Should special conditions arise through the revision process of the land use plan or other situations, this site plan will be amended accordingly. Special habitat may occur on adjacent parcels, but no site specific restrictions have been applied to uses at this site.

B. Wiring and Grounding

1. All equipment is to be installed within existing buildings and in metal equipment racks or within metal equipment cabinets and in accordance with manufacturers' specifications. All equipment, racks, cabinets and overhead ladder trays are to be grounded and shielded in compliance with National Electrical Code (NEC) and in accordance with accepted industry standards.

2. All electrical wiring and grounding must meet the NEC and applicable State/local codes. All permanent wiring shall be installed in metallic conduit. Surge protection shall be installed between the electric service meter and the first power distribution panel.

3. Lightning protection shall be in accordance with NEC part 810-20 Antenna Discharge Units and Part 810-21 Grounding Conductors. Periodic bonding of the antenna feed lines to the tower (when galvanized steel) shall be made with proper bonding connectors that are stainless steel (preferred), Copperweld, tin plated, or made of brass.

4. Each building is to have its own separate grounding system for all users in that structure. Wherever practical, interconnection of individual grids and/or the simultaneous placement of a large sized copper ground wire with any new grounding systems that are buried on the site will be required.

5. Site or facility grounding must be constructed of copper with #2 AWG or larger wire, Copperweld, or 2" or larger solid copper strap, connected to an adequate site/facility ground electrode system. The site/facility ground electrode system shall be bonded to the power service entrance grounding electrode conductor. Guy wires should also be grounded using manufacturers approved methods to preclude bi-metallic junction and corrosion. All equipment on the site (buildings, towers, power units, transmitters, receivers, antennas, combiners, telephone systems, power cabinets, HVAC units, etc) must be connected to the site/facility ground by direct connection. Electrical system ground wiring is required for electrical ground fault protection and circuit breaker coordination. The grounding systems shall comply with applicable laws, codes and in accordance with standard engineering practice. Below ground connections must use either an exothermic welding process (i.e., Cadweld, Thermoweld, etc.), copper wedge pressure devices (i.e., Ampact, Burndy, Wrench-lock, etc.), or brazed copper connections in conjunction with a mechanical UL listed connector (to be used as a physical strength enhancement component). Brazing by itself is not an acceptable method of bonding below earth grade (buried).

C. Communications Equipment

Equipment Ownership

All equipment shall be labeled (or the information available at the site, as applicable) with:

1. The owner's name;
2. Transmitter frequency(ies);
3. A valid FCC, or IRAC, authorization;
4. Transmitting power output(s); and
5. A current 24-hour phone contact number.

Transmitting Equipment

All transmitters will have protective devices (shields, filters, isolation components), designed into or externally installed, to prevent interference with other users. All transmitters will meet FCC licensing requirements. Two-way transmitters should have dual section isolators for a total of 60 db of isolation.

The re-radiation of intercepted signals from any unprotected transmitter and its associated antenna system will be prevented by the use of appropriate filters (wide band and narrow band broadcast transmitters).

The direct radiation of out-of-band emissions (i.e., noise or spurious harmonics) will be reduced to a level such that they may not be identified as a source of interference as defined in the FCC Rules and Regulations (e.g., Part 90.209(e) for non-broadcast uses, and Parts 73 and 74 for

broadcast uses). If site noise (electromagnetic noise) becomes an issue, noise threshold limits will be established, and amended into the site plan, prior to authorizing any new uses.

Direct radiation of out-of-bound emissions, (i.e., transmitter wide band noise, spurious emissions, harmonics, etc.) shall be reduced to a noninterference level by using bandpass, lowpass, and/or harmonic filtering. Where duplexing is used, use of a notch type device should be avoided.

Re-radiation of signals from a transmitter and its associated antenna system shall be prevented by installing appropriate devices (i.e., ferrite isolators), with minimum return loss of 25 db.

All transmitters not in immediate use and not specifically designated as standby equipment shall be removed. Loads connected to circulators are to be capable of dissipating the total power output of the transmitter.

Receiving Equipment

All receivers shall comply with all applicable parts of the FCC rules, including Parts 2 and 15.

All receivers shall have sufficient "front end" pre-selection to prevent receiver spurious response. The use of bandpass, band-reject cavity or crystal filters may be required to prevent receiver-produced intermodulation or adjacent-channel interference.

Where duplexing is used, a bandpass cavity duplexer is required. Use of the notch-type device is not permitted. Where notch-type devices are currently in place and there are no interference problems, their use may continue until the equipment is replaced, at which time they must be replaced with bandpass devices.

Tower

Generally only one tower is authorized for each facility owner. Facility Owners and Facility Managers may obtain permission to construct the second tower only after submitting evidence that demonstrates that their existing tower is completely filled and full use has been made of combining systems.

1. All towers will be left unpainted, if they are dull, galvanized steel. Paint is required only if the tower has a shiny (i.e., reflective) surface. If paint is required, the BLM will determine what non-reflective color the tower shall be painted.

2. Maximum tower height for future towers at this site is 125 feet unless specifically altered in the NEPA process.

3. Anti-climb devices, removable steps, or other means to discourage unauthorized climbing, are highly recommended to reduce or avoid liability claims.

4. All new towers will be self supporting. No guy lines are permitted.

5. To avoid possible impacts to birds or bats, follow the most current version of the U.S. Fish & Wildlife Service's Interim Guidelines on the Siting, Construction, Operation and Decommissioning of Communication Towers, available at the following website: *http://migratorybirds.fws.gov/issues/towers/comtow.html*

Antennas

1. Microwave (dish) antennas (other than ground mounted satellite dishes) will be limited to a maximum of eight (8) feet in diameter. The smallest diameter dishes are preferred if technically feasible.

2. Dishes should be mounted as low as possible to reduce visual impacts.

3. All antennas must meet all OSHA safety standards. If an antenna exceeds FCC public radiation standards (see FCC OET Bulletin 65) at ground level in publicly accessible areas, it will be remedied within 24 hours after measurements are taken or isolated (e.g., fencing, signing, relocation, lowering power levels are all possible remedies). Ground measurements of RFR levels will be taken before mitigation measures are implemented.

4. Color(s) for dish antennas, or covers, must be pre-approved by the BLM. New white dish antennas and/or covers will not be approved. Existing white dishes and covers must be repainted or replaced with dishes of approved color (typically dark grey), as repairs or replacement become necessary.

5. Antennas will be purchased with or treated to have a non-reflective surface.

Interference

The responsibility for correcting interference problems is a matter for resolution between the lease/ROW holder of the facility(ies), the user causing the interference, and the affected party(ies). First users on a site have seniority with respect to the resolution of interference complaints. Senior holders have an obligation to maintain their equipment to industry standards, to operate their systems in accordance with the terms of both the FCC license and NTIA/IRAC frequency authorization, and to comply with the BLM authorization.

New users on a site must correct, at their expense, interference problems that they create. They may be required to furnish an intermodulation study, electromagnetic noise study, or other interference-related data and must agree to accept financial responsibility for elimination or prevention of any interference caused by the facility before their application can be evaluated. They must cease operation of the suspect equipment until the problem is corrected. If interference problems cannot be resolved or corrected within a reasonable time, the new use that is causing the interference may be terminated and the equipment removed.

All users shall cooperate with the Site Users Association, if one is formed, and the BLM in identification and correction of any interference. The BLM does not have authority for correcting interference problems, but can act as a mediator to help all affected parties. Interference problems must be coordinated with the FCC or NTIA/IRAC, whichever is appropriate.

Interference with law enforcement and/or emergency communications must be corrected immediately. The operation of equipment covered by this site plan shall not interfere with United States Government radio or electronic operations already in existence on public land within two (2) miles of this site. The user causing this interference, shall, at its own expense, take all action necessary to prevent or eliminate such interferences. If it does not eliminate such interference within ten (10) days after receipt of notice from the BLM to do so, this use will be terminated.

If electromagnetic noise becomes an issue, noise thresholds will be established and this site plan will be amended accordingly.

D. Cables and Transmission Line (Wave Guides)

All new cabling will be jacketed and shielded and shall either be flexible or semi-rigid type. Existing substandard cables will be upgraded as repairs or replacement become necessary.

Cables will be properly installed and will be strapped and fastened down. Use of ports at building entrance points will be kept to a minimum by use of combiners.

When attaching power cables onto a tower, conduits should be used. Coax and wave guides should be installed in a wave guide ladder or equally divided among all tower legs.

All transmission lines (wave guides) are to be supported in accordance with manufacturer's specifications.

Unjacketed transmission line of any type is prohibited. No transmission line shall be left unterminated.

Double shielded braided or solid shielded cable will be used. No RG-8 type cable is permitted. No connector-type adapters will be used on transmission lines. Only correct connectors that will mate to connected devices are to be used.

Conduits will be shared when they service common areas and will be buried where possible.

E. Radiation

All communications uses must meet ANSI, FCC, and BLM regulations, guidelines, and standards concerning radiation limitations. This site is considered uncontrolled for the purposes of compliance with RFR standards.

Monitoring radiation levels at the site is the responsibility of all site users and will occur at intervals to comply with FCC regulations and guidelines. A copy of these monitoring reports will be provided to the BLM upon request. The FCC is responsible for enforcement of the monitoring and standardization for compliance. The FCC could revoke the license and/or issue a fine for failure to comply. Additionally, the BLM could terminate or suspend the use authorization for failure to comply.

Onsite RFR measurements will be taken using appropriate equipment that can adequately measure and record both on-tower and on-the-ground levels before mitigation measures related to RFR are implemented pursuant to FCC standards and requirements.

Security fences with RFR notice signs are required around areas that exceed public use levels including anchor points outside the primary facility compound fence, if necessary. Raising higher power transmitting antenna on the tower or modifying the antenna type to half wavelength may be necessary to eliminate RFR hazards. Reducing power may also be required if other alternatives are not feasible. All fencing location and design or new tower construction must be pre-approved by the BLM.

Warning signs will comply with ANSI C95.2 color, symbol, and content conventions. Contact information including name and telephone number will also be included on warning signs. Existing warning signs compliant with FCC 47 CFR 1.1307(b) which do not currently include name and telephone number will be accepted as long as the name and telephone number is clearly posted on other signage at the Lessee's site.

Lowering power levels for on-tower access during maintenance will be coordinated between affected users.

Any identified RFR radiation problems that are, or could be, a human health hazard must be corrected within 24 hours after measurement tests have been completed or be removed from the site by the site user(s). If the proposed corrective action involves any new ground disturbance, it must be pre-approved by the BLM.

F. Utilities-Availability of and Requirements for:

Commercial Electrical Power

Commercial power is provided to the site under a separate ROW grant to Douglas Electric Coop. The current electrical service to the site is adequate for the uses at the site. Future upgrades of the electrical service will be part of the right-of-way to Douglas Electric Coop and may need to be paid for by the benefiting user(s).

Telephone Service

If additional telephone service is ever deemed necessary or expanded at this site, a separate ROW grant will be issued. Site users will also pay for the cost of:

1. The necessary resource surveys and reports for service connections; and

2. The cost of constructing service connections.

Fuel Tanks

Facility owners and facility managers are responsible for providing fuel storage (propane and diesel) and emergency power for their tenants and customers. No tenants or customers will be authorized to have separate fuel tanks and/or generators. Each facility owner will preferably

consolidate fuel storage into a tank large enough in size to accommodate all tenants and customers within their facility. At a minimum, tanks will be grouped together in a consolidated area adjacent to their facilities. All fuel storage tanks (e.g., LPG, propane and diesel) must meet current fire department, Federal, State and local government safety and hazardous materials requirements. Propane is the preferred fuel for future generators.

1. All tanks will be:

    a. Signed in red letters, "SMOKING OR OPEN FLAME PROHIBITED WITHIN 20 FEET";

    b. In conformance with National Fire Protection Association (NFPA) requirements; and,

    c. Painted an approved color, or screened by an enclosure to blend in with the natural environment. If an enclosure is used, it must be pre-approved and painted an approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

2. Diesel tanks will also be:

    a. Enclosed in BLM and fire department approved secondary containment vaults that are painted a BLM-approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

    b. Constructed with underground fuel lines. Fuel line must be constructed of black, treated pipe and fittings, and must be posted.

    c. A containment basin must be maintained below all diesel tanks which are not designed and approved to be self contained.

G. Sanitary Facilities

Several outhouses exist at the site. Plans for any sanitary facilities must be pre-approved by the BLM. If it is determined by the BLM that the users need such facilities, they will be provided by the lease/ROW holder in a manner and location satisfactory to the BLM and within the requirements of the Coos County Health Department.

H. Security and Law Enforcement

The Coos County Sheriff's Department is the key law enforcement agency for the area. They are responsible for most civil and criminal matters. The BLM will be responsible for enforcing matters related to uses of BLM lands (e.g., resource protection issues).

Patrolling and policing for security purposes is the user's responsibility.

Several of the facilities on Signal Tree are currently fenced. All future facilities must be fenced to prevent public access to towers and facilities. Future fencing must meet the following criteria:

1. All fences must meet health and safety requirements.

2. All fence locations and design require Bureau of Land Management pre-approval. The standard fencing type will be chain-link (i.e. cyclone).

3. The standard fence height will be eight (8) feet.

4. Fencing will be designed, installed, maintained, grounded, and of a type to minimize interference issues as described in the Motorola R-56 standards.

5. Fences will be signed with RFR notices if RFR is above public levels.

I. Site Maintenance

The objective of maintenance activities is to present a clean, neat, and orderly appearance at the site and have all of the authorized improvements safe for workers and the public. All users will keep up the overall appearance of the site.

Miscellaneous debris remaining after any construction and/or equipment installation, removal or modification, is not only a hazard, but can cause interference or intermodulation problems. In particular, all loose wire or metal objects are to be removed from the site.

The users of the site will remove all graffiti within 10 working days of finding it, weather permitting.

Users will not be permitted to leave or dispose of trash, garbage or cut brush on public lands. No outside trash or litter containers will be provided. Site users will remove litter from the site as it is produced.

Policing of litter in common areas (i.e., areas between buildings and developed sites) is the shared responsibility of those holders bordering these areas.

During construction and/or maintenance, excess materials (e.g., cement, wire, metal, building materials) will be removed from public land.

Peeling paint on buildings and/or towers will be re-painted within thirty (30) days of discovery by the facility owner or facility manager and within 10 days of notification of the holder by the BLM, weather permitting. The Lessee is responsible for the abatement and control of noxious weeds within the bounds of their lease site and common use areas. Abatement practices are to be implemented in accordance with the Coos Bay District Office weed abatement programs. The Lessee shall control noxious weeds, as listed by Oregon Department of Agriculture, within the right-of-way. Manual control of noxious weeds using hands or hand tools may be conducted without further review. Proposed mechanical, biological and chemical control activities must be reviewed by Bureau of Land Management specialists for compliance with applicable laws and policies. Contact the authorized officer at least 30 days prior to proposed work. The Lessee shall prevent the spread of noxious weeds from the right-of-way.

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 described in BLM policy and relevant NEPA documents. Additionally, a BLM-approved Pesticide Use Proposal is necessary prior

to pesticide application and all pesticide application will be done by a licensed pesticide applicator. When planning the use of pesticides, the Lessee shall submit a Pesticide Use Proposal or - a plan showing the pest(s) to be controlled as well as the proposed type and quantity of material to be used, , method of application, and any other information deemed necessary by the authorized officer. All use of pesticides shall be approved in writing by the authorized officer prior to such use.

J. Inspections

Enforcement authority is vested in the BLM as the Communications Site Administrator for Signal Tree via 43 CFR 2800. The BLM may conduct an annual inspection of each user's facility. This inspection will verify:

1. Compliance with technical standards.
2. Structural integrity.
3. As-built plan accuracy.
4. Electromagnetic compatibility.
5. General site health, safety, and cleanliness.

The BLM shall provide written notice of the scheduled inspection date at least 30 days in advance. Each user shall arrange to have personnel available at the site at the time of the inspection.

Any non-compliance found by a user shall be reported to the BLM. The BLM will conduct an inspection and a written copy of the inspection report shall be forwarded to the violating user within 30 working days following the inspection. The report shall include:

1. A description of the violation.
2. Corrective action required.
3. Name, address, and organization of the responsible party.
4. Time allowed for completion of corrective measures.
5. Anticipated action in the event of noncompliance with remedial instructions.

K. Fire Prevention and Hazard Reduction Requirements

Facility owners and facility managers will be required to control vegetation within the fenced area around their facilities. Gravel or mineral soil (i.e., bare ground) or mowed vegetation must be maintained to a minimum of (10) feet clearance around buildings and a minimum of (10) feet clearance around any propane tanks. Identified threatened, endangered, or sensitive plant species must remain within the minimum clearance areas.

Smoking is prohibited in flammable vegetation areas.

Roof structures shall be kept reasonably clear of debris at all times.

No explosives will be stored at this site. Flammable materials shall be stored in conformance with the requirements of local fire regulations. Flammables will be placed in closed containers and stored away from sources of ignition and combustible materials. If flammables are stored within a building, the building will be locked, properly signed and well ventilated.

Approved spark arresters will be required and maintained on all internal combustion engines.

At least one (1) U.L. rated 20 lb. A:B:C dry chemical fire extinguisher is required inside each building. Prior to each June, fire extinguisher(s) shall be inspected by holders and refilled, if necessary.

Any fire will be immediately reported to "911", the nearest BLM office and/or Coos County Sheriff.

BLM Officers will make periodic fire prevention inspections. They will call to the holder's attention any lack of compliance with the above regulations, plus any other existing hazards. Compliance with these inspections is required within the time limits specified in the inspection report.

All fire protection standards must be accomplished by the beginning of fire season unless otherwise agreed to, and then maintained throughout the fire season.

For new construction, the BLM will provide the Holder with a separate Construction Fire Plan which will be prepared at that time as applicable

L. Access Maintenance and Restrictions

Roads

The road to Signal Tree site is in generally good condition due primarily to the pavement and maintenance from private land logging. However, in the future if timber maintenance declines, the road surface will degrade and will require maintenance. If a user association is formed on Signal Tree, the costs of road maintenance will be assessed by the association and enforced through this management plan. Individual users who damage or disturb the access road, or any associated structures, such as ditches, culverts, roadside vegetation, signs and/or underground utilities or facilities, will be required to repair the road and/or associated structures, to conditions equal to or superior to those prior to any damage or disturbance. This work must be done according to applicable road maintenance standards and may require the appropriate NEPA analysis.

Interior Site Driveways/ Parking Areas

Interior site driveways within the communications site will be maintained by the site users. Interior roads will be planned and approved during establishment of new facilities. Interior roads will be maintained in a manner to allow only one entrance to the site. Off-road vehicle use by a user in and around the communication site will be avoided.

Road Closures

Native surface roads are subject to periodic closures to entry during periods of extreme fire danger, inclement weather, or wet conditions. Authorized site users may use the site during these periods, but should use judgment and may need to seek advance approval from the Bureau of Land Management.

VII. CONDITIONS FOR CONSTRUCTION, MODIFICATIONS OR EXPANSION

A. Facility Owner/Manager Responsibilities

In addition to the responsibilities listed in Section III, new applicants and existing Facility Owners/Managers proposing new, modified, or expanded facilities are responsible for:

1. Submitting a complete application to the Coos Bay District Office (ATTN: "Realty Specialist") prior to any new construction or modifications to existing improvements, unless new electronic equipment is being installed in/on an existing tower and/or an existing building. The application must include:

    a. The appropriate cost recovery and application fees as determined by BLM.

    b. A copy of the approved Site Plan Base Map showing all of the proposed (new) facilities including structures, towers, and auxiliary equipment;

    c. Completed drawings/plans prepared by a registered engineer and Plan of Development approved by the BLM;

    d. Identification of any microwave beam paths, a plot of their azimuth(s), and their proposed elevation(s) on the tower;

    e. Documentation that shows that proposed facilities will not be obstructing, or interfering with, any existing fixed point to point antennas, omni-directional broadcast antennas, or microwave beam paths in the directions of primary population targets. Proposed beam path needs must be shown on Site Plan Base Map; and,

    f. Any needed recommendations, changes or modifications to their original proposal, based on any required resource surveys and/or reports.

2. Demonstrating that their proposals will not cause undue interference with any existing uses before the BLM can approve new facilities. In addition, it is the applicant's responsibility to show that any new facilities will make the most efficient use of the limited amount of space at the site.

3. Showing their proposals will provide for future users without additional construction.

4. Providing engineering and geotechnical investigations for development of specific foundation designs and grading plans.

5. Providing for erosion control as part of the Plan of Development prior to construction activities. At a minimum, erosion control must include: sediment control, stipulations that cut/fill slopes will be graded and contoured to prevent erosion and/or excessive runoff, and recommendations for temporary erosion control measures, (e.g. netting, silt fences, swales, and/or sediment collection areas).

6. Coordinating with other Federal (e.g., FCC and FAA), State and County agencies and obtaining all required approvals and/or permits.

7. Providing 30-day notice to all facility owners/facility managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential interference. This would be for new frequencies for themselves and their tenants and customers.

8. Insuring that all written approvals have been obtained from the BLM prior to construction. In addition:

   a. Directional antennas will only be protected within the arch between their licensed 3 dB points.

   b. New and/or modified facilities will not obstruct existing fixed point-to-point antennas or omni-directional broadcast antennas in directions of primary population targets.

B. <u>Construction Methods and Resource Protection</u>

Plans submitted by an applicant for any new construction or modifications shall specify provisions for soil rehabilitation measures including, but not limited to, soil replacement and stabilization and for proper handling of runoff from buildings, parking area, access roads, and undeveloped common areas.

The following methods and resource protection measures will be required to minimize impacts during construction:

1. Avoid and protect sensitive resource areas, as identified by the BLM.

2. Compliance with the Plan of Development and the Erosion Control Plan.

3. During construction and/or maintenance, no paint or paint thinners will be disposed of on site.

4. Minimize ground disturbance and vegetation removal as much as possible during construction activities. All ground-disturbing activities require BLM pre-approval.

5. Disturbed areas will be re-vegetated with species pre-approved by BLM as soon as possible after construction. If necessary, reseeding will be required until vegetation is successfully established as determined by the BLM.

6. No grading material will be cast off during construction/reconstruction activities. Excess soil can be used for fill material on road and/or building/tower pads.

7. Temporary on-site storage of construction materials will require pre-approval by the BLM.

8. Construction materials and supplies, except for hazardous materials (see number 9. below) may be left unattended at the construction site at the end of each workday, but at the owner's risk.

9. Hazardous materials, including but not limited to all fuels, oils, and lubricants, are not to be left unattended at the site at any time. During construction, these materials are to be removed from the site at the end of each workday, or temporarily stored inside a locked and signed building until the following workday.

10. All surplus construction materials and/or waste debris must be removed from the site no later than thirty (30) days after construction has been completed.

11. Any earth moving or heavy equipment (e.g., dozers, graders, cranes, backhoes, etc.) leaving the designated roadway and/or approved parking area(s) to perform authorized activities at the site, will be washed off prior to being brought onto public lands to prevent the introduction and spread of noxious weeds into the area.

C. Construction Inspection

1. All new construction, reconstruction, or major modification shall conform to the established technical standards and accepted engineering practices (i.e., the Uniform Building Code).

2. Any construction inspections required by other applicable agencies are the responsibility of the lessee/holder. Copies of completed inspections are to be provided to the Coos Bay District Office, Authorized Officer, either as they occur or as part of the final as-built plan. Inspection information shall become a permanent part of the holder's lease/ROW case file.

3. The Lessee/Holder agrees that corrective work detailed in BLM, or other agency required compliance inspections, would be completed by the scheduled completion date. If the Lessee/Holder disagrees or has questions about specific items, the Lessee/Holder must contact the BLM in order that the disagreement or item may be resolved.

4. A final set of as-built plans will be submitted to the Coos Bay District Office Authorized Officer within 90 days of acceptance of structure (if contracted) or of completion date.

D. New or Remodeled/Expanded Buildings

1. Any new buildings must be designed to accommodate multiple users along with fitting into the physical environment as defined in a site-specific environmental analysis developed at the time of the proposal. All new facilities must meet R-56 standards.

2. Buildings are required to be one-story. The roof must be metal or covered with metal to be fire resistant. Roofs can be equipped with antenna support structures, such as poles and railings that can extend up to 25-feet above ground level.

3. Facility Owners and Facility Managers are encouraged to construct the interior of their buildings in a modular fashion, so that they can:

    a. Sublease sections to others;

    b. Provide tenants and customers with internal separation and security;

    c. Reduce physical interference; and

    d. Increase management effectiveness.

4. The following materials are approved for construction of new facilities (i.e. buildings):

    a. Floors – Concrete slab with drainage.

    b. Walls – Concrete block, metal, or pre-fabricated concrete.

    c. Roof – Metal, or concrete, if painted to eliminate shiny surfaces, or other fireproof material as approved by the BLM. Proposals for wooden roofs will not be approved.

    d. Partitions – If it is felt partitions are necessary in buildings, ensure they are constructed with fire resistant material (e.g., concrete block, reinforced concrete, or properly grounded fencing).

    e. Color – Proposed color for use on all exterior building surfaces must be pre-approved by the BLM. The goal of the color selection for the facilities is to make the building as inconspicuous as possible and make buildings located on the skyline look inconspicuous when viewed from a distance. The intent is to reduce or eliminate glare from reflective and/or illuminated surfaces such as windowpanes, sheeting and reflective paints. Non-reflective, BLM-approved colors will be used on equipment buildings.

5. Building entry lights must:

    a. Only light the immediate area in the vicinity of the door;

    b. Be motion activated and have a limited time duration (e.g., 3-5 minutes); and

    c. Have a shielded beam that is pointed at the building door.

Requests for all-night (i.e., "dusk-to-dawn") lighting, or entry lighting that would be visible from outside of the site will not be approved. FAA-required lighting would be the only exception.

E. New or Remodeled/Expanded Towers

1. All new construction, reconstruction, and modifications to towers will be pre-approved by the BLM prior to implementation.

2. It is the applicant/holder's responsibility to assure that a new, or modified, structure will not unduly interfere electronically or physically with any existing equipment at the site. Towers must be spaced, so as to prevent ground level radiation and/or interference problems. This must be clearly demonstrated in writing to the BLM prior to issuance of a new lease/ROW or amendment.

3. All new towers will comply with current structural and safety specifications and design standards, including safety-climbing devices. Towers should be as narrow and "open" as safety and structural integrity allow. New towers will be designed using maximum wind, snow, and/or tower loading anticipated for the site.

VIII. SITE ASSOCIATION/ADVISORY GROUP

A Site Users' Association is recommended at this site. If formed in the future, all lease and ROW holders would be encouraged to join the association. The goal of the association would be to maximize the effective use of the site, coordinate access and maintenance. The objective of a sanctioned association would also be to represent all site users as a group when dealing with the BLM Coos Bay District Office on matters relating to the site administration. The association would be able to work in cooperation with the BLM to identify problems or opportunities and make recommendations to the BLM for any changes in management strategies at the site. The association could also provide input to the BLM regarding the future addition of equipment and facilities at the site. While the advice and recommendations of the association would not be binding on the BLM, the BLM could use the input for administration of the site. The BLM would be a member of such a group and would help jointly develop the charter (i.e., the ground rules).

The goal of the Site Association would also be to maximize the effective use of the site. The objective of a sanctioned association will be to represent all site users as a group when dealing with the Coos Bay District Office on matters relating to the Site administration. The association would be able to work in cooperation with the BLM to identify problems or opportunities and make recommendations to these entities for any changes in management strategies at the site. The association could also provide input to these entities regarding the future addition of equipment and facilities at the site. While the advice and recommendations of the association would not be binding on these entities, they could use the input for administration of the site.

The BLM would be a member of such a group and would help jointly develop the charter (i.e., the ground rules).

In the absence of a formal Site Association, the BLM may utilize a Site Advisory Group that can make suggestions and/or recommendations to specific problems associated with the administration of the site.

IX. APPENDICES

A. Location and Site Maps

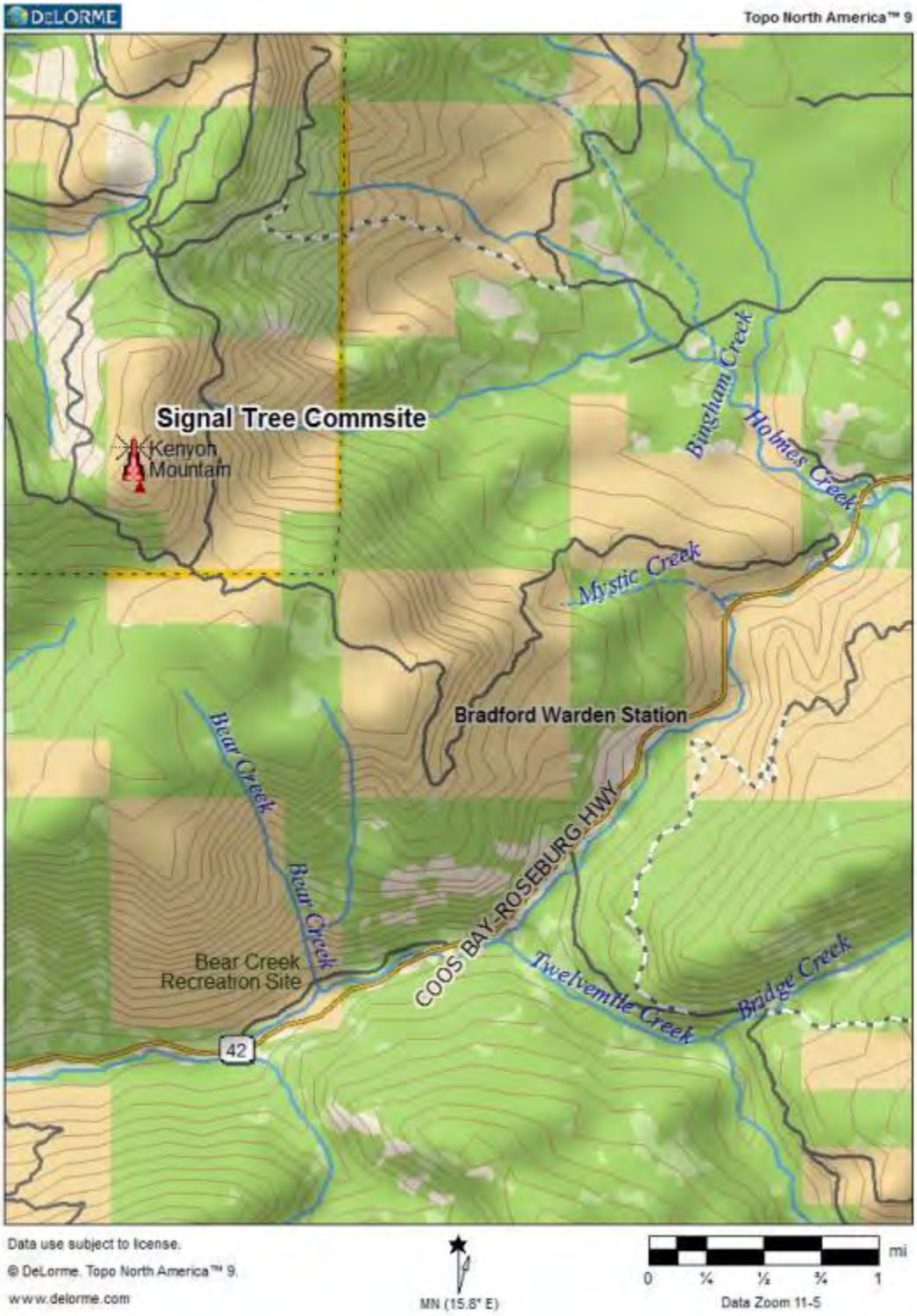
B. Authorized Facilities

C. Site Photographs

D. Inspection Checklist

APPENDIX A

LOCATION MAP



SITE MAP


DeLORME
Topo North America™ 9
Cal-Or Bdcst
BPA
Eugene TV, KVAL
US Cellular
Ramcell
Whitaker Trkng
Douglas Cty
CFPA Lookout
OR Dept Forestry
AT&T
Am Tower
Coos Bay BLM
BLM ROS
ODOT
Signal Tree Communications Site
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (15.8° E)
0 20 40 60 80 100 120
ft
Data Zoom 17-0

APPENDIX B

SIGNAL TREE COMMUNICATIONS SITE LESSEE/HOLDER FACILITY TABLE

	Auth #	Use	Building	Tower	Access/Parking	Other
Facility #1 Calif-Oregon Bdcst Inc.	**ORORE 44098**	**MIC**	**8'x 12' wood**	**40' monopole**	**Access and parking**	**500 gal. propane tank**
Facility #2 BPA	**ORORE 0 6988**	**MIC**	**15'x 20' Metal siding**	**55' lattice self supported**	**Access and parking**	**1000 gal. propane tank, 40'x50' fence, outhouse**
Facility #3 Eugene TV, KVAL	**ORORE 40875**	**MIC**	**15'x15' concrete block**	**40' lattice**	**Access and parking**	**30'x40' fence 500 gal propane tank**
Facility #4 US Cellular	**ORORE 52018**	**CEL**	**12'x20' aggregate prefab**	**100' lattice self support**	**Access and parking**	**50'x50' fence, 500 gal propane tank, Generator**
Facility #5 Coos Fire Protection Association	**ORORE 63498**	**PMRS**	**12'x 12' wood lookout cab**	**50' wood guyed lookout tower**	**Access and parking**	
Facility #6 Coos Bay BLM	**ORORE8651**	**PMRS**	**10'x 12' metal com container**	**80' lattice self support**	**Access and parking**	**50'x 50' fence**
Facility #7 OR DOT OR Public Bdcst	**ORORE 34997 ORORE 34997 A**	**PMRS MIC**	**12'x 20' metal**	**50' lattice self support**	**Access and parking**	
Facility #8	**ORORE**	**PMRS**	**10'x 10'**	**50' lattice**	**Access and**	

	Auth #	Use	Building	Tower	Access/Parking	Other
Oregon Dept of Forestry OR Wing Civil Air Patrol	**46988 OROR 63498**		**block**	**braced against lookout twr 30' lattice**	**parking**	
Facility #9 American Tower	**OROR 42214**	**FAM**	**25'x 25' concrete**	**65' lattice Self support**	**Access and parking**	**70'x 90' fence**
Facility #10 Ramcell	**OROR 54613**	**FAM**	**25'x 27' metal siding**	**125' lattice self support**	**Access and parking**	**80'x 80' fence outhouse**
Facility #10 A Douglas County	**Trespass**	**PMRS**	**10'x 12' aggregate prefab**	**On Ramcell twr**		**Diesel generator**
Facility #11 Whitaker Trucking	**OROR 8113**	**PMRS**	**10'x 12' block**	**100' guyed**	**Access and parking**	
Facility #11A AT&T Wireless	**Trespass**	**CEL**	**Outside cabinet**	**On Whitake twr**		
BLM ROS		**Nat Res Monitoring**				**20'x 20' fence**

APPENDIX C

SITE PHOTOGRAPHS

California-Oregon Broadcasting, Inc.

Bonneville Power Administration

Eugene TV, KVAL Retlaw Enterprises

US Cellular

Coos Fire Protection Association

Bureau of Land Management – Coos Bay

Oregon Department of Transportation
Oregon Public Broadcasting

Oregon Department of Forestry
Oregon Wing Civil Air Patrol

American Tower

Ramcell of Oregon

Douglas County (Trespass)

Gene Whitaker Trucking

AT&T Wireless (Trespass)

BLM ROS Weather Station

APPENDIX D

"Signal Tree Annual Technical Inspection"

Date Inspected: _____ Time Inspection: _____

Permit Holder: _____ Authorization # _____

Site Technician: _____ Phone # _____

Number of Transmitters _____ License Posted _____

Please mark the following Items as Acceptable (A) or Unacceptable (U).

Electrical Wiring ---------- (A) (U) Grounding ---------- (A) (U)

Equipment Installation ---------- (A) (U) Housekeeping ---------- (A) (U)

Building Repair ---------- (A) (U) Tower Repair ---------- (A) (U)

Please mark the following Items as Yes (Y) or NO (N) or (NA)

Isolators ---------- (Y) (N) (NA) Circulators ---------- (Y) (N) (NA)

Cavities ---------- (Y) (N) (NA) Terminators ---------- (Y) (N) (NA)

Filters ---------- (Y) (N) (NA) Lightning Protection ---------- (Y) (N) (NA)

Comments: _____

_____

Recommended Corrective Action: _____

_____

_____

Required Corrective Action to Be Taken: _____

_____

_____

_____

_____

Committee Representatives: _____

Bureau of Land Management Representatives: _____

Please make the required corrective action within the next 120 days. Please make a written report of corrective action taken and submit to the BLM. If you should have any questions, please call the BLM office.

Department of the Interior
Bureau of Land Management

STUKEL MOUNTAIN COMMUNICATIONS SITE MANAGEMENT PLAN

Prepared by the Bureau of Land Management
Lakeview District
Klamath Falls Resource Area, Oregon

Approved by: _____ 3/2/2011
Donald J. Holmstrom **Date**
Field Manager

STUKEL MOUNTAIN COMMUNICATIONS SITE MANAGEMENT PLAN

A. Terms and Definitions

The terms used in this communications site management plan conform to the definitions listed in the April 22, 2005, Federal Register notice "Rights-of-Way, Principles and Procedures: Rights-of-Way under the Federal Land Policy and Management Act and the Mineral Leasing Act", with further clarification provided in BLM Handbook 2860-1 and the United States Code of Federal Regulations (CFR) 43 CFR 2800. In the event of a conflict, between the plan and these sources, the Federal Register notice and the BLM Handbook will govern.

The words "lease" and "lessee" as used in this plan refer to the relationship between the BLM and the communications use lease lessee, or ROW holder. The words "customer" and "tenant" refer to the relationship between the lessee or holder and the occupants in the lessee's facilities.

LEASE OR ROW – A use authorization issued to a communication Facility Owner or Facility Manager allowing for the use of public land to construct and or operate a communications facility and, unless specifically prohibited, to sublease to occupants in that facility.

LESSEE, LEASE HOLDER, OR ROW HOLDER – A Facility Owner or Facility Manager

CUSTOMER – A facility occupant who is paying a facility manager, facility owner, or tenant for using all or any part of the space in the facility, or for communication services, and is not selling communication services or broadcasting to others.

TENANT – A facility occupant who is paying a facility manager, facility owner, or other entity for occupying and using all or part of a facility. A tenant operates communication equipment in the facility for profit by broadcasting to others or selling communication services.

COMMUNICATIONS SITE – An area of BLM-managed public land designated through the land and resource management planning process as being used or is suitable for communications uses. A communications site may be limited to a single communications facility, but most often encompasses more than one. Each site is identified by name; usually a local prominent landmark, such as Stukel Mountain Communications Site.

FACILITY – The building, tower, and related incidental structures or improvements authorized under the terms of the grant or lease.

FACILITY MANAGER – The holder of a BLM communications use authorization who leases space for other communication users. A facility manager does not own or operate communications equipment in the facility for personal or commercial purposes.

FACILITY OWNER – Individuals, commercial entities, organizations, or agencies, that own a communications facility on Federal land; own and operate their own communications equipment; and hold a communications use authorization. Facility owners may or may not lease space in the facility to other communications users.

NON-BROADCAST – This category includes Commercial Mobile Radio Service (CMRS), Facility Managers, Cellular Telephone, Private Mobile Radio Service (PMRS), Microwave, Local Exchange Network, and Passive Reflector.

I. INTRODUCTION

Demand for new communication sites continues to be active in the United States including carrier requests to locate cellular facilities on public lands in the western states. This demand is due to advances in communication technology, strong consumer interest, and a 1983 Federal Communication Commission (FCC) decree establishing wireless carrier coverage requirements.

Stukel Mountain is an established communication site with characteristics desired by government agencies, broadcast, wireless carriers, microwave relay, and other communication providers. The communication site overlooks small communities and a rural but growing population area southeast of Klamath Falls, Oregon.

This Communication Site Management Plan has been developed to document and evaluate the existing communication site and facilities located on Stukel Mountain. The plan also provides an outline for orderly future development of the site in conformance with the Klamath Falls Resource Area's current land use planning document, the Klamath Falls Resource Management Plan (RMP).

Current BLM program guidance for resource management planning specifies that every planning document shall contain determinations relevant to communication sites. The Klamath Falls RMP, approved in June 1995 addresses this land use under General Land Allocation Objectives, designation for TV broadcast and two-way radio on Table 15, and shown on Map 2-12. In order to supplement the land use planning document, this site management plan has been prepared to address specific issues applicable to Stukel Mountain.

Approved lessees or right-of-way (ROW) holders with facilities currently located on Stukel Mountain are shown in the Users' Table, Appendix B. Additional tenants or customers may be accommodated within the confines of existing authorized communication facilities as long as such additions are in compliance with the terms and conditions of authorized leases or ROW grants and with the supplemental direction contained in this site plan. Requests for new communication site facilities may be authorized at the discretion of the Bureau of Land Management (BLM) Authorized Officer through the issuance of new Communications Use Leases, or in some cases, by the issuance of additional ROW grants.

This site plan will be incorporated into all future new leases issued for the Stukel Mountain Communication Site. This plan will also be included as a part of all existing leases and renewed leases or ROW grants as the terms of those authorizations allow. Provisions of the site plan are enforced through the terms and conditions of the ROW or lease authorization. Each lessee is expected to incorporate mandatory BLM lease and site plan requirements into any subsequent agreements with the lessee's tenants and customers. The lessee is also responsible for enforcement of said requirements involving the lessee's tenants and customers.

BROADCAST – This category includes Television Broadcast, AM and FM Radio Broadcast, Cable Television, Broadcast Translator, Low Power Television, and Low Power FM Radio.

RIGHT-OF-WAY (ROW) – The public land authorized to be used or occupied pursuant to a ROW grant.

RIGHT-OF-WAY GRANT – A use authorization issued pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701 *et seq.*), or issued on or before October 21, 1976, pursuant to then existing statutory authority, authorizing the use of a ROW over, upon, under or through public land for construction, operation, maintenance and termination of a project.

HOLDER – Any applicant who has received a ROW grant, lease or temporary use permit.

USERS – All ROW and lease holders, lessees, customers, and tenants that own or operate a facility or communication equipment at the communication site.

SENIOR USE – Any use whose implementation date is prior to the implementation date of the use in question.

RANALLY METRO AREA (RMA) – A series of nine population zone areas, the highest of which is greater than 5 million and the lowest being 25,000 or less. These zones are determined annually and published in the Ranally Metro Area Population Ranking, an independent publication from Rand McNally, and are used in rent determination under guidelines established in 43 CFR 2806.

B. Purpose

This plan will be used by BLM officials administering communications uses at Stukel Mountain, existing lessees, holders, and applicants desiring a lease, grant, or an amendment to an existing lease or ROW grant. The plan will be kept updated by amending pages or sections of the plan rather than issuing a revised edition of the plan. When an administrative revision is necessary (such as the addition of a user), a letter will be sent to the holders from the Klamath Falls Resource Area enclosing a copy of revised pages or sections. The amendments will be consecutively numbered. Other proposed revisions to the plan will be circulated to holders for comment prior to implementation.

Overall management direction for the administration of communications sites is outlined in the CFR and the BLM Handbook and applicable BLM Instructional Memoranda. Specific direction for site management planning on designated communications sites is contained in BLM Handbook 2860-1. Primary regulations and policy pertaining to issuance of ROW authorizations by the BLM are found in Title 43 CFR Sections 2801- 2808 and BLM Handbook 2860-1.

This Site Management Plan provides applicable guidance and adds current policy and technical standards for better management of the Stukel Mountain Communications Site. This plan governs development and management of Stukel Mountain and will be modified in the future as needs and conditions warrant. Any future such uses must be designed, installed, operated, and maintained to be compatible and not interfere with the senior uses as defined in Section A above.

This site-specific plan is administrative in nature and is Categorically Excluded from further review under the National Environmental Policy Act (NEPA) in accordance with 516.DM 2, Appendix 1, item 1.10, which states " – Policies, directives, regulations, and guidelines that are of an administrative, financial, legal, technical, or procedural in nature and whose environmental effects are too broad, speculative, or conjectural to lend themselves to meaningful analysis and will later be subject to the NEPA process, either collectively or case-by-case". Any additional development of Stukel Mountain will be addressed in a site-specific NEPA document.

C. Site Description

The site is located approximately 11.3 miles southeast of Klamath Falls, Oregon. It is on Stukel Mountain, a prominent landmark in the area. The area is managed by the Lakeview District Office, Klamath Falls Resource Area. It is specifically located in the NE ¼ NW¼ of sec. 15, T. 40 S., R.10 E., Williamette Meridian, Klamath County, Oregon at approximately 42° 5' 48.25" North Latitude and 121° 38' 1.75" West Longitude. The elevation at the Stukel Mountain Communications Site is approximately 6400 feet above mean sea level. The site covers 3.77 acres of which only portions are buildable. A site map is provided as Appendix A.

D. Area Served

This site does not serve a Ranally Metro Area (RMA). The largest population zone served is less than 25,000. This zone may be adjusted in the future as populations change. This information will be used for rental fee determination.

E. Access

From the intersection of Highway 39 and Short Road turn east and travel 1 mile then right onto Reeder Road and south to Hill road, turn right and travel approximately 2 miles then left onto the Stukel Mountain Road as it becomes BLM Route 40-10-4.0 then east and south just prior to the private land and the newly graveled bypass road at approximately 3.21 miles. The bypass road rejoins the original road south of the private land at approximately 2.14 miles and then to the site at approximately 1.86 miles. The total distance on BLM lands from Hill Road to the site is approximately 6.22 miles. The road completely bypasses the private land.

F. Site History and Development

There are currently three communications facilities at Stukel Mountain on lands administered by the BLM. Additional communications facilities are located on private lands and Federal Aviation Administration (FAA) lands to the north. A vacant site suitable for future development is located south of the existing facilities on BLM land.

California-Oregon Broadcasting, Inc, OROR 35373, was authorized a facility in 1983 for television broadcast and inter-city microwave relay. In 1998, California-Oregon was authorized to amend their grant to add a second building and tower to accommodate cellular radio equipment and antenna. This second building and tower actually belongs to US Cellular and must be authorized separately. The site was additionally amended in 2008 to allow for an additional third tower and platform for an additional cellular provider. Since Edge Wireless placed a self contained outdoor equipment cabinet at the site instead of placing their equipment within existing shelters owned by California-Oregon Broadcasting, they were required and issued a separate grant for their shelter in 2008. The third tower holds the antenna of AT&T Mobility and a tenant cellular provider. The outdoor equipment cabinet is now owned by AT&T Mobility, OROR 65377.

A list of all authorized facilities as of the date of this plan can be found in Appendix B. Any modifications to existing facilities or proposals for new facilities must be approved by the Lakeview District Office according to the appropriate NEPA process and guidance described in this document.

The site currently appears to be relatively free of interference, receiver sensitivity, and noise. If additional new uses deteriorate the receiving/transmitting operation of the existing uses, the new uses may be required to institute additional studies, equipment upgrades, frequency isolation, or physically separate from the existing uses.

G. Goals and Objectives of Site Management Plan

1. Manage the Stukel Mountain site for broadcast and low-power uses including two-way radio, microwave, cellular, and ISP. All uses must be designed, operated and maintained so as not to physically or electronically interfere with the senior uses. The maximum power output expressed as effective radiated power (ERP) for the Stukel Mountain Communications Site is based on the maximum output allowed the FCC's rules at Title 47, Code of Federal Regulations, Part 90 and Part 73 and 74. Each use must operate at or below the power level authorized by their respective FCC license as long as it does not exceed the site limitation. This power limitation does not preclude existing and new uses from being designed, operated and maintained to meet other interference, noise floor, receive sensitivity, or RFR standards included in this plan.

2. Manage communication equipment on the Stukel Mountain site to maintain the radio frequency (RF) hazard to be within the Public Standard as defined by the FCC.

3. Systematically develop the site to maximize the number of compatible uses while ensuring safety and protection of resources. Development of new towers or buildings within each of the authorized owner's facilities will be authorized only after their respective tower or building space area is filled to near capacity.

4. Help fulfill the public need for adequate communications sites.

5. Protect the interests of holders, lessees, tenants and customers, by preserving a safe and electronically "clean" environment.

6. Encourage the efficient development and use of space and facilities within the designated site.

7. Achieve visual quality objectives by requiring design standards that are unobtrusive and utilizing earth tone colors and non-reflective surface material and stringent site maintenance requirements.

8. Describe the BLM's policy for maintenance of the road to the Stukel Mountain communications site.

9. Develop new facilities only after the appropriate site-specific NEPA analysis and coordination with current lease or ROW holders and users.

10. Amend this Communications Site Plan as necessary to be consistent with future RMPs. BLM will provide authorization holders with proposed amendments to this plan and will allow a reasonable period of time for the holders to review and comment on the proposed changes.

II. AUTHORITY AND DIRECTION

A. Authority

The authority used by BLM to authorize communications uses on public land (administered by the BLM) is the Federal Land Policy and Management Act of 1976, 90 Stat. 2776 (43 U.S. C. 1761-1771) and is reflected in Title 43, Code of Federal Regulations (CFR), Sections 2801- 2808 and various BLM Washington Office Information Bulletins and Instruction Memoranda.

BLM authority for communications site management planning is contained in BLM Handbook 2801-1, Plan of Development. Direction on and policy for communication use authorizations is contained in BLM Manual Section 2860.

Authority for the issuance of authorizations and/or licenses for the transmission and reception of electronic radiation for communication purposes is granted by Congress and administered by the FCC and/or the National Telecommunication and Information Administration – Interagency Radio Advisory Committee (NTIA/IRAC).

B. Relationship to Communications Site Leases/ROW Grants

This site plan will be incorporated into all leases and ROW grants issued (now and/or in the future) for this communications site and must be used in conjunction with the granting authorization. **PROVISIONS OF THIS SITE PLAN ARE ENFORCED THROUGH THE GRANTING AUTHORIZATION (LEASE OR ROW GRANT).** Each lessee or holder is expected to include the requirements of the authorization and this site plan into any documents, which describe the business relationship between the lessee and their tenants and customers. The lessee or holder is responsible for enforcing those provisions.

III. GENERAL RESPONSIBILITIES

A. The Bureau of Land Management

The BLM retains the responsibility for issuing and amending authorizing instruments to Facility Owners and Facility Managers, only for the areas actually occupied by the authorized improvements. The issuance of a FCC license (authorization), or frequency assignment, does not authorize occupancy of public land. Granting occupancy and use of public land rests exclusively with the BLM. This includes:

1. Approving any new facility(ies) at the site.
2. Approving amendments to existing facilities (i.e., additions to tower, building, support facilities), and approving assignments of leases and ROW grants to qualified buyers of facilities on the site.
3. Approving any modifications to existing facilities including the tower, antenna, equipment or building. Also, approving any changes to the existing FCC licenses, prior to the submission of an application to the FCC.
4. Frequency Management. The BLM is not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

B. Facility Owners and Facility Managers

Facility owners and facility managers (or their designated representatives) are responsible for:

1. Complying with their use authorization and all provisions of this site plan.
2. Ensuring that all new facilities, expansions, or improvements are consistent with the Klamath Falls Resource Area land use planning documents; any environmental document(s)/decisions for the site; and, this site plan.
3. Ensuring facilities/equipment not complying with Federal/State/local laws/regulations/ ordinances will be removed or modified within one year of the approval of this plan. Any modification needs pre-approval by the BLM.
4. Keeping all facilities within the established limits of their authorized area.
5. Providing the BLM with the name, address and phone number for a local contact person. The Facility Owner and Facility Manager and the contact person may be the same individual. The contact person will be available for emergencies and will have the authority to make decisions about construction issues, facility maintenance and all equipment within the facility.
6. Providing 30-day notice to all facility owners/facility managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential

interference. This notification requirement applies to new frequencies for facility owners/facility managers as well as their tenants and customers

7. Adhering to the lease/ROW grant as follows:

   a. Facility Owners and Facility Managers with Communications Use Leases are authorized to rent building/tower space to tenants and/or customers without prior written approval from the BLM.

   b. Tenants and/or customers may not construct their own equipment shelter (building, shelter, generator pad, cabinet, etc.) or antenna support structure (tower or mast). The facility owner must own all communication shelters and towers under their lease or grant. [If that is not possible, a separate SF-299 application, cost-recovery fees, analysis, and authorization are required. This will result in the use being a tenant/customer of the original lease/ROW in addition to being a separate facility for billing purposes. See 43 CFR 2806.37]

   c. Tenants and/or customers using a facility covered by a Facility lease/ROW will not have separate BLM leases/ROWs to authorize their use except in situations where regulations or policy require them.

   d. Facility Owners and Facility Managers are responsible for complying with the terms and conditions of the facility lease/ROW. Facility Owners/Facility Managers are also responsible for ensuring that their tenants and customers are in compliance with the terms and conditions of the lease/ROW and applicable FCC or NTIA/IRAC license terms and conditions.

   e. The Facility Owner and Facility Manager may not place any unreasonable restrictions nor any restriction restraining competition or trade practices on tenants and/or customers, or potential tenants and/or customers.

8. Ensuring that all communications facilities and equipment are installed, operated, and maintained according to the Motorola R-56 Standards and Guidelines for Communication Sites. Repairs and modifications to existing facilities/equipment must also meet Motorola R-56 Standards. These standards may be waived by the BLM authorized officer when recommended by a site user association or similar technical committee upon request of a facility owner/manager when equivalent measures would achieve similar results.

9. Ensuring that all communication equipment meets ANSI, FCC and BLM regulations, guidelines and standards concerning radiation limitations by:

   a. Monitoring radiation levels at their facility and;

   b. Immediately correcting any radiation levels that are, or could be a hazard to human health. (FCC 47 CFR sections 1.1307(b), 1.1310 and 2.1093) and FCC OET Bulletin 65, August 1997.

10. Providing the BLM with a certified copy of all uses and the correct category of uses within the facility, along with the current phone numbers and addresses of all tenants and customers as of September 30th each year. This report is due by October 15th each year.

11. Keeping the premises around their buildings free of trash and debris.

12. Placing the BLM lease/ROW serial number on the door of their communications site building, or on a gate if a fenced compound.

13. Correcting all interference problems. The users are normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the FCC and NTIA/IRAC authorizations.

C. FCC and NTIA/IRAC

The FCC and NTIA/IRAC are responsible for Frequency Management. The FCC and NTIA/IRAC are not normally responsible for the resolution of conflicts when the licensees or agencies are operating within the limits of the authorizations.

IV. AUTHORIZED USES AND USERS WITHIN A FACILITY

Use by Multiple Users

Use of all facilities and improvements by more than one user will be required except where the facility owner is a government agency. Site applicants will take the lead in this area and design their proposals to accommodate multiple uses of facilities and improvements. This includes multiple uses of buildings, towers, back-up generators, grounding systems, fuel containers, access ways and parking areas.

BLM will not authorize new ROWs, ROW expansion, or modification until it is determined that existing authorized space and facilities are being used to capacity. Development or expansion of a ROW solely to preclude potential competitors from locating nearby is unacceptable and will not be authorized by the BLM.

Facility Owners and Facility Managers are not required to lease facility space to others if they can prove to the BLM authorized officer that:

1. Space is not available;
2. The use is incompatible with the existing facilities;
3. Additional space is needed by the facility owner/manager;
4. Additional users would violate system security needs; or,
5. Potential interference is not resolvable.

V. FEES

The BLM will charge Facility Owners and Facility Managers annual rental fees pursuant to federal regulations contained in 43 CFR 2806. The fees are based on two factors- the type of communications use, and the population served by the use. These fees are considered fair market value for the use of public land. The population Zone 9 (less than 25,000) will be used for these calculations unless something else is specifically agreed to in writing by the authorizing officer or until populations change.

Fees that Facility Owners and Facility Managers may charge their tenants and customers are to be reasonable (consistent with, and not in excess of, other fees for similar facilities) and commensurate with the uses and occupancy of the facilities and services provided to tenants and customers.

VI. GENERAL OPERATION AND MAINTENANCE DIRECTION

A. Unique Resource Considerations at this Communication Site

There are no currently identified special resource coordination considerations with on-site or adjacent resource values. Should special conditions arise through the revision process of the land use plan or other situations, this site plan will be amended accordingly. Special habitat may occur on adjacent parcels, but no site specific restrictions have been applied to uses at this site.

B. Wiring and Grounding

1. All equipment is to be installed within existing buildings and in metal equipment racks or within metal equipment cabinets and in accordance with manufacturers' specifications. All equipment, racks, cabinets and overhead ladder trays are to be grounded and shielded in compliance with National Electrical Code (NEC) and in accordance with accepted industry standards.

2. All electrical wiring and grounding must meet the NEC and applicable State/local codes. All permanent wiring shall be installed in metallic conduit. Surge protection shall be installed between the electric service meter and the first power distribution panel.

3. Lightning protection shall be in accordance with NEC part 810-20 Antenna Discharge Units and Part 810-21 Grounding Conductors. Periodic bonding of the antenna feed lines to the tower (when galvanized steel) shall be made with proper bonding connectors that are stainless steel (preferred), Copperweld, tin plated, or made of brass.

4. Each building is to have its own separate grounding system for all users in that structure. Wherever practical, interconnection of individual grids and/or the simultaneous placement of a large sized copper ground wire with any new grounding systems that are buried on the site will be required.

5. Site or facility grounding must be constructed of copper with #2 AWG or larger wire, Copperweld, or 2" or larger solid copper strap, connected to an adequate site/facility ground electrode system. The site/facility ground electrode system shall be bonded to the power service entrance grounding electrode conductor. Guy wires should also be grounded using manufacturers approved methods to preclude bi-metallic junction and corrosion. All equipment on the site (buildings, towers, power units, transmitters, receivers, antennas, combiners, telephone systems, power cabinets, HVAC units, etc) must be connected to the site/facility ground by direct connection. Electrical system ground wiring is required for electrical ground fault protection and circuit breaker coordination. The grounding systems shall comply with applicable laws, codes and in accordance with standard engineering practice. Below ground connections must use either an exothermic welding process (i.e., Cadweld, Thermoweld, etc.), copper wedge pressure devices (i.e., Ampact, Burndy, Wrench-lock, etc.), or brazed copper connections in conjunction with a mechanical UL listed connector (to be used as a physical strength enhancement component). Brazing by itself is not an acceptable method of bonding ~~below earth grade (buried).~~

C. Communications Equipment

Equipment Ownership

All equipment shall be labeled (or the information available at the site, as applicable) with:

1. The owner's name;
2. Transmitter frequency(ies);
3. A valid FCC, or IRAC, authorization;
4. Transmitting power output(s); and
5. A current 24-hour phone contact number.

Transmitting Equipment

All transmitters will have protective devices (shields, filters, isolation components), designed into or externally installed, to prevent interference with other users. All transmitters will meet FCC licensing requirements. Two-way transmitters should have dual section isolators for a total of 60 db of isolation.

The re-radiation of intercepted signals from any unprotected transmitter and its associated antenna system will be prevented by the use of appropriate filters (wide band and narrow band broadcast transmitters).

The direct radiation of out-of-band emissions (i.e., noise or spurious harmonics) will be reduced to a level such that they may not be identified as a source of interference as defined in the FCC Rules and Regulations (e.g., Part 90.209(e) for non-broadcast uses, and Parts 73 and 74 for broadcast uses. If site noise (electromagnetic noise) becomes an issue, noise threshold limits will be established, and amended into the site plan, prior to authorizing any new uses.

Direct radiation of out-of-bound emissions, (i.e., transmitter wide band noise, spurious emissions, harmonics, etc.) shall be reduced to a noninterference level by using bandpass, lowpass, and/or harmonic filtering. Where duplexing is used, use of a notch type device should be avoided.

Re-radiation of signals from a transmitter and its associated antenna system shall be prevented by installing appropriate devices (i.e., ferrite isolators), with minimum return loss of 25 db.

All transmitters not in immediate use and not specifically designated as standby equipment shall be removed. Loads connected to circulators are to be capable of dissipating the total power output of the transmitter.

Receiving Equipment

All receivers shall comply with all applicable parts of the FCC rules, including Parts 2 and 15.

All receivers shall have sufficient "front end" pre-selection to prevent receiver spurious response. The use of bandpass, band-reject cavity or crystal filters may be required to prevent receiver-produced intermodulation or adjacent-channel interference.

Where duplexing is used, a bandpass cavity duplexer is required. Use of the notch-type device is not permitted. Where notch-type devices are currently in place and there are no interference problems, their use may continue until the equipment is replaced, at which time they must be replaced with bandpass devices.

Tower

Generally only one tower is authorized for each facility owner. Facility Owners and Facility Managers may obtain permission to construct the second tower only after submitting evidence that demonstrates that their existing tower is completely filled and full use has been made of combining systems.

1. All towers will be left unpainted, if they are dull, galvanized steel. Paint is required only if the tower has a shiny (i.e., reflective) surface. If paint is required, the BLM will determine what non-reflective color the tower shall be painted.

2. Maximum tower height for future towers at this site is 180 feet unless specifically altered in the NEPA process.

3. Anti-climb devices, removable steps, or other means to discourage unauthorized climbing, are highly recommended to reduce or avoid liability claims.

4. All new towers will be self supporting. No guy lines are permitted.

5. To avoid possible impacts to birds or bats, follow the most current version of the U.S. Fish & Wildlife Service's Interim Guidelines on the Siting, Construction, Operation and Decommissioning of Communication Towers, available at the following website: *http://migratorybirds.fws.gov/issues/towers/comtow.html*

Antennas

1. Microwave (dish) antennas (other than ground mounted satellite dishes) will be limited to a maximum of eight (8) feet in diameter. The smallest diameter dishes are preferred if technically feasible.

2. Dishes should be mounted as low as possible to reduce visual impacts.

3. All antennas must meet all OSHA safety standards. If an antenna exceeds FCC public radiation standards (see FCC OET Bulletin 65) at ground level in publicly accessible areas, it will be remedied within 24 hours after measurements are taken or isolated (e.g., fencing, signing, relocation, lowering power levels are all possible remedies). Ground measurements of radio frequency radiation (RFR) levels will be taken before mitigation measures are implemented.

4. Color(s) for dish antennas, or covers, must be pre-approved by the BLM. New white dish ~~antennas and/or covers will not be approved. Existing white dishes and covers must be~~ repainted or replaced with dishes of approved color (typically dark grey), as repairs or replacement become necessary.

5. Antennas will be purchased with or treated to have a non-reflective surface.

Interference

The responsibility for correcting interference problems is a matter for resolution between the lease/ROW holder of the facility(ies), the user causing the interference, and the affected party(ies). First users on a site have seniority with respect to the resolution of interference complaints. Senior holders have an obligation to maintain their equipment to industry standards, to operate their systems in accordance with the terms of both the FCC license and NTIA/IRAC frequency authorization, and to comply with the BLM authorization.

New users on a site must correct, at their expense, interference problems that they create. They may be required to furnish an intermodulation study, electromagnetic noise study, or other interference-related data and must agree to accept financial responsibility for elimination or prevention of any interference caused by the facility before their application can be evaluated. They must cease operation of the suspect equipment until the problem is corrected. If interference problems cannot be resolved or corrected within a reasonable time, the new use that is causing the interference may be terminated and the equipment removed.

All users shall cooperate with the Site Users Association, if one is formed, and the BLM in identification and correction of any interference. The BLM does not have authority for correcting interference problems, but can act as a mediator to help all affected parties. Interference problems must be coordinated with the FCC or NTIA/IRAC, whichever is appropriate.

Interference with law enforcement and/or emergency communications must be corrected immediately. The operation of equipment covered by this site plan shall not interfere with United States Government radio or electronic operations already in existence on public land

within two (2) miles of this site. The user causing this interference, shall, at its own expense, take all action necessary to prevent or eliminate such interferences. If it does not eliminate such interference within ten (10) days after receipt of notice from the BLM to do so, this use will be terminated.

If electromagnetic noise becomes an issue, noise thresholds will be established and this site plan will be amended accordingly.

D. Cables and Transmission Line (Wave Guides)

All new cabling will be jacketed and shielded and shall either be flexible or semi-rigid type. Existing substandard cables will be upgraded as repairs or replacement become necessary.

Cables will be properly installed and will be strapped and fastened down. Use of ports at building entrance points will be kept to a minimum by use of combiners.

When attaching power cables onto a tower, conduits should be used. Coax and wave guides should be installed in a wave guide ladder or equally divided among all tower legs.

All transmission lines (wave guides) are to be supported in accordance with manufacturer's specifications.

Unjacketed transmission line of any type is prohibited. No transmission line shall be left unterminated.

Double shielded braided or solid shielded cable will be used. No RG-8 type cable is permitted. No connector-type adapters will be used on transmission lines. Only correct connectors that will mate to connected devices are to be used.

Conduits will be shared when they service common areas and will be buried where possible.

E. Radiation

All communications uses must meet ANSI, FCC, and BLM regulations, guidelines, and standards concerning radiation limitations. This site is considered uncontrolled for the purposes of compliance with RFR standards.

Monitoring radiation levels at the site is the responsibility of all site users and will occur at intervals to comply with FCC regulations and guidelines. A copy of these monitoring reports will be provided to the BLM upon request. The FCC is responsible for enforcement of the monitoring and standardization for compliance. The FCC could revoke the license and/or issue a fine for failure to comply. Additionally, the BLM could terminate or suspend the use authorization for failure to comply.

Onsite RFR measurements will be taken using appropriate equipment that can adequately measure and record both on-tower and on-the-ground levels before mitigation measures related to RFR are implemented pursuant to FCC standards and requirements.

Security fences with RFR notice signs are required around areas that exceed public use levels including anchor points outside the primary facility compound fence, if necessary. Raising higher power transmitting antenna on the tower or modifying the antenna type to half wavelength may be necessary to eliminate RFR hazards. Reducing power may also be required if other alternatives are not feasible. All fencing location and design or new tower construction must be pre-approved by the BLM.

Warning signs will comply with ANSI C95.2 color, symbol, and content conventions. Contact information including name and telephone number will also be included on warning signs. Existing warning signs compliant with FCC 47 CFR 1.1307(b) which do not currently include name and telephone number will be accepted as long as the name and telephone number is clearly posted on other signage at the Lessee's site.

Lowering power levels for on-tower access during maintenance will be coordinated between affected users.

~~Any identified RFR radiation problems that are, or could be, a human health hazard must be~~ corrected within 24 hours after measurement tests have been completed or be removed from the site by the site user(s). If the proposed corrective action involves any new ground disturbance, it must be pre-approved by the BLM.

F. Utilities-Availability of and Requirements for:

Commercial Electrical Power

Commercial power is provided to the site under a separate ROW grant to Douglas Electric Coop. The current electrical service to the site is adequate for the uses at the site. Future upgrades of the electrical service will be part of the right-of-way to Douglas Electric Coop and may need to be paid for by the benefiting user(s).

Telephone Service

If additional telephone service is ever deemed necessary or expanded at this site, a separate ROW grant will be issued. Site users will also pay for the cost of:

1. The necessary resource surveys and reports for service connections; and
2. The cost of constructing service connections.

For visual reasons, overhead utility poles may not be authorized.

Fuel Tanks

Facility owners and facility managers are responsible for providing fuel storage (propane and diesel) and emergency power for their tenants and customers. No tenants or customers will be authorized to have separate fuel tanks and/or generators. Each facility owner will preferably consolidate fuel storage into a tank large enough in size to accommodate all tenants and customers within their facility. At a minimum, tanks will be grouped together in a consolidated area adjacent to their facilities. All fuel storage tanks (e.g., LPG, propane and diesel) must meet

current fire department, Federal, State and local government safety and hazardous materials requirements. Propane is the preferred fuel for future generators.

1. All tanks will be:

   a. Signed in red letters, "SMOKING OR OPEN FLAME PROHIBITED WITHIN 20 FEET";

   b. In conformance with National Fire Protection Association (NFPA) requirements; and,

   c. Painted an approved color, or screened by an enclosure to blend in with the natural environment. If an enclosure is used, it must be pre-approved and painted an approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

2. Diesel tanks will also be:

   a. Enclosed in BLM and fire department approved secondary containment vaults that are painted a BLM-approved color from the Munsell Soil Color Chart, Standard Environmental Colors.

   b. Constructed with underground fuel lines. Fuel line must be constructed of black, treated pipe and fittings, and must be posted.

   c. A containment basin must be maintained below all diesel tanks which are not designed and approved to be self contained.

G. Sanitary Facilities

Several outhouses exist at the site. Plans for any sanitary facilities must be pre-approved by the BLM. If it is determined by the BLM that the users need such facilities, they will be provided by the lease/ROW holder in a manner and location satisfactory to the BLM and within the requirements of the Klamath County Health Department.

H. Security and Law Enforcement

The Klamath County Sheriff's Department is the key law enforcement agency for the area. They are responsible for most civil and criminal matters. The BLM will be responsible for enforcing matters related to uses of BLM lands (e.g., resource protection issues).

Patrolling and policing for security purposes is the user's responsibility.

The US Cellular facility on Stukel Mountain is currently fenced. If fencing is ever deemed necessary for security purposes at other facilities on the site, it must meet the following criteria:

1. All fences must meet health and safety requirements.

2. All fence locations and design require Bureau of Land Management pre-approval. The standard fencing type will be chain-link (i.e. cyclone).

3. The standard fence height will be eight (8) feet.

4. Fencing will be designed, installed, maintained, grounded, and of a type to minimize interference issues as described in the Motorola R-56 standards.

5. Fences will be signed with RFR notices if RFR is above public levels.

I. Site Maintenance

The objective of maintenance activities is to present a clean, neat, and orderly appearance at the site and have all of the authorized improvements safe for workers and the public. All users will keep up the overall appearance of the site.

Miscellaneous debris remaining after any construction and/or equipment installation, removal or modification, is not only a hazard, but can cause interference or intermodulation problems. In particular, all loose wire or metal objects are to be removed from the site.

The users of the site will remove all graffiti within 10 working days of finding it, weather permitting.

Users will not be permitted to leave or dispose of trash, garbage or cut brush on public lands. No outside trash or litter containers will be provided. Site users will remove litter from the site as it is produced.

Policing of litter in common areas (i.e., areas between buildings and developed sites) is the shared responsibility of those holders bordering these areas.

During construction and/or maintenance, excess materials (e.g., cement, wire, metal, building materials) will be removed from public land.

Peeling paint on buildings and/or towers will be re-painted within thirty (30) days of discovery by the facility owner or facility manager and within 10 days of notification of the holder by the BLM, weather permitting.

The Lessee is responsible for the abatement and control of noxious weeds within the bounds of their lease site and common use areas. Abatement practices are to be implemented in accordance with the Lakeview District Office weed abatement programs.

J. Inspections

Enforcement authority is vested in the BLM as the Communications Site Administrator for Stukel Mountain via 43 CFR 2800. The BLM may conduct an annual inspection of each user's facility. This inspection will verify:

1. Compliance with technical standards.

2. Structural integrity.

3. As-built plan accuracy.

4. Electromagnetic compatibility.

5. General site health, safety, and cleanliness.

The BLM shall provide written notice of the scheduled inspection date at least 30 days in advance. Each user shall arrange to have personnel available at the site at the time of the inspection.

Any non-compliance found by a user shall be reported to the BLM. The BLM will conduct an inspection and a written copy of the inspection report shall be forwarded to the violating user within 30 working days following the inspection. The report shall include:

1. A description of the violation.
2. Corrective action required.
3. Name, address, and organization of the responsible party.
4. Time allowed for completion of corrective measures.
5. Anticipated action in the event of noncompliance with remedial instructions.

K. Fire Prevention and Hazard Reduction Requirements

Facility owners and facility managers will be required to control vegetation within the fenced area around their facilities. Gravel or mineral soil (i.e., bare ground) or mowed vegetation must be maintained to a minimum of (10) feet clearance around buildings and a minimum of (10) feet clearance around any propane tanks. Identified threatened, endangered, or sensitive plant species must remain within the minimum clearance areas.

Smoking is prohibited in flammable vegetation areas.

Roof structures shall be kept reasonably clear of debris at all times.

No explosives will be stored at this site. Flammable materials shall be stored in conformance with the requirements of local fire regulations. Flammables will be placed in closed containers and stored away from sources of ignition and combustible materials. If flammables are stored within a building, the building will be locked, properly signed and well ventilated.

Approved spark arresters will be required and maintained on all internal combustion engines.

At least one (1) U.L. rated 20 lb. A:B:C dry chemical fire extinguisher is required inside each building. Prior to each June, fire extinguisher(s) shall be inspected by holders and refilled, if necessary.

Any fire will be immediately reported to "911", the nearest BLM office and/or Klamath County Sheriff.

BLM Officers will make periodic fire prevention inspections. They will call to the holder's attention any lack of compliance with the above regulations, plus any other existing hazards.

Compliance with these inspections is required within the time limits specified in the inspection report.

All fire protection standards must be accomplished by the beginning of fire season unless otherwise agreed to, and then maintained throughout the fire season.

For new construction, the BLM will provide the Holder with a separate Construction Fire Plan which will be prepared at that time as applicable

L. Access Maintenance and Restrictions

Roads

The road to Stukel Mountain site is in generally good condition. In the future when road conditions need maintenance, the costs of road maintenance will be assessed by the BLM and enforced through this management plan along with the individual right of way grants issued to the users on the private and FAA lands.

Individual users who damage or disturb the access road, or any associated structures, such as ditches, culverts, roadside vegetation, signs and/or underground utilities or facilities, will be required to repair the road and/or associated structures, to conditions equal to or superior to those prior to any damage or disturbance. This work must be done according to applicable road maintenance standards and may require the appropriate NEPA analysis.

Interior Site Driveways/ Parking Areas

Interior site driveways within the communications site will be maintained by the site users. Interior roads will be planned and approved during establishment of new facilities. Interior roads will be maintained in a manner to allow only one entrance to the site. Off-road vehicle use by a user in and around the communication site will be avoided.

Road Closures

Native surface roads are subject to periodic closures to entry during periods of extreme fire danger, inclement weather, or wet conditions. The Stukel Mountain road is closed to motorized public use from November 1 to April 15 each year. Authorized site users may use the road during these periods, but will need to obtain advanced approval from the Authorized Officer.

VII. CONDITIONS FOR CONSTRUCTION, MODIFICATIONS OR EXPANSION

A. Facility Owner/Manager Responsibilities

In addition to the responsibilities listed in Section III, new applicants and existing Facility Owners/Managers proposing new, modified, or expanded facilities are responsible for:

1. Submitting a complete application to the Lakeview District Office (ATTN: "Realty Specialist") prior to any new construction or modifications to existing improvements,

unless new electronic equipment is being installed in/on an existing tower and/or an existing building. The application must include:

a. The appropriate cost recovery and application fees as determined by BLM.

b. A copy of the approved Site Plan Base Map showing all of the proposed (new) facilities including structures, towers, and auxiliary equipment;

c. Completed drawings/plans prepared by a registered engineer and Plan of Development approved by the BLM;

d. Identification of any microwave beam paths, a plot of their azimuth(s), and their proposed elevation(s) on the tower;

e. Documentation that shows that proposed facilities will not be obstructing, or interfering with, any existing fixed point to point antennas, omni-directional broadcast antennas, or microwave beam paths in the directions of primary population targets. Proposed beam path needs must be shown on Site Plan Base Map; and,

f. Any needed recommendations, changes or modifications to their original proposal, based on any required resource surveys and/or reports.

2. Demonstrating that their proposals will not cause undue interference with any existing uses before the BLM can approve new facilities. In addition, it is the applicant's responsibility to show that any new facilities will make the most efficient use of the limited amount of space at the site.

3. Showing their proposals will provide for future users without additional construction.

4. Providing engineering and geotechnical investigations for development of specific foundation designs and grading plans.

5. Providing for erosion control as part of the Plan of Development prior to construction activities. At a minimum, erosion control must include: sediment control, stipulations that cut/fill slopes will be graded and contoured to prevent erosion and/or excessive runoff, and recommendations for temporary erosion control measures, (e.g. netting, silt fences, swales, and/or sediment collection areas).

6. Coordinating with other Federal (e.g., FCC and FAA), State and County agencies and obtaining all required approvals and/or permits.

7. Providing 30-day notice to all facility owners/facility managers at the site, as well as the BLM, of all new frequencies proposed for the site. A completed BLM technical data sheet or equivalent must be sent with the 30-day notice to allow for comment of potential interference. This would be for new frequencies for themselves and their tenants and customers.

8. Insuring that all written approvals have been obtained from the BLM prior to construction. In addition:

a. Directional antennas will only be protected within the arch between their licensed 3 dB points.

b. New and/or modified facilities will not obstruct existing fixed point-to-point antennas or omni-directional broadcast antennas in directions of primary population targets.

B. Construction Methods and Resource Protection

Plans submitted by an applicant for any new construction or modifications shall specify provisions for soil rehabilitation measures including, but not limited to, soil replacement and stabilization and for proper handling of runoff from buildings, parking area, access roads, and undeveloped common areas.

The following methods and resource protection measures will be required to minimize impacts during construction:

1. ~~Avoid and protect sensitive resource areas, as identified by the BLM.~~
2. Compliance with the Plan of Development and the Erosion Control Plan.
3. During construction and/or maintenance, no paint or paint thinners will be disposed of on site.
4. Minimize ground disturbance and vegetation removal as much as possible during construction activities. All ground-disturbing activities require BLM pre-approval.
5. Disturbed areas will be re-vegetated with species pre-approved by BLM as soon as possible after construction. If necessary, reseeding will be required until vegetation is successfully established as determined by the BLM.
6. No grading material will be cast off during construction/reconstruction activities. Excess soil can be used for fill material on road and/or building/tower pads.
7. Temporary on-site storage of construction materials will require pre-approval by the BLM.
8. Construction materials and supplies, except for hazardous materials (see number 9. below) may be left unattended at the construction site at the end of each workday, but at the owner's risk.
9. Hazardous materials, including but not limited to all fuels, oils, and lubricants, are not to be left unattended at the site at any time. During construction, these materials are to be removed from the site at the end of each workday, or temporarily stored inside a locked and signed building until the following workday.
10. All surplus construction materials and/or waste debris must be removed from the site no later than thirty (30) days after construction has been completed.

11. Any earth moving or heavy equipment (e.g., dozers, graders, cranes, backhoes, etc.) leaving the designated roadway and/or approved parking area(s) to perform authorized activities at the site, will be washed off prior to being brought onto public lands to prevent the introduction and spread of noxious weeds into the area.

C. Construction Inspection

1. All new construction, reconstruction, or major modification shall conform to the established technical standards and accepted engineering practices (i.e., the Uniform Building Code).

2. Any construction inspections required by other applicable agencies are the responsibility of the lessee/holder. Copies of completed inspections are to be provided to the Lakeview District Office, Authorized Officer, either as they occur or as part of the final as-built plan. Inspection information shall become a permanent part of the holder's lease/ROW case file.

3. The Lessee/Holder agrees that corrective work detailed in BLM, or other agency required compliance inspections, would be completed by the scheduled completion date. If the Lessee/Holder disagrees or has questions about specific items, the Lessee/Holder must contact the BLM in order that the disagreement or item may be resolved.

4. A final set of as-built plans will be submitted to the Lakeview District Office Authorized Officer within 90 days of acceptance of structure (if contracted) or of completion date.

D. New or Remodeled/Expanded Buildings

1. Any new buildings must be designed to accommodate multiple users along with fitting into the physical environment as defined in a site-specific environmental analysis developed at the time of the proposal. All new facilities must meet R-56 standards.

2. Buildings are required to be one-story. The roof must be metal or covered with metal to be fire resistant. Roofs can be equipped with antenna support structures, such as poles and railings that can extend up to 25-feet above ground level.

3. Facility Owners and Facility Managers are encouraged to construct the interior of their buildings in a modular fashion, so that they can:

    a. Sublease sections to others;
    b. Provide tenants and customers with internal separation and security;
    c. Reduce physical interference; and
    d. Increase management effectiveness.

4. The following materials are approved for construction of new facilities (i.e. buildings):

    a. Floors – Concrete slab with drainage.

    b. Walls – Concrete block, metal, or pre-fabricated concrete.

c. Roof – Metal, or concrete, if painted to eliminate shiny surfaces, or other fireproof material as approved by the BLM. Proposals for wooden roofs will not be approved.

d. Partitions – If it is felt partitions are necessary in buildings, ensure they are constructed with fire resistant material (e.g., concrete block, reinforced concrete, or properly grounded fencing.

e. Color – Proposed color for use on all exterior building surfaces must be pre-approved by the BLM. The goal of the color selection for the facilities is to make the building as inconspicuous as possible and make buildings located on the skyline look inconspicuous when viewed from a distance. The intent is to reduce or eliminate glare from reflective and/or illuminated surfaces such as windowpanes, sheeting and reflective paints. Non-reflective, BLM-approved colors will be used on equipment buildings.

5. Building entry lights must:

a. Only light the immediate area in the vicinity of the door;

b. Be motion activated and have a limited time duration (e.g., 3-5 minutes); and

c. Have a shielded beam that is pointed at the building door.

Requests for all-night (i.e., "dusk-to-dawn") lighting, or entry lighting that would be visible from outside of the site will not be approved. FAA-required lighting would be the only exception.

E. <u>New or Remodeled/Expanded Towers</u>

1. All new construction, reconstruction, and modifications to towers will be pre-approved by the BLM prior to implementation.

2. It is the applicant/holder's responsibility to assure that a new, or modified, structure will not unduly interfere electronically or physically with any existing equipment at the site. Towers must be spaced, so as to prevent ground level radiation and/or interference problems. This must be clearly demonstrated in writing to the BLM prior to issuance of a new lease/ROW or amendment.

3. All new towers will comply with current structural and safety specifications and design standards, including safety-climbing devices. Towers should be as narrow and "open" as safety and structural integrity allow. New towers will be designed using maximum wind, snow, and/or tower loading anticipated for the site.

VIII. SITE ASSOCIATION/ADVISORY GROUP

A Site Users' Association is recommended at this site. Since communication uses also occur on adjacent private lands, it is recommended that all uses become part of an association. If formed in the future, all lease and ROW holders would be encouraged to join the association. The goal of the association would be to maximize the effective use of the site, coordinate access and maintenance. The objective of a sanctioned association would also be to represent all site users as a group when dealing with the BLM Lakeview District Office on matters relating to the site administration. The association would be able to work in cooperation with the BLM to identify problems or opportunities and make recommendations to the BLM for any changes in management strategies at the site. The association could also provide input to the BLM regarding the future addition of equipment and facilities at the site. While the advice and recommendations of the association would not be binding on the BLM, the BLM could use the input for administration of the site. The BLM would be a member of such a group and would help jointly develop the charter (i.e., the ground rules).

The goal of the Site Association would also be to maximize the effective use of the site. The objective of a sanctioned association will be to represent all site users as a group when dealing with the Lakeview District Office on matters relating to the Site administration. The association would be able to work in cooperation with the BLM to identify problems or opportunities and make recommendations to these entities for any changes in management strategies at the site. The association could also provide input to these entities regarding the future addition of equipment and facilities at the site. While the advice and recommendations of the association would not be binding on these entities, they could use the input for administration of the site. The BLM would be a member of such a group and would help jointly develop the charter (i.e., the ground rules).

In the absence of a formal Site Association, the BLM may utilize a Site Advisory Group that can make suggestions and/or recommendations to specific problems associated with the administration of the site.

IX. APPENDICES

A. Location and Site Maps

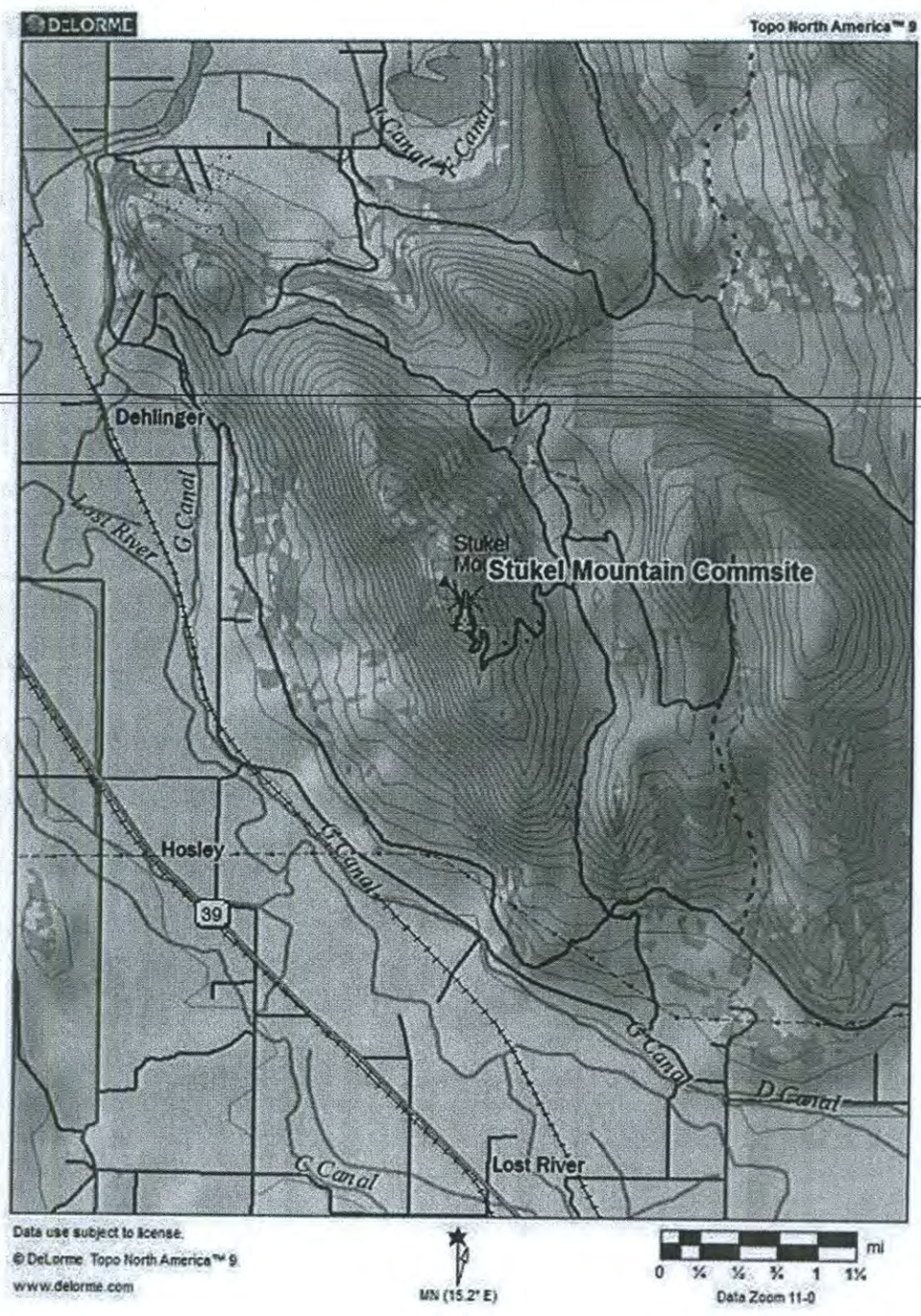
B. Authorized Facilities

C. Site Photographs

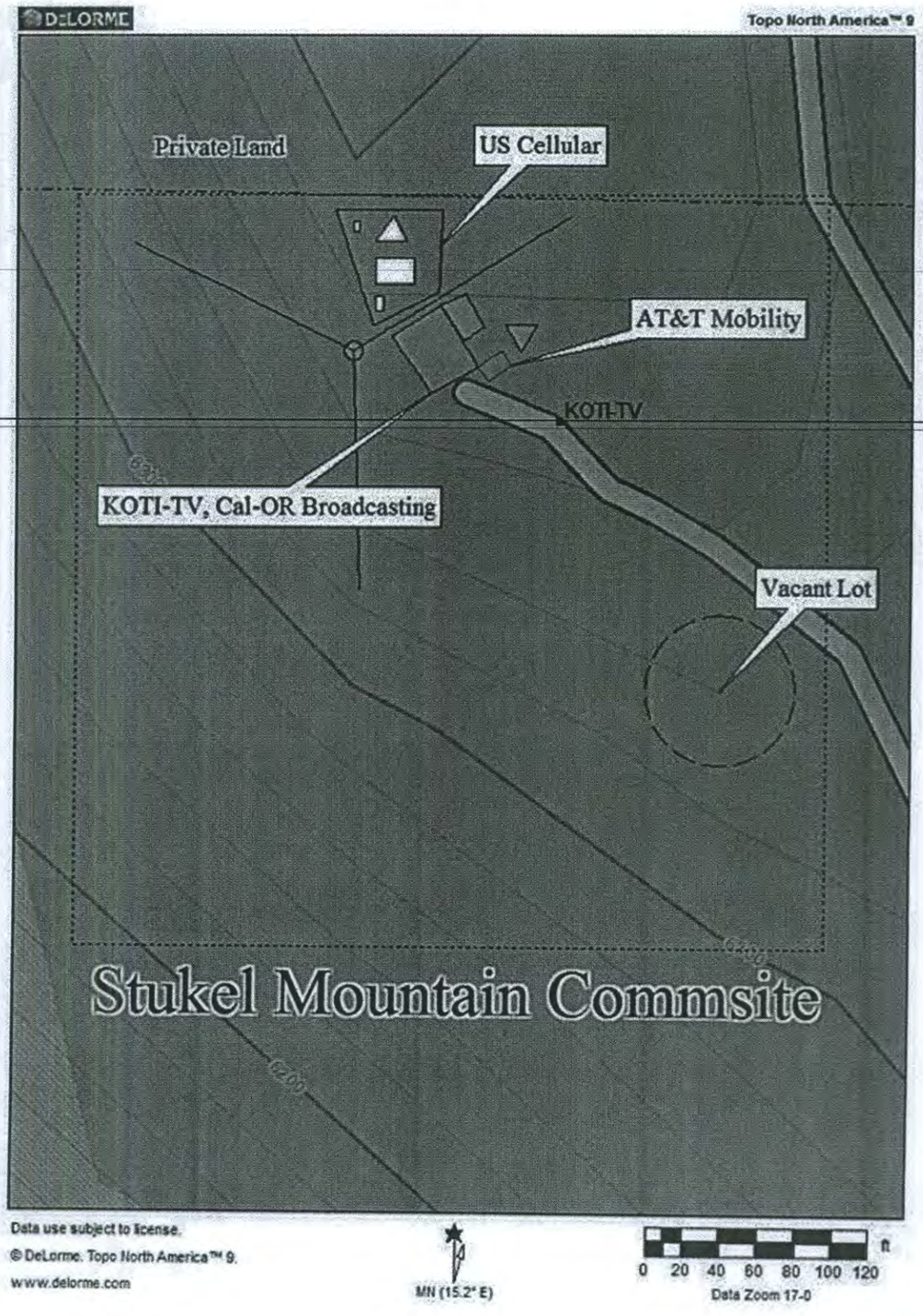
D. Inspection Checklist

APPENDIX A

LOCATION MAP



SITE MAP


DeLORME
Topo North America™ 9
Private Land
US Cellular
AT&T Mobility
KOTI-TV
KOTI-TV, Cal-OR Broadcasting
Vacant Lot
Stukel Mountain Commsite
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
MN (15.2° E)
0 20 40 60 80 100 120 ft
Data Zoom 17-0

APPENDIX B

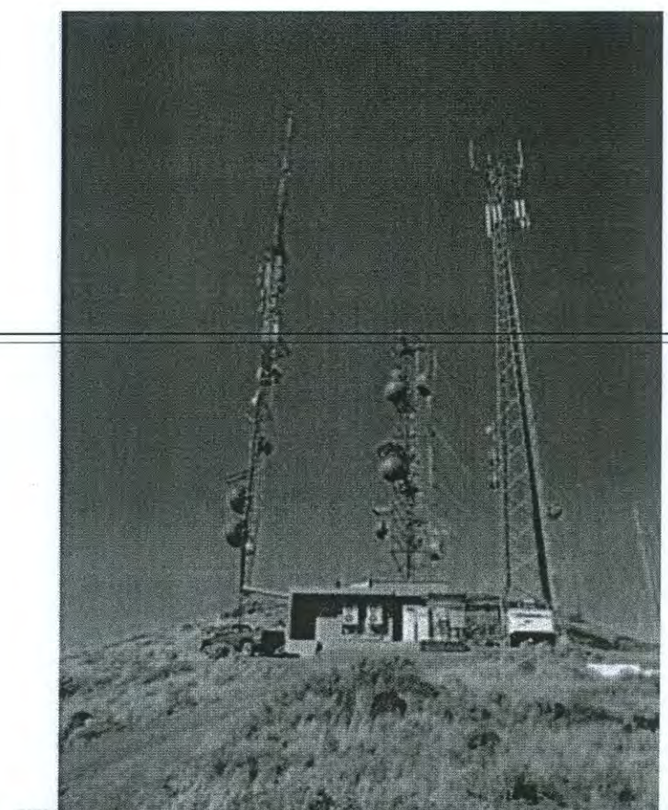
STUKEL MOUNTAIN COMMUNICATIONS SITE LESSEE/HOLDER FACILITY TABLE

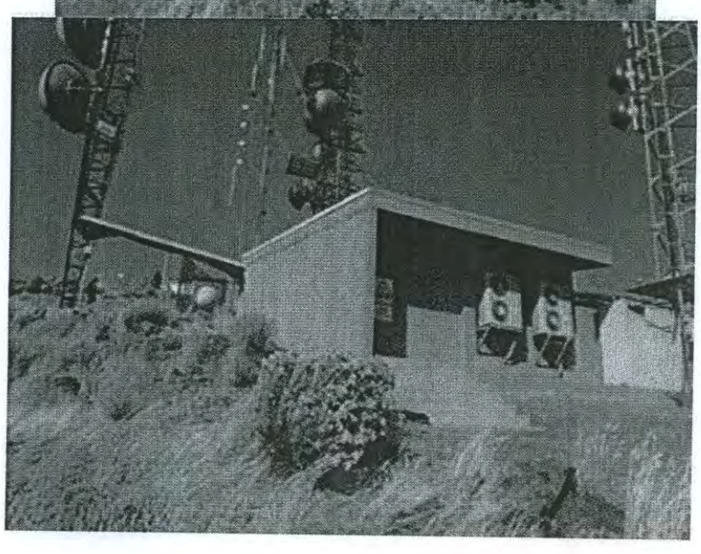
	Auth #	Use	Building	Tower	Access/Parking	Other
Facility #1 Calif-Oregon Bdcst Inc. KOTI	**OROR 35373**	**TV**	**30'x 45' block**	**180' guyed 140' lattice self support**	**Access and parking. 6.3 miles x 30'**	**2-1000 gal. propane tanks**
Facility #2 AT&T Mobility	**OROR 65377**	**CEL**	**Outdoor cabinet**	**On Ca-Or 140' tower**	**Access and parking. 6.3 miles x 30'**	
Facility #3 US Cellular	**Unauthorized**	**MIC**	**12'x20' prefab aggregate**	**100' lattice**	**Access and parking. 6.3 miles x 30'**	**2-500 gal propane tanks Generator Fence 71'x 56'x 45'x 38'**

APPENDIX C

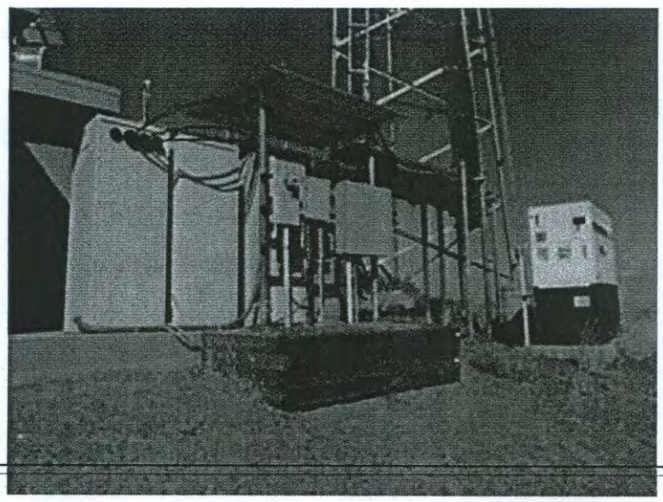
SITE PHOTOGRAPHS

California-Oregon Broadcasting, Inc.

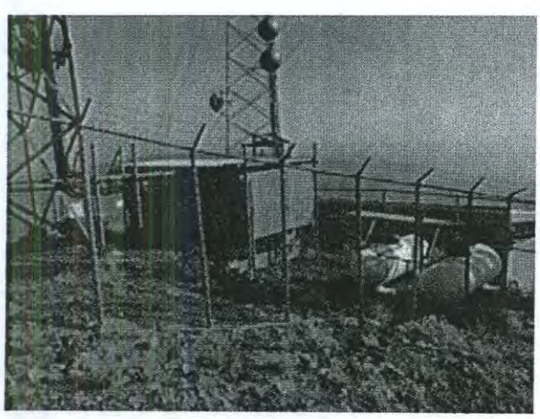


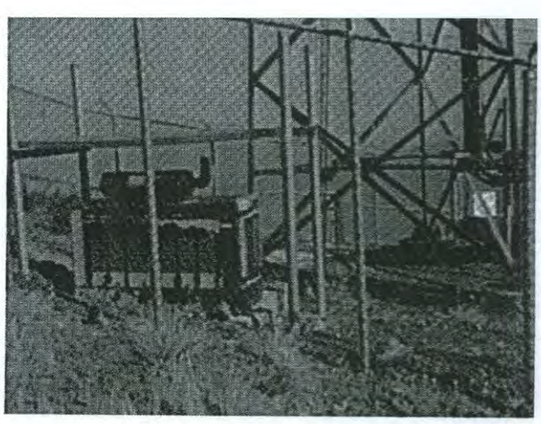


AT&T Mobility



US Cellular





Vacant Lot

APPENDIX D

"Stukel Mountain Annual Technical Inspection"

Date Inspected: _____ Time Inspection: _____

Permit Holder: _____ Authorization # _____

Site Technician: _____ Phone # _____

Number of Transmitters _____ License Posted _____

Please mark the following Items as Acceptable (A) or Unacceptable (U).

Electrical Wiring ---------- (A) (U) Grounding ---------- (A) (U)

Equipment Installation ---------- (A) (U) Housekeeping ---------- (A) (U)

Building Repair ---------- (A) (U) Tower Repair ---------- (A) (U)

Please mark the following Items as Yes (Y) or NO (N) or (NA)

Isolators ---------- (Y) (N) (NA) Circulators ---------- (Y) (N) (NA)

Cavities ---------- (Y) (N) (NA) Terminators ---------- (Y) (N) (NA)

Filters ---------- (Y) (N) (NA) Lightning Protection ---------- (Y) (N) (NA)

Comments: _____

_____

Recommended Corrective Action: _____

_____

_____

Required Corrective Action to Be Taken: _____

_____

_____

_____

_____

Committee Representatives: _____

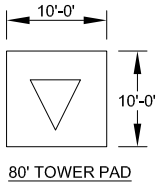
Bureau of Land Management Representatives: _____

Please make the required corrective action within the next 120 days. Please make a written report of corrective action taken and submit to the BLM. If you should have any questions, please call the BLM office.

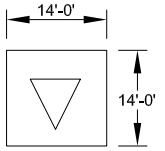
ATTACHMENT 5

Tower Elevation Drawings

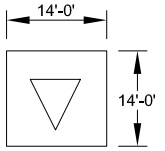
ITEM	FACILITY TYPE & NAME	COUNTY	LANDOWNER	MX. TOWER HEIGHT (INCL. ANTENNA)	DESCRIPTION
1	ROBINSON BUTTE COMM. SITE	JACKSON	FOREST SERVICE	80 FT.	SELF SUPPORTING NO GUY WIRES
2	BLUE RIDGE COMM. SITE	COOS	BLM	120 FT.	SELF SUPPORTING NO GUY WIRES
3	(KENYON) SIGNAL TREE COMM. SITE	COOS	BLM	125 FT.	SELF SUPPORTING NO GUY WIRES
4	FLOUNCE ROCK COMM. SITE	JACKSON	BLM	165 FT.	SELF SUPPORTING NO GUY WIRES
5	STUKEL MTN. COMM. SITE	KLAMATH	BLM	180 FT.	SELF SUPPORTING NO GUY WIRES



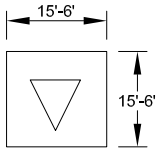
80' TOWER PAD



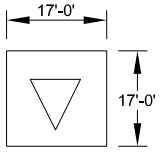
120' TOWER PAD



125' TOWER PAD

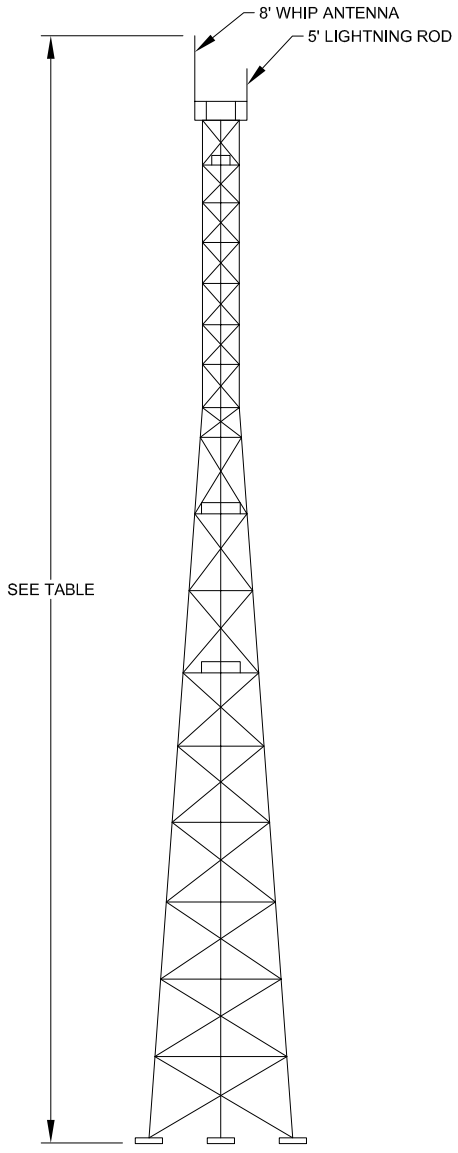


165' TOWER PAD



180' TOWER PAD

PAD DIMENSIONS FOR TOWER HEIGHTS



TYPICAL COMMUNICATIONS TOWER

REFERENCE DRAWINGS		REVISIONS						
DRAWING NO.	TITLE	NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.
		-	-	MTC	ISSUED FOR REVIEW		CA	EM
		-	09/17/19	PGD	REMOVED ABVA #4 DUE TO RELOCATION		DM	JW

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
PIPELINE TOWER
ELEVATION DETAILS

Pacific Connector GAS PIPELINE

DRAWN BY: AA	DATE: 05/11/18	ISSUED FOR BID:	SCALE: NONE
CHECKED BY: HO	DATE:	ISSUED FOR CONSTRUCTION:	
APPROVED BY: NPR	DATE:	DRAWING NUMBER: ATTACHMENT - 5	SHEET 1 OF 1

Pacific Connector Gas Pipeline, LP

Contaminated Substances Discovery Plan

Pacific Connector Gas Pipeline Project

September 2019

Table of Contents

List of Attachments

Contaminated Substances Discovery Plan

1.0 INTRODUCTION

The intent of this Contaminated Substances Discovery Plan is to outline practices to protect human health and worker safety and to prevent further contamination in the event of an unanticipated discovery of contaminated soil, water, or groundwater during construction of the Pacific Connector Gas Pipeline Project (Pipeline).

2.0 SITES WITHIN CONSTRUCTION AREAS

Pacific Connector Gas Pipeline, LP (PCGP) completed a review of the Oregon Department of Environmental Quality (ODEQ) Environmental Cleanup Site Information Database (ECSI) to assess the presence of known or potential contamination from either Landfills or Hazardous Waste Sites. Several sites have been identified as potentially occurring within the Pipeline construction area. These sites are primarily within proposed pipe yards, which are often located in disturbed/vacant industrial sites, many of which were former lumber mills or log storage yards. Use of pipe yards would not involve excavation or other activities that would interact with contaminated areas. The Jordan Cove Meter Station (MP 0.00) is the only location associated with the Pipeline where excavation would have the potential of encountering known contamination.

2.1 MPs 0.0 to 0.14 Construction Right-of-Way and TEWAS 0.01-W and 0.01-N

At the Jordan Cove Meter Station (MP 0.00), the Pipeline is approximately 0.2 mile south of the Weyerhaeuser North Spit Landfill LUST (leaking underground storage tank) site (site id [log number] 06-89-0061) and ECSI site 1083; this is the same site as the Weyerhaeuser Containerboard/Mill property. ODEQ records indicate that the permitted landfill cells and settling basins have leaked over time contributing to a localized area of groundwater contamination. Petroleum hydrocarbons are present in subsurface soils and groundwater from these past mill operations/practices. These contaminants primarily consist of petroleum constituents from fuel, fuel oil, lubricants, solvents, and hydraulic oil. The extent of the hydrocarbon removal will be based on final structural fill/soil improvement requirements and subject to ODEQ approval (JCEP 2017). In 2003, Weyerhaeuser shut down the mill and cleanup was reviewed by the ODEQ. It was determined that no further action was deemed necessary at this site. Fort Chicago Holdings II U.S. LLC purchased the Weyerhaeuser parcel in 2012. Milepost 0.00 and the Jordan Cove Meter Station are approximately 980 feet south of the estimated center-point of the mill area.

Based on available information (Delta Environmental 2006; JCEP 2017), the southern portion of Jordan Point was formerly used as a disposal area for mill-related fill and construction debris. This area is presently an open field vegetated with grasses and small shrubs. These activities were conducted for a period of approximately five to ten years during the 1960s and ceased by approximately 1970. According to the previous site investigations and studies, it appears that fill was primarily concentrated in a former ditch and low-lying area in the general area of about MPs 0.12 and 0.20. According to previous site investigations and studies, fill consisted of metal plates and scrap, wire, and discarded building materials, including asbestos-containing transite siding. The transite siding consisted of “scrap” pieces of siding, such as cutouts for piping that were derived from the installation of transite siding on buildings (primarily at the mill/paper machine

building) at the site. Therefore, pieces of transite siding in the fill/debris are relatively small, and the overall volume is thought to be limited (Delta Environmental 2006).

As excavation and other construction activities occur in this location, PCGP would adhere to the Human Health, Worker Safety, and Environmental Protection guidelines (see Section 4.0 below), and would coordinate activities with ODEQ in this area.

2.2 K-2 Pipe Yard

At the proposed K-2 Pipe Yard, ECSI site 527 is associated with the Weyerhaeuser Expert Services location. The site was historically developed for use as a lumberyard in the 1880's. Since then, it has been used for sawmill/timber related uses. Weyerhaeuser developed the property in 1950 for lumber export services operations. Weyerhaeuser operations included a sawmill, a planer building, a green sort building, a green chain, a machine shop, a paint shop, and a powerhouse. Finished wood products were treated with pentachlorophenol in the green sort building area prior to being packaged and exported. There was a pentachlorophenol spill on March 24, 1984. There was also an approximate 1,000-gallon spill of NP-1 anti-sapstain in March 1987. Contamination in this area is approximately 8 feet below the ground surface, and is currently capped with asphalt. In January 2009, ODEQ selected leaving the contamination in place, but required that the cap remain intact and that a plan be developed to guide future developers on how to manage the soils in the unlikely event that the soils were ever disturbed. The plan was developed and is referenced in a deed restriction on the property that will apply to the current owner and any future owner of the property. ODEQ issued a conditional no further action letter on July 14, 2009.

This site has been capped and use of the site with a condition of no excavation is consistent with the current status of the remedial action guidance. There is no risk of impact based on the proposed surface use of this area as a pipe yard.

2.3 Brunell Pipe Yard

In this proposed yard, Champion International LUST site (06-90-0009) was a diesel spill in 1990 and was remediated the same year; the log file has been closed. Also in the pipe yard is Central Dock Company LUST site (06-93-0042). This was a leaded gas spill in 1993 that contaminated soil, groundwater, surface water, and drinking water. The site was cleaned up and remediated the same year, and the log file has been closed. The third site is the Central Dock site (ECSI 4646) location, which was a Standard Oil and Union Oil petroleum, product-related warehouse facility dating from at least 1911 through approximately 1945. From 1945 to 1993, the property was used for log and lumber storage, handling, and shipping. From 1993 to 1996, Hall-Buck Marine, Inc. operated a copper ore concentrate handling and shipping facility on the property. The property has been vacant since 1996. Soil, sediments, and/or groundwater at or near the property have been contaminated by petroleum compounds and/or metals, primarily arsenic and copper. Remediation was to include capping the entire upland property and implementing institutional controls (no excavation, groundwater extraction, etc.). While portions of the area have been capped, aerial photography shows that some areas have not been capped.

PCGP believes that there is no risk of impact based on the proposed surface use of this area as a pipe yard.

2.4 Coquille Yard

PCGP reviewed the information for the Georgia Pacific Mill site (ECSI 1255) within this yard. Testing of the site in 1992 indicated selected areas had long-chain hydrocarbon contamination in the south conveyor tail drum area, around the north lathe bases and in one area of the south lathe bases, in the vicinity of the press pits, and areas of drum and hydraulic oil tank storage. A subsequent 1994 report for the former LUST area identified benzene and xylenes in the groundwater, found asbestos in on-site debris piles, and detected polychlorinated biphenyls (PCBs) in soils at a transformer area. A work plan for the site by the City of Coquille (site owner) was approved by ODEQ in 1994, and sampling and remediation were conducted in 1995. Contaminated soil was removed and treated in a soil treatment area and the site was encapsulated with fill dirt from ODOT. In 1998 the ODEQ recommended No Further Action for the site.

This site has been remediated, and use of the site with a condition of no excavation is consistent with the current status of the remedial action guidance. There is no risk of impact from use as a pipe yard.

2.5 Millington 1 Pipe Yard

At this location, there is one LUST site (06-98-0036) at the edge of the pipe yard. This site had a reported spill of diesel that contaminated soils and groundwater in 1998. This site has been remediated and the log file has been closed. There is no risk from use as a pipe yard.

2.6 Winchester Pipe Yard

This was the location of the former Winchester Mill (ECSI 4441). Contaminants at the site include carbon tetrachloride, trichloroethylene, perchloroethylene, and 1, 2-Dichloroethane located within the old log pond soils. As these contaminants are in the old log pond, and this pond area would not be disturbed by use as a pipe yard, there would be no impact.

2.7 Hult Chip Yard 2

There is one LUST site within the proposed pipe yard. Reporting shows the site had spilled waste oil. This site was remediated in 1991 and the site closed out. As no excavation would occur from use as a pipe yard, there would be no impact.

3.0 SITES IN PROXIMITY TO PIPELINE PROJECT AREA

ODEQ's Potential Contaminated Sites (PCS) database (ODEQ 2017) was reviewed for PCS sites that are located within 200 feet of proposed construction disturbance and associated facilities. These sites were queried by PCGP in response to a FERC request, but these sites are not in proximity to the Pipeline, and there are no anticipated impacts.

3.1 Menasha Pipe Yard

At this location, LUST site 06-98-0006 occurs at the edge of the pipe yard. A leaking diesel tank was recorded, and cleanup was completed in 1998. No further action is required.

The Chambers Fuel Oil Inc. (ECSI 22) operated as a heating oil storage and distribution facility from 1954 to 1988 at the south end of the proposed pipe yard. At the end of facility operation in 1988, ODEQ's Southwest Region office required Chambers to empty its tanks and remove on-site asbestos. Coos County assumed ownership in 1990 due to tax default. ODEQ's Site Assessment program completed a Preliminary Assessment at the site in 1991 and concluded that further investigation was required. ODEQ conducted a Site Investigation and Removal Assessment in early 1994 that confirmed oil contamination in the soil and groundwater. A security fence was installed around the site in June 1994, and ODEQ removed some drums from the site in November 1994. Over 300 tons of soil contaminated with total petroleum hydrocarbons (TPH) and 80,000 gallons of contaminated groundwater were removed in 1997. The site was then backfilled with clean sand and regraded and is considered remediated. There would be no excavation at the pipe yard, and there is no impact anticipated at this location.

Ninety feet south of the Menasha Pipe Yard, there is one LUST site (06-16-1330). A leaking tank with miscellaneous petroleum (gas) products was recorded at this location, and cleanup is still underway. No further action is required for this location given the distance from the pipe yard.

3.2 K-2 Pipe Yard

Approximately 30 to 150 feet north of the K-2 Pipe Yard is the KO-KWEL Wharf Development sites (LUST 06-06-1367 and ECSI 4802). Contaminants include polycyclic aromatic hydrocarbons (PAH), trace metals, and other diesel and heavy-oil range petroleum hydrocarbons. Potential exposure pathways evaluated in the site risk assessment included occupational (indoor), construction, and excavation worker exposures to site soils and groundwater. A final report received on May 14, 2007 summarized the results of four separate site investigations in which more than 250 soil, groundwater, and sediment samples were collected. The report also included a comparison of all site contaminant concentrations to relevant ODEQ risk-based screening standards. The report concluded that all identified contaminants were below ODEQ's levels of concern, and therefore no remedial actions, engineering controls, or institutional controls were necessary to protect human health or the environment. ODEQ concluded that based on the information presented to date, the KO-KWEL Wharf Development Project site is currently protective of public health and the environment and requires no further action. No impact is expected given the distance to the pipe yard.

3.3 TEWA 7.44-W

LUST site 06-10-0979, heating oil associated with a residential home, is approximately 160 feet from TEWA 7.44-W. This site was remediated and closed in 2010. No impact is expected based on the distance from the TEWA.

3.4 Coquille Yard

LUST site 06-90-0120 is approximately 148 feet north of the Coquille Yard. This location is associated with a Texaco gas station. Cleanup was completed in 2004, and no further action is required and no impact is anticipated.

3.5 Green #1 Pipe Yard

Horizon Auto Body & Glass ECSI sites 2287 and 1960 are approximately 125 feet south of the Green #1 Pipe Yard. This location had several cleanup issues: contaminated runoff from the vehicle wash bay; spillage from several open-top drums containing wash rack sludge; and leakage from several paint-related waste storage containers, including contamination by PAHs, metals, and VOCs. A site assessment completed in October 2014 and July 2015, showed low levels of petroleum contamination remaining in shallow soils (less than one foot deep) that appear to be mostly found between the two buildings. The contamination does not appear to have migrated off-site. The site and surrounding properties are used for commercial/industrial purposes. The area is supplied by a municipal water source. Based on the available information from ODEQ, Horizon Auto Body and Glass is currently protective of public health and the environment, and no impacts are anticipated given the distance from the pipe yard.

3.6 Green District Pipe Yard

LUST site 10-91-0075, associated with Granny's Hut gas station, is approximately 30 feet from the Green District Pipe Yard. Cleanup of this location was completed in 1998, and no impacts are anticipated given the distance from the pipe yard.

3.7 Weaver Highway 99

LUST site 10-10-0244 is approximately 127 feet north of the Highway 99 Hay Field Pipe Yard. This location is associated with the Freeway Chevron gas station. There was physical damage to a diesel tank in 2010, and no further information is available for this location. Given the distance to the pipe yard, and location of the LUST, no impacts are anticipated.

3.8 Riddle Pasture and Riddle Main Street Pipe Yards

ECSI site 2250 is approximately 45 feet east of the proposed Riddle Pasture Yard, and the Tosco Bulk Plant is immediately adjacent to the pipe yard. The Tosco Bulk Plant No 0645 is approximately 80 feet from the Riddle Main Street Pipe Yard and includes ECSI Site 630 and LUST site 10-12-0517, which are associated with a Riddle Shell Gas Station LUST. The sites have contamination from BTEX and PAH in soils and groundwater. Site characterization and remediation are still underway; access to the pipe yards is expected to avoid these locations. No impacts are anticipated.

3.9 Thompson Mining Property

The USDA Forest Service has expressed concerns for the potential for naturally-occurring mercury to reach the aquatic environment during construction of the Pipeline near the historic Thomason mining property (near MP 109). The USDA Forest Service contracted with a geologist consultant to collect soil and stream sediment samples for analytical testing and reporting of mercury and other naturally-occurring minerals along a 2,000-foot section of the proposed route between MP 109 and the East Fork Cow Creek (see Attachment 1 – Potential for natural-occurring mercury mineralization to enter the aquatic environment between MP 109 and East Fork Cow Creek). Geochemical analysis of the soil and stream sediment samples have been determined to have very low to nominal concentrations of naturally-occurring mercury mineralization. The mercury level at one of

the stream sediment sites was 0.29 ppm which was above the Level II screening level value of 0.1 ppm for invertebrates (ODEQ 1998). In order to prevent this naturally-occurring mercury from mobilizing during and after construction, additional erosion control measures and monitoring will be conducted at these sites. The report in Attachment 1 concludes that proposed pipeline construction activities by PCGP within the upper East Fork Cow Creek watershed are not anticipated to disturb and expose soils and bedrock strata that contains more than low amounts of natural-occurring mercury mineralization; and any sediment that is generated is not likely to reach the aquatic environment due to implementation of short-term and permanent mitigation measures outlined in PCGP's Erosion Control and Revegetation Plan and as listed in Attachment 1 of this plan.

4.0 HUMAN HEALTH, WORKER SAFETY, AND ENVIRONMENTAL PROTECTION

Of the sites investigated, the only known areas that may be impacted by grading/excavation activities are at the Jordan Cove location. This includes the right-of-way from MPs 0.00 to 0.14, Block Valve Assembly #1, and TEWAs 0.01-W and 0.01-N. At the Jordan Cove location, PCGP will follow the process of this Contaminated Substances Discovery Plan. Since the identified locations are known prior to construction, qualified PCGP staff or qualified contractor personnel will collect representative samples of the debris/fill for laboratory analysis as determined necessary by ODEQ based on the status of the site at the time of construction in the grading and excavation zone.

If contaminated materials are identified in laboratory analysis, the contaminated material will be removed and properly disposed of in accordance with appropriate federal and state regulations pertaining to asbestos containing waste. PCGP will utilize an environmental contractor with experience and expertise in contaminated media to characterize the excavation area. If necessary, the excavation area will also be prepared and excavated by a firm appropriately credentialed for the handling and management of asbestos or other hazardous materials. Where the removed fill must be stockpiled pending characterization or regulatory approval, PCGP will take precautions to isolate the substances (e.g., appropriate liner for storage area, berms, etc.). In addition, PCGP will ensure workers are trained in hazard control measures that will be used at the site (e.g., respirators, protective clothing, decontamination techniques, etc.; OSHA standards 29 CFR 1910) as required by pertinent worker safety regulations. If contaminated fill is encountered that requires off-site disposal at a licensed disposal site, the material will be handled, containerized and transported appropriately. Clean backfill will be utilized to backfill excavations. This approach is consistent with ODEQ recommendations for this general area (e.g., ODEQ - No Further Action Determination Letter, Former Weyerhaeuser Containerboard Mill North Bend, Coos County, Oregon Tax Lots #25S-13W-4-100, 25S-13W-3-200,).

PCGP will also include pipeline contractor training regarding site status and history and that excavation and disturbance is to be limited. No excavation will be allowed without PCGP's knowledge and approval.

Potential pipe yards would be used to store pipe, equipment, or other construction supplies and materials. Minor surface grading would be limited to pushing berms as needed to support pipe joints, or other shallow grading (< 1-foot of ground disturbance). Based on current documented conditions, PCGP does not believe that this limited use of these sites would result in a potential effect to human health, worker safety, or the environment. However, prior to use of these sites, PCGP will consult with ODEQ to confirm that the proposed use is consistent with those approved under the various assessments and determinations. If there is a concern, PCGP would bring in clean fill to create a lift of uncontaminated material on the surface area intended for use.

PCGP will include pipeline contractor training, per OSHA requirements, regarding anticipated site status and history and that site excavation and disturbance is to be limited. No excavation will be allowed without PCGP's knowledge and approval.

5.0 UNANTICIPATED CONTAMINATION

PCGP believes the potential for encountering unknown contamination has been minimized to the extent practicable. However, it is not possible to completely preclude this potential, especially considering private land sites may contain unreported contamination resulting from third-party activities.

Since not all potential occurrences or actions can be reasonably predicted, the overarching objectives of those actions taken when contaminated material, regardless of media, is discovered are to: (a) protect human health and the environment, (b) inhibit or prevent the further spread of contamination and (c) remediate the contamination to the extent practicable, within the constraints of (a) and (b). It should also be recognized that immediate actions in the field to protect workers may not be the alternative that is most protective of the environment. Each condition and situation would be viewed as a unique condition and evaluated individually.

In the event unanticipated contaminated soil, water and/or or groundwater is encountered during construction (i.e., discolored soils, soils or groundwater with hydrocarbon-type odors or other chemical odors, etc.), the following general procedures will be implemented:

1. All construction work in the immediate vicinity of areas where hazardous or unknown wastes are encountered will be halted.

2. All construction, oversight, and observing personnel will be evacuated to a road or other accessible up-wind location until the types and levels of potential contamination can be verified by qualified staff.

3. PCGP's Chief Inspector and Environmental Lead will be notified. Following consultation with on-site personnel, the Environmental Lead will be responsible for designating follow-up actions, including mobilizing emergency response personnel and coordinating with the EPA and/or state and local agencies as appropriate. In the event of a spill or to report an emergency, PCGP personnel will also contact the Oregon Emergency Response System at (800) 452-0311, who will then notify the appropriate response agencies. If old contamination is encountered in Coos, Douglas, or Jackson counties, PCGP personnel will contact Mike Kucinski (ODEQ Cleanup Manager) at (541) 687-7331. If old contamination is encountered in Klamath County, PCGP personnel will contact David Anderson (ODEQ Cleanup Manager) at (541) 633-2012. If old contamination is encountered on federal lands, PCGP personnel will contact the land managing agency's contact personnel as listed in Attachment A of PCGP's Spill Prevention, Containment, and Countermeasures (SPCC) Plan.

4. If an immediate or imminent threat to human health or the environment exists, one of PCGP's emergency response contractors identified in the SPCC Plan or the National Response Team will be notified and mobilized. If an immediate or imminent threat to human health or the environment does not exist, or has been abated, PCGP or qualified contractor personnel will collect representative samples of the waste and surrounding materials for laboratory analysis. While waiting for the laboratory analytical results, reasonable and practicable measures will be taken to limit the further spread of contamination such as

covering affected soils with plastic, limiting and/or diverting the flow of surface water away from the affected area, or containing liquids in on-site containers.

5. The contaminated material will be removed and properly disposed of in accordance with appropriate regulations and ordinances and in accordance with Section VI of the SPCC Plan. Spill regulations, public safety and local solid waste ordinances may also be applicable depending on the release/waste type, level and type of threat posed and affected media. PCGP will, where feasible, comply with the regulatory notification and containment requirements. If the extent of contamination is too widespread for economical removal, or if disposal options are technically infeasible or cost-prohibitive, backfilling of that portion of the trench will be suspended until appropriate mitigation options are approved by regulatory authorities. Where hazardous substances or wastes must be stockpiled pending characterization or regulatory approval, PCGP will take precautions to isolate the substances (e.g., appropriate liner for storage area, berms, etc.).

In addition, PCGP will:

1. Ensure that a qualified person, who can recognize chemical contamination problems at the job site, is in charge of the cleanup project. Where necessary, PCGP will contact 911 to obtain 24-hr. Hazard Recognition/First Responder Trained personnel to be the first assessor of a potential release.

2. Ensure workers assigned to the cleanup are trained in the hazard control and safety measures that will be used at the site (e.g., respirators, protective clothing, decontamination techniques, etc., per OSHA 29 CFR 1910 standards).

If it is necessary to remove contaminated soils from the right-of-way, either from an accidental spill of materials during construction or if unknown and previously unsuspected pre-existing contamination is encountered, PCGP will replace the contaminated material with clean, uncontaminated soil that is weed free. The replacement soil will be verified to be clean before its use by sampling and analysis for total petroleum hydrocarbons gasoline range organics, total petroleum hydrocarbons diesel range organics, volatile organic compounds (VOC), semi-VOC, PCBs, and Resource Conservation Recovery Act metals in accordance with EPA testing methods. Additionally, PCGP's Environmental Inspectors will verify that the replacement soil is free of noxious weeds.

If contamination cannot be completely removed from an area, ODEQ will be consulted on appropriate remediation.

6.0 REFERENCES

Delta Environmental. 2006. Level II Environmental Assessment, Former Weyerhaeuser Containerboard Mill. April 2, 2006.

Jordan Cove Energy Project L.P. 2017. Resource Report No. 7, Soils. Docket No. CP17-495-000.

Oregon Department of Environmental Quality Guidance for Ecological Risk 1998. Assessment: Levels I, II, III, IV. Portland, OR.

Attachment 1

Potential for Natural-Occurring Mercury Mineralization to Enter the Aquatic Environment between MP 109 and East Fork Cow Creek

Potential for natural-occurring mercury mineralization to enter the aquatic environment between M.P. 109 and East Fork Cow Creek

Williams' Pacific Connector Gas Pipeline Project

Hydrologic Feature C – an intermittent (disrupted) stream channel and adjacent wetland on Forest Road 3200-500 (FIG. 5)

Prepared by

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Umpqua National Forest

November 18, 2009 (Revised February 3, 2010)

PURPOSE AND NEED

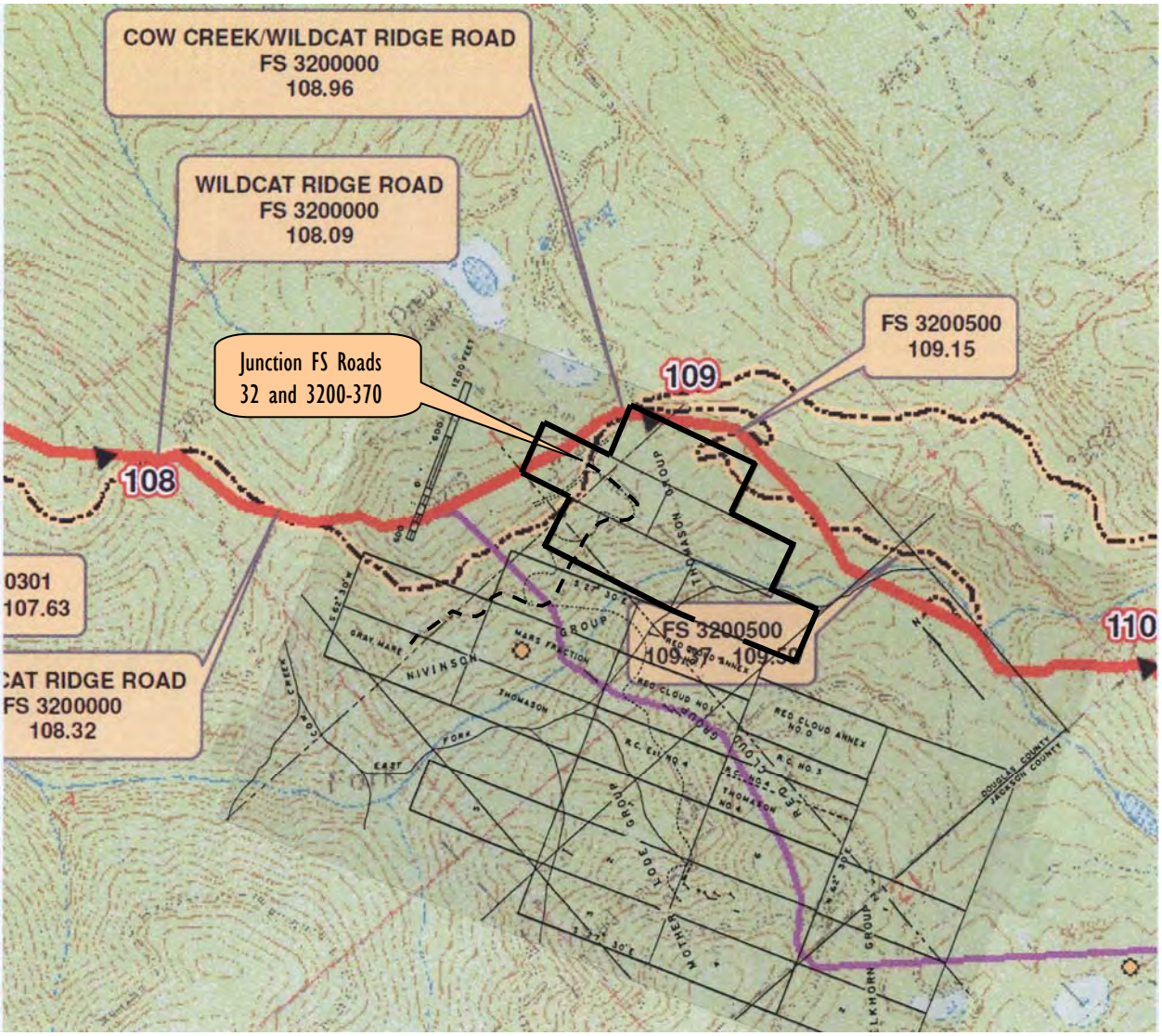
Wes Yamamoto, Resource Staff, Tiller Ranger District, Umpqua National Forest, requested my assistance to assess the potential for natural-occurring mercury reaching the aquatic environment as a consequence of Williams' Pacific proposed construction of a liquefied gas pipeline across the historic Thomason mining property. Prospecting and exploration activities occurred on these lode claims in the 1940's in search of mercury resources. This claim group encompasses a short segment of the finalized alignment located directly down slope from the junction of Forest Roads 32 and 3200-500 in the East Fork Cow Creek watershed[1] (FIG. 1). Yearlong residents of the upper Cow Creek watershed have voiced concern that pipeline construction activities in this locality may possibly intercept and expose soils containing native mercury; and that such disturbed sediment could be transported by surface erosion processes into the aquatic ecosystem. These residents have apprehension about water quality, specifically for domestic use.

My effort in this project consisted of collecting a number of soil samples for analytical testing of mercury and other naturally-occurring mineral substances along a 2,000-foot section of pipeline alignment extending from M.P. 109 to the East Fork Cow Creek, with focus on the area encompassing the historic Thomason claim group. I also collected several stream sediment samples along the main stem East Fork Cow Creek and its principal tributaries upstream from where the pipeline alignment first crosses the East Fork Cow Creek to ascertain if elevated (anomalous) amounts of mercury are present higher in the drainage system.

BACKGROUND

Lewis Thomason was among the original group of miners that staked numerous claims throughout the East Fork Cow Creek watershed beginning in the late 1920's. Throughout the 1930's and into the early 1940's miners conducted prospecting and exploration activities to uncover economic deposits of mercury mineralization throughout the area. The principal mercury property in the locale is the Red Cloud mine. This property reportedly produced at least 6 flasks (and possibly as many as 63 flasks) of elemental mercury or quicksilver by roasting cinnabar-bearing vein material in an on-site rotary furnace or retort (Ramp, 1963, p. 57).

[1] The spatial configuration of the Thomason claim block depicted in FIG. 1 is derived from a survey conducted in the early 1940's by an unknown author, as reported by Brooks (1963, Fig. 20, p. 59). Unfortunately, this survey map does not conform well spatially with topographic and cultural features when superimposed onto the 7.5-Minute Series, Richter Mountain 1:24,000 USGS 1989 topographic map. FIG. 1 provides the best approximation of the spatial configuration of the Thomason claim group with respect to the junction of Forest Roads 32 and 3200-370 and the historic Red Cloud mine site, features that are common to both map documents. Even doing so, the relative position of the East Fork Cow Creek differs considerably on these maps. I scaled the early 1940's survey map as a transparent overlay and placed it over a scanned version of PCGP's USGS Quad Based Transportation Map - Sheet No. 16 of 55, Drawing No. 3430.31-Y-016. The spatial orientation of the Thomason claim block near the junction of Forest Roads 32 and 3200-500 differs from that depicted by GeoEngineers, Inc. in Figures 2, 3, and 5 in their Red Cloud Mine Report transmitted electronically by Lauri Dalton, PCGP Project Engineer to Wes Yamamo on September 10, 2007. GeoEngineers, Inc. interpretation places the the intersection of Forest Roads 32 and 3200-370 in the center of a wetland depression (sag pond) several hundred feet north of the junction of Forest Roads 32 and 3200-500.



Pacific Connector Gas Pipeline Project, LP
USGS Quad Based Transportation Map; M.P. 102.80 to M.P. 110.20, Douglas County, Oregon
Section of map shown is scanned from Sheet No. 16 of 55, Drawing No. 3430.31-Y-016, May 2009, Revision 5

FIG. 1 Williams' Pacific finalized pipeline alignment in near vicinity of the historic Thomason mining claims
Thomason claim group is outlined in a bold black line

The Thomason claim group consists of five unpatented lode claims that are approximately situated in the southeast quarter of section 16 of T. 32 S., R. 2 W., WM, Douglas County, Oregon (FIG. 1). Development on the Thomason Group is said to consist of at least 4 bulldozer trenches, each about 100 feet long and several shallow shafts and pits, all of which were dug by Mr. Lewis Thomason during the early to mid 1940's. Mr. Thomason is also said to have bored about 500 auger holes to depths of 6 to 8 feet, reporting favorable "pannings" over several acres. Few of these holes penetrated below the soil mantle and rock fragments (colluvium) into the underlying decomposed schistose bedrock of the Klamath Mountain terrain. Several narrow fault zones having approximately the same trend as those at the Red Cloud mine were exposed by trenching operations, but none of these surface workings are said to have contained an appreciable amount of cinnabar (Brooks, 1963, p. 62).

Detailed geologic mapping in the East Fork Cow Creek watershed (Murray and Kays, 2001) reveals that much of the hillside that extends from the ridgeline where Forest Roads 32 and 3200-500 join down to the East Fork Cow Creek encompasses an ancient, deep-seated landslide deposit (FIG. 2). The presence of gravity-transported (colluvial) soils associated with this landform provides a plausible explanation why Mr. Thomason's auger holes never penetrated into the underlying bedrock. The chaotic mixture of broken rock fragments and soil matrix in this landslide mass is largely derived from the cliff-forming ash-flow tuff unit, the Tuff of Bond Creek, located one air-mile to the east.

Prior to the current and finalized alignment of the Pacific Connector Gas Pipeline within the East Fork Cow Creek watershed, the prior pipeline right-of-way crossed the East Fork Cow Creek through the Mars Fraction, part of the Nivinson Group of mercury lode claims (FIG. 1). According to Brooks (1963, p. 62), the Nivinson mining property is said to be developed by numerous short mine adits (horizontal tunnels) and open bulldozer cuts. Pannings taken from mine adit dumps are reported to contain traces of cinnabar. The lower mine adit, cited to be about 100 feet in length on the north bank of the East Fork Cow Creek in a large open cut, was reported by local historians to have contained pieces of high-grade cinnabar float (Brooks, 1963, p. 62).

In June and July of 2007, GeoEngineers, Inc., consultant to Williams' Pacific, conducted extensive soil and stream sediment sampling at selected sites in the upper reach of the East Fork Cow Creek watershed for geochemical analysis, based on the presence of known mercury mineralization and past mining activities conducted in that area. GeoEngineers, Inc. collected 21 soil samples on June 17, 2007 at the following sites: along a one and a half mile segment of Forest Road 32 between spurs -300 and -370, waste dumps on the Mars Fraction lode claim, and waste dumps at the Red Cloud mine (FIGS. 3a-b). At their own discretion, GeoEngineers submitted these samples to Apex Labs located in Tigard, Oregon for analytical testing.

On July 18, 2007 GeoEngineers, Inc. collected an additional 42 soil and stream sediment samples at five locations in the upper reach of East Fork Cow Creek delineated by the Umpqua National Forest. These locations are identified as Sample Areas A, B, C, D, E, and F (FIGS. 3a-b). GeoEngineers, Inc. submitted these 42 samples to the ALS Chemex Laboratory located in Reno, Nevada for analytical testing.

Sample Areas A, B, and C are situated along the East Fork Cow Creek where stream sediment samples were collected. Sample Area A corresponds to a segment of stream channel below the confluence of an unnamed stream originating at the Red Cloud mine site. Sample Area B corresponds to a section of stream channel located below the Mars Fraction lode (Nivinson Group) and the unnamed stream draining the Red Cloud mine. Sample Area C corresponds to a reach of stream channel located approximately one-third mile above the Nivinson Group. Sample Areas D, E, and F reflect sites where historic mercury mining activities were conducted. Soil sediment samples were collected in the following three areas. Sample Area D coincides with a one-mile segment of Forest Road 32 situated between Forest Roads 3200-300 and 3200-330[2]. Sample Area E corresponds to samples collected in waste dumps on the Mars Fraction of the Nivinson Group. Sample Area F corresponds to samples collected in waste dumps on the Red Cloud mine site (FIGS 3a-b). All 42 soil and stream sediment samples submitted to the ALS Chemex Laboratory were tested for 49 chemical substances (analytes). The results of analytical testing collected at Sample Areas A, B, C, D, E, and F on July 18, 2007 are displayed in Table 3.

FIELD METHODS

On Saturday, October 10, 2009 I traversed on foot portions of the pipeline alignment between M.P. 109 and the East Fork Cow Creek looking for evidence of surface workings such as dozer cuts or shallow pits in near vicinity of the historic Thomason Group of lode claims and to collect soil samples for analytical testing. No historic surface workings were observed in vicinities that I walked. A string box was used to measure distances along Forest Road 3200-500 to points where foot traverses were made down slope to the pipeline's alignment to collect soil samples. Soil sample sites were marked on the ground with an 8-inch long wooded stake. Pink flagging was hung to nearby vegetation. A total of six soil samples were collected along this section of the pipeline alignment. In addition, I collected three stream sediment samples along the East Fork Cow Creek upstream from where the pipeline alignment crosses the East Fork Cow Creek. The location of the aggregated 9 soil and stream sample sites is depicted in FIG. 4.

Fine-textured soil and stream sediment samples, each averaging approximately two to three pounds weight, were collected with a stainless steel trowel and placed into a labeled zip-lock plastic bag sealed within another zip-lock plastic bag or "double bagged" as an precautionary measure against accidental leakage and contamination. Samples were subsequently wet-washed through an 80-mesh stainless steel sieve to reduce the bulk of samples for analytical testing. The stainless steel sieve was thoroughly washed between screenings to prevent contamination. The 80-mesh minus soil and stream sediment samples, averaging about half a pound weight, were again placed into labeled zip-lock plastic bags in similar fashion and transmitted to ALC Chemex Laboratory located in Reno, Nevada for geochemical analytical analysis.

[2] Analytical results from the 12 soil samples collected in road cuts along Forest Road 32 between spurs -300 and -330 (Sample Area D) reveal very low mercury values; ranging from below detectable limits to a high of 0.02 parts per million (ppm) or 0.02 mg/kg. In contrast, the highest reported mercury (Hg) values in surface workings and waste rock dumps on the Red Cloud mine property are 53.5 and 60.1 ppm (GeoEngineers, Inc., 2007).

ANALYTICAL METHODS

To maintain consistency, sample preparation and analytical procedures on the six soil and three stream sediment samples transmitted to ALC Chemex Laboratory are identical to those specified by GeoEngineers, Inc. for the 42 soil and stream sediment samples that this lab received on July 24, 2007. Sample preparation methods are described in TABLE 1 and sample analytical procedures are outlined in TABLE 2.

ALS Lab Code ID	Description
WEI-21	Received Sample Weight
LOG	Sample login – Received w/o BarCode
SCR-41	Screen to 180 um and save both fractions

TABLE 1 Sample preparation methods specified to ALS Chemex Laboratory

ALS Lab Code ID	Description
ME-MS61	48 Element four-acid digestion via ICP-MS[3]
Hg-CV41	Trace Hg – Cold vapor AAS[4]

TABLE 2 Sample analytical procedures specified to ALS Chemex Laboratory

[3] ICP-MS denotes inductively-coupled plasma-mass spectrometry

[4] AAS denotes atomic-absorption spectroscopy

EVALUATION

Twelve soil samples were collected by GeoEngineers, Inc. on July 18, 2007 at roughly equal-spaced intervals along a one-mile segment of Forest Road 32 situated between Forest Roads 3200-300 and 3200-330 (Sample Area D). Review of the geologic literature indicates that this area is located well outside the zone of mercury mineralization within the East Fork Cow Creek watershed (Brooks, 1963, p. 58-62; Ramp, 1972, p. 48-49, 54-58; Murray, 1994, p. 214-215, 218-219, 221-222, 226-227; Murray and Kays, 2001). Findings from the August 22, 2007 geochemical analysis disclose that all twelve soil samples contained very low levels of mercury (Hg) mineralization (Table 4). Mercury values ranged from below detectable limits to a high of 0.02 parts per million (ppm). These values are considered to reflect ambient background or baseline conditions for mercury in the local geologic environment; and thus afford a means of comparison to areas where elevated or anomalous amounts of mercury are present. The highest reported mercury values detected to date in the East Fork Cow Creek watershed are in waste rock (dumps) located on the historic Red Cloud mine property. The highest mercury values at this mine site are 53.5 and 60.1 ppm, reflecting a 3×10^3 increase (three orders of magnitude) above ambient background levels.

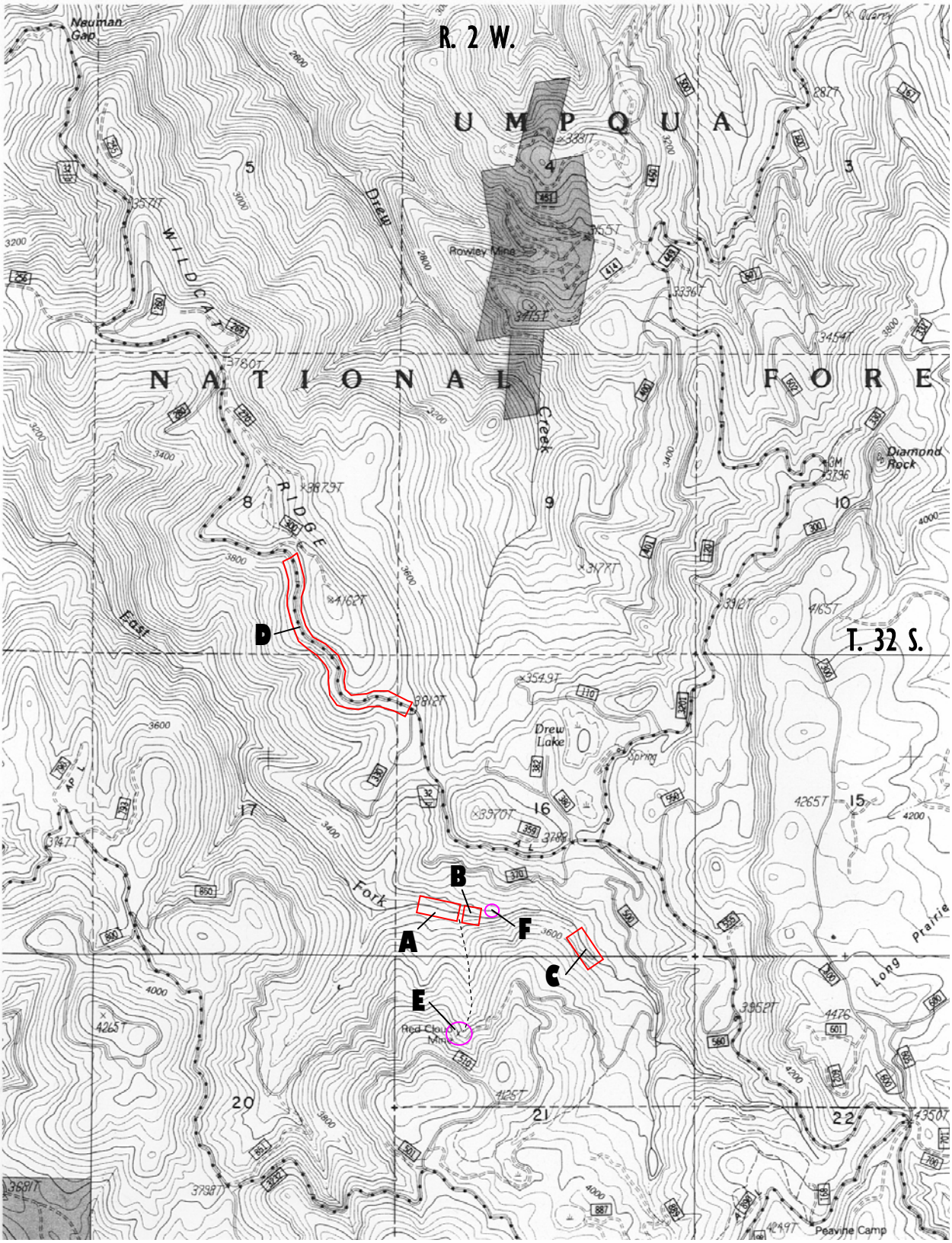


FIG. 3a Umpqua National Forest designated soil ○ and stream sediment □ Sample Areas A through F

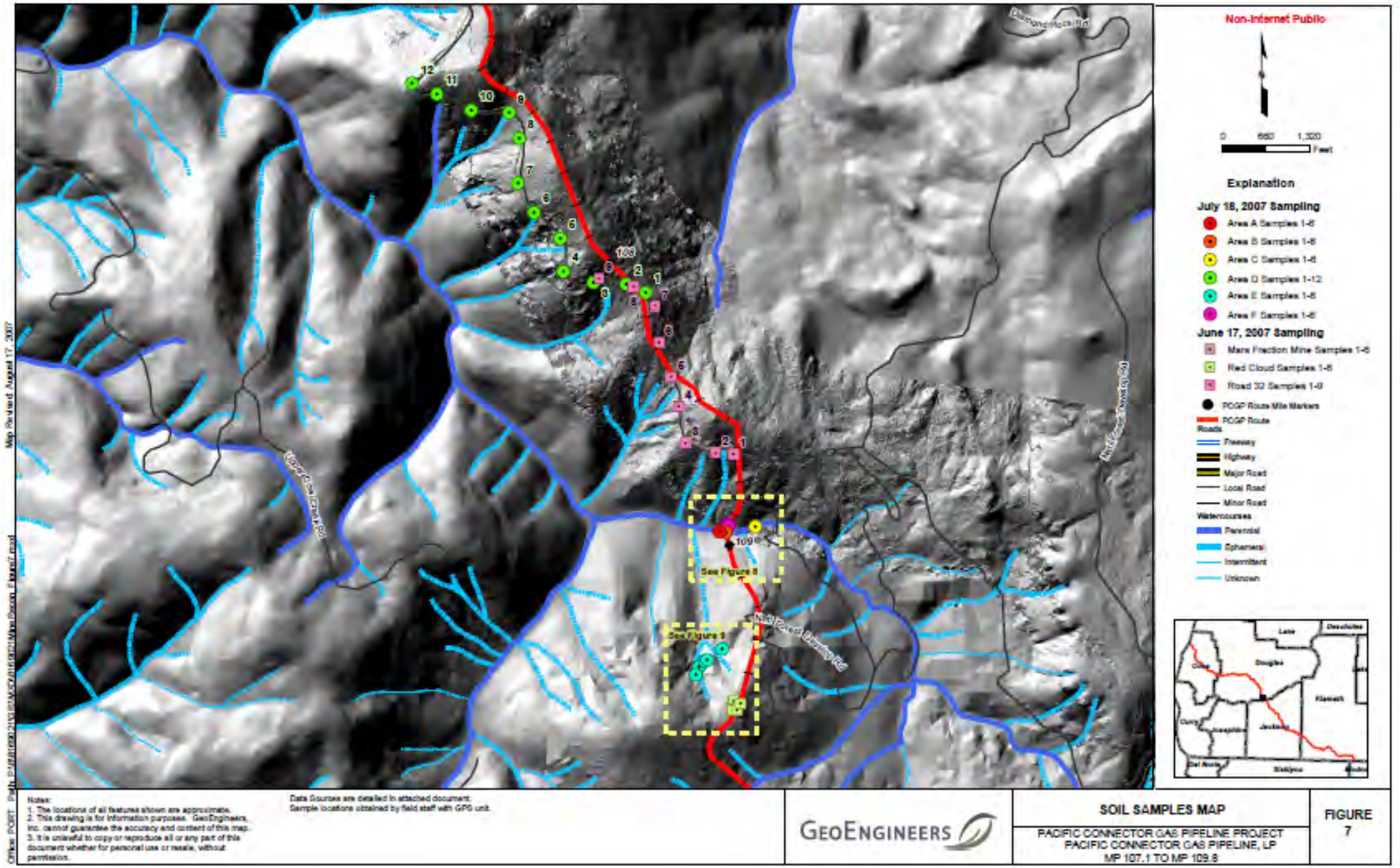


FIG. 3b Locations (Sample Areas A through F) where soil and stream sediment samples were collected by GeoEngineers, Inc. during their July 18, 2007 field investigation

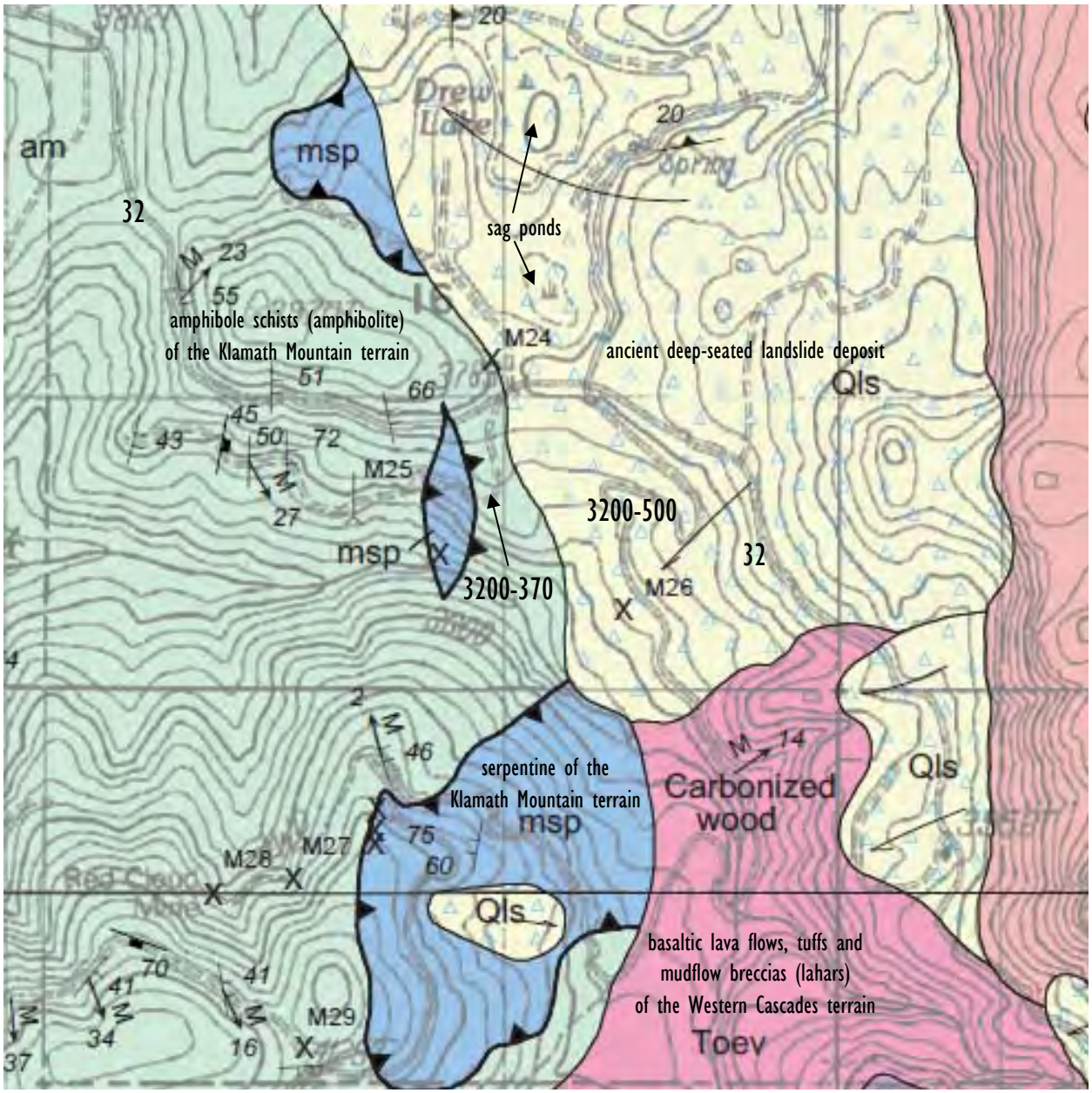


FIG. 2 Geologic map encompassing East Fork Cow Creek and surrounding area (Murray and Kays, 1991)

Contact -- Approximately located

Fault -- Dashed where inferred: ball and bar on downthrown block

Thrust fault -- Approximately located; sawteeth on upper (tectonically higher) plate

Minor fault (not traced) -- Showing strike and dip

Minor fault (not traced) -- Vertical or nearly vertical dip

Inclined joint -- Showing strike and dip

Minor inclined vein -- Showing strike and dip

Inclined bedding -- Showing strike and dip

Inclined cleavage -- Showing strike and dip

Vertical or near-vertical cleavage -- Showing strike

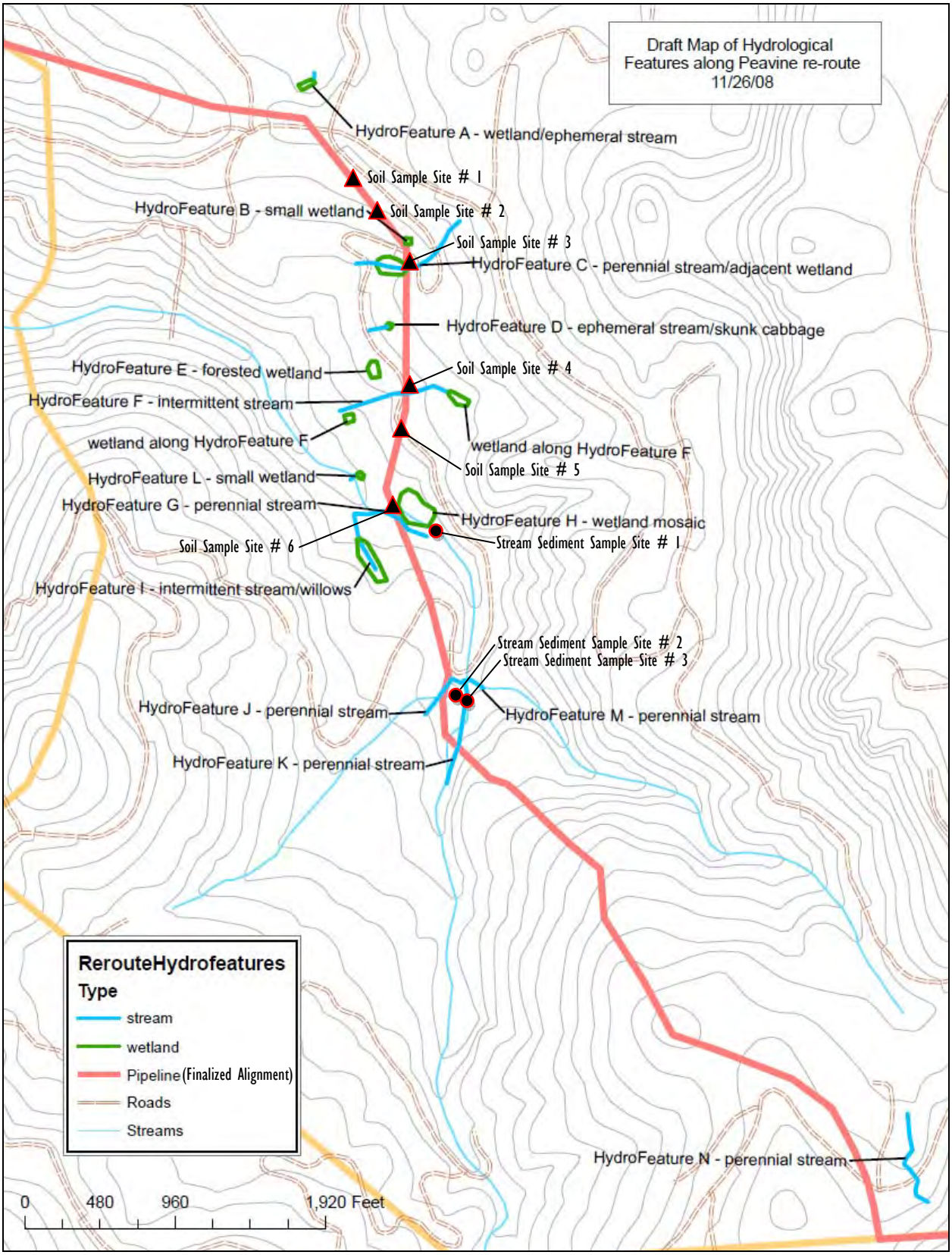


FIG. 5 Hydrologic features along the finalized pipeline alignment in the East Fork Cow Creek watershed
Field reconnaissance by Amy Rusk, District Hydrologist and Denise Dammann, Forest Hydrologist, November 26, 2008
Soil and stream sediment sample sites by Larry Broeker, Consultant Geologist to the Umpqua NF, October 10, 2009

On October 10, 2009 I collected six soil samples along the pipeline alignment between the intersection of Forest Roads 32 and 3200-500 and the East Fork Cow Creek, as well as three stream sediment samples; one on the mainstem East Fork Cow Creek and one on each of its principal tributaries higher in the system (FIG. 4). To maintain consistency and uniformity, these samples were submitted to the assay lab utilized by GeoEngineers, Inc., ALS Chemex, Inc. located in Reno, Nevada, employing the same sample preparation techniques and like analytical procedures. Findings from the November 16, 2009 geochemical testing for the six soil samples disclosed mercury values ranging from a low of 0.03 ppm (mg/kg) to a high of 0.09 ppm (mg/kg). All six soil samples had mercury values slightly above established ambient background levels of 0.02 ppm or lower indicating that the geologic environment in near vicinity of the historic Thomason mining claims contains very low concentrations of mercury. Results from the three stream sediment samples likewise revealed negligible mercury values; ranging from a low of 0.06 ppm (mg/kg) to a high of 0.29 ppm (mg/kg) (TABLE 4).

The Oregon Department of Environmental Quality (ODEQ) Level II Screening Level Values for ecological risk of mercury bioaccumulation[5] in freshwater sediment is 0.07 ppm (ODEQ, 1998; ODEQ, 2007). Two of the three stream sediment samples equal or exceed this threshold limit, EFCC-SS-1 at 0.07 ppm and EFCC-SS-2 at 0.29 ppm. Stream sediment sample EFCC-SS-2 taken from a tributary of the East Fork Cow Creek that drains a significant portion of an ancient earth flow landform located in section 21 of T. 32 S., R. 2 W. has a mercury value of 0.29 ppm. At least one unnamed mercury prospect has been identified in the upper reaches of this drainage. Presumably, if a sufficient volume of fine-textured sediment having mercury values in excess of 0.07 ppm is deposited into a water body with stagnant anaerobic conditions, the process of bioaccumulation can take place. Pipeline construction activities that transect the two principal tributaries forming the East Fork Cow Creek will inherently stir up sediment containing levels of inorganic mercury that equal or exceed the ODEQ threshold for bioaccumulation in fresh water sediment. Fine-textured sediment containing low levels of native inorganic mercury are continually being transported downstream in a relatively high-gradient stream channel of Cow Creek. This sediment is ultimately deposited and stored in Galesville Reservoir. This natural-occurring geologic process has been operative for countless millennia.

[5] Bioaccumulation refers to the process whereby mercury becomes increasingly more concentrated as it moves up through the food chain from absorption in vegetative matter to ingestion by living organisms, and ultimately, intake by humans. Inorganic mercury in the form of the mercury sulfide mineral (cinnabar) or its liquid elemental form (quicksilver) can readily be converted into an organic mercury compound (methyl-mercury) via bacterial action in an oxygen deficient (anaerobic) environment, such as that which occurs in muddy sediment at the bottom of a stagnant water body like a pond or lake. Vegetative matter in such an anaerobic environment absorbs the methyl-mercury, macro-invertebrates ingest the plant matter, bottom-dwelling fish swallow the macro-invertebrates, and humans consume the contaminated fish tissue. The Oregon Department of Human Services (DHS) generally issues advisories when the average mercury level in fish tissue from a particular water body is 0.35 ppm or greater. The average level of mercury found in fish from Galeville Reservoir is 0.69 ppm (Oregon Department of Human Services, 2001).

Two potential avenues for the transport of soil containing naturally-occurring mercury mineralization into the aquatic ecosystem as a consequence of proposed pipeline construction activities include: (1) perennial or intermittent streams that the pipeline alignment transects, and (2) the pipeline corridor or right-of-way itself.

Several intermittent streams do in fact traverse the finalized pipeline alignment along that segment of Forest Road 3200-500 extending from the intersection of Forest Road 32 and East Fork Cow Creek. These streams are identified as Hydrologic Features C and F (FIG. 5). Further field reconnaissance in this locality by Amy Rusk, Hydrologist, Tiller Ranger District and Denise Dammann, Forest Hydrologist on November 6, 2009 revealed that neither of these stream channels have direct connectivity with the East Fork Cow Creek. Both stream systems have disrupted flow patterns due to the "benchy" or stair-stepped ground topography associated with the ancient landslide deposit. Stream flow dissipates into the deep, gravity-transported (colluvial) soils on gently-sloping landslide benches and exudes as seeps and springs at the toe of adjoining scarps further downslope. Fine- and coarse-textured sediment being carried as bedload by either of these stream channels is deposited and stored on these benches. There is no direct connectivity for sediment generated from proposed pipeline construction activities to reach the East Fork Cow Creek.

The other plausible means for mercury-laden sediment to enter into the East Fork Cow Creek is from proposed construction activities along that section of the pipeline alignment construction extending from the intersection of Forest Roads 32 and 3200-500 and East Fork Cow Creek. Williams Pacific has developed in their (still in revision) Erosion Control and Revegetation Plan (ECRP) a number of temporary and permanent erosion control measures to minimize the potential for sediment to enter a wetland or water body (Williams Pacific, 2009).

Temporary or short-term erosion control measures (best management practices) are to be employed throughout the construction phase of the proposed pipeline; such measures being routinely monitored by an Environmental Inspector (EI) or authorized company representative. Along the pipeline construction right-of-way the following temporary erosion control measures are to be implemented:

(1) Sediment barriers consisting of silt fences or straw bales are to be installed to confine sediment; the number and distance between such structures to be determined by the EI. At present, the ECRP has not established distances between sediment barriers based on factors such as slope gradient, soil type, rainfall intensity, etc.

(2) Slope breakers constructed of soil mounds, silt fencing, staked straw bales, straw wattles, or sand bags are to be installed to reduce runoff velocity, concentrated flow, and to divert surface water in a manner to avoid excessive erosion.

(3) Mulch will be placed on disturbed ground prior to seeding, if it becomes necessary to delay final clean-up, including final grading and installation of permanent erosion control measures, beyond 20 days after the trench is backfilled.

Permanent erosion control measures (best management practices) are to be utilized to reduce sediment-transported pollutants and contaminants in storm water discharge following completion of all construction phases. Along the pipeline construction right-of-way, including temporary storage areas, the following permanent erosion control measures are to be implemented:

(1) Trench breakers, consisting of sand-filled sacks, are to be installed in the trench and "keyed" into trench walls or slopes prior to backfilling to slow the flow of subsurface water within the trench to prevent erosion of backfill materials. Spacing distances between trench breakers will be according slope gradient specified in the ECRP, unless otherwise directed by the EI or authorized company representative.

(2) Compacted ground from mainline construction activities are to be graded, contoured and scarified to promote infiltration, reduce surface water runoff, minimize erosion, and enhance re-vegetation efforts.

(3) A seedbed will be prepared in disturbed areas, where necessary, to a depth of three to four inches using appropriate equipment to promote a seedbed that is firm, yet rough enough to be conducive to capturing and lodging of seed when broadcast or hydro-seeded.

Implementation of best management practices relating to both temporary and permanent erosion control measures in the ERCP will reduce the likelihood and potential for sediment generated from proposed pipeline construction activities from entering into the East Fork Cow Creek.

The following recommendations were developed in consultation with the ODEQ. They were also discussed and agreed upon at the February 2, 2010 meeting to review the Contaminated Substances Discovery Plan:

(1) Within Riparian Reserves for all hydrologic features crossed by the pipeline between MP's 109 and 110 (FIG. 5) provide 100% post-construction ground cover on all disturbed areas. Wood fiber is the preferred material. In addition, construct water bars at 50-foot intervals.

(2) At hydrologic features G, J, and K (FIG. 5) assure that erosion control measures are in place before the fall rains and monitor for rilling, gullying and other forms of active erosion that may transport sediment into the aquatic environment. If rilling or gullying is occurring that may result in sediment transport into the aquatic environment, improve erosion control measures to preclude sedimentation.

(3) Inspect the construction corridor for sedimentation after each significant storm event (which would be more frequently than a bank-full[6] event) or whenever there is a visual sediment plume downstream. If the sediment source is originating from the pipeline corridor, improve erosion control measures to preclude

sedimentation. An authorized Agency representative will provide information to Williams' Pacific regarding these events.

KEY FINDINGS

Natural-occurring mercury is present in the disrupted soil regolith and underlying bedrock strata throughout the upper reaches of the East Fork Cow Creek watershed. Although quite spotty, mercury values are sufficiently high enough to have warranted exploration, development, and even minor production between the 1930's and 1960's.

Geochemical analysis of six soil samples collected along a 2,000-foot section of the finalized Pacific Connector Gas Pipeline that crosses partly through the historic Thomason mining claims has been determined to have very low concentrations of natural-occurring mercury mineralization.

Reconnaissance field investigation has concluded that two intermittent stream channels (Hydrologic Features C and F) that transect the finalized pipeline alignment lack connectivity to the main stem East Fork Cow Creek, thus any fine-textured sediment generated from proposed pipeline construction activities at these stream crossing sites will be transported and deposited (stored) on hill slope benches further down the channel.

Implementation of best management practices relating to both temporary and permanent erosion control measures in the ERCP will reduce the likelihood and potential for sediment generated from proposed pipeline construction activities entering into the East Fork Cow Creek.

Geochemical analysis of three stream sediment samples collected from the main stem East Fork Cow Creek and its two principal tributaries higher in the drainage also revealed nominal mercury values. Two of the three samples had mercury values that equaled or slightly exceeded the Oregon Department of Environmental Quality (ODEQ) Level II Screening Level Values for ecological risk of bioaccumulation in sediment.

In summary, proposed pipeline construction activities by Williams Pacific within the upper East Fork Cow Creek watershed are not anticipated to disturb and expose soils and bedrock strata that contains more than nominal amounts of natural-occurring mercury mineralization; and any sediment that is generated is not likely to reach the aquatic environment due to implementation of short-term and permanent mitigation measures outlined in Williams Pacific Erosion Control and Revegetation Plan.

[6] Bankfull discharge of a river is a stage of flow that is just contained within the banks.

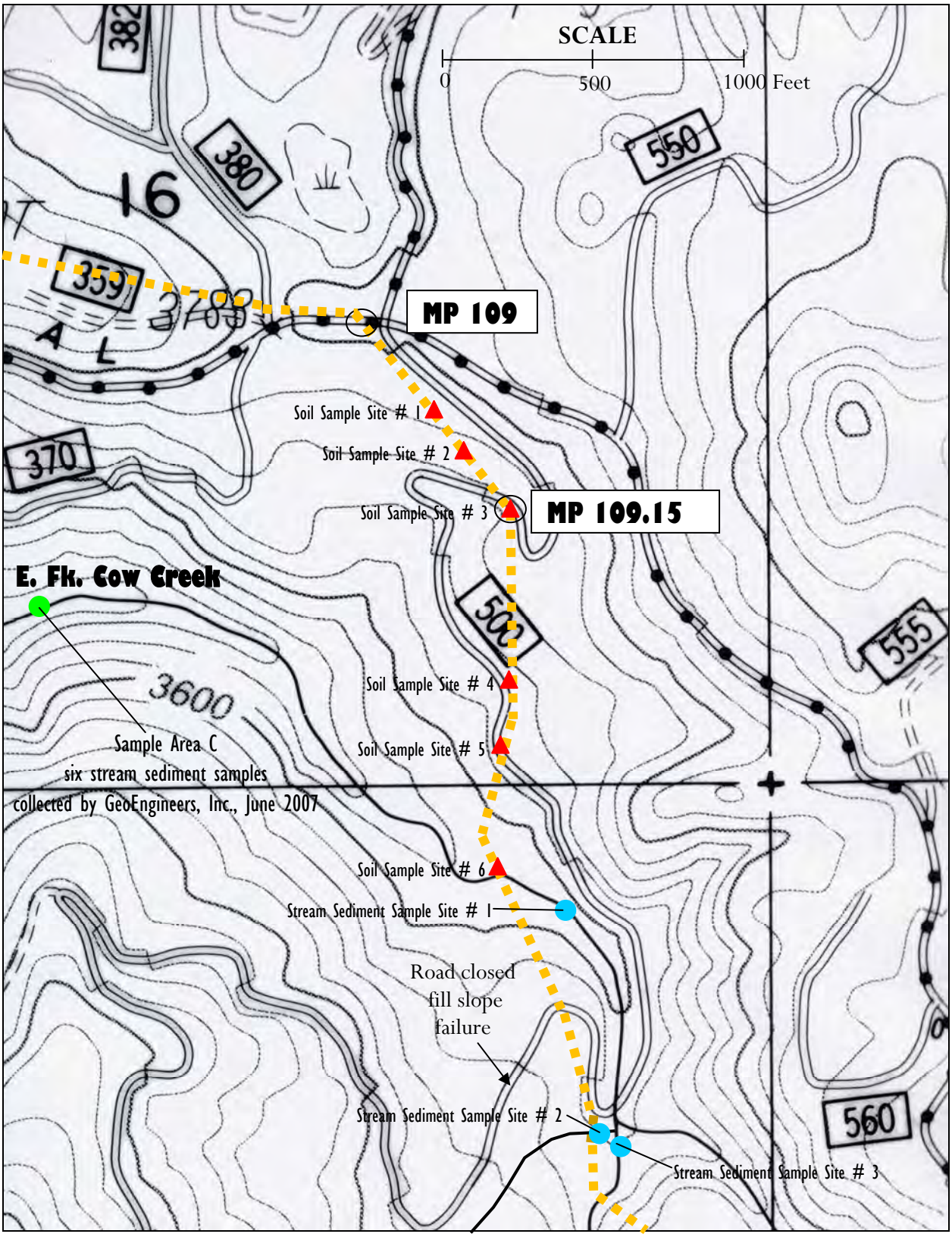


FIG. 4 Location of geochem stream sediment ● and soil sample ▲ sites along pipeline alignment ■ ■ ■ ■ ■

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Williams Pacific, LP (2009, Revision 5) USGS Quad Based Transportation Map; M.P. 102.80 to M.P. 110.20, Douglas County, Oregon; Sheet No. 16 of 55, Drawing No. 3430.31-Y-016

TABLE 3

Results of ALS Chemex Geochemical Testing dated August 22, 2007

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS USA Inc.
994 Glendale Avenue, Unit 3
Sparks NV 89431-5730
Phone: 775 356 5395 Fax: 775 355 0179 www.alschemex.com

To: GEO ENGINEERS INC.
15055 SW SEQUOIA PKWY STE140
PORTLAND OR 97224

Finalized Date: 22-AUG-2007
Account: GEOENG

Project: PCGP-RedCloudMine 8169-021-15

CERTIFICATE OF ANALYSIS RE07077668

Sample Description	Method	WEI-21	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Recvd Wt.	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.01	0.01	0.2	10	0.05	0.01	0.01	0.02	0.01	0.1	1	0.05	0.2	0.01
AREA A Sample 1		0.32	0.08	8.80	15.2	340	1.07	0.07	2.74	0.17	30.80	35.3	201	1.97	40.6	7.49
AREA A Sample 2		0.26	0.03	9.02	7.1	280	0.92	0.05	3.07	0.10	26.80	28.8	263	1.87	31.8	6.57
AREA A Sample 3		0.32	0.15	8.73	13.1	360	1.04	0.05	2.17	0.17	36.30	44.2	151	1.92	43.2	8.22
AREA A Sample 4		0.30	0.02	9.04	7.2	300	0.91	0.06	2.53	0.13	28.30	28.8	187	1.94	38.4	6.46
AREA A Sample 5		0.34	0.05	8.32	12.6	300	1.20	0.08	2.55	0.14	32.30	34.7	199	1.99	39.6	6.36
AREA A Sample 6		0.32	0.29	8.73	9.0	310	0.89	0.06	2.90	0.16	27.80	32.3	197	1.74	37.4	6.78
AREA B Sample 1		0.30	0.07	8.44	7.9	280	0.97	0.05	2.70	0.15	27.30	30.9	198	1.72	40.3	6.64
AREA B Sample 2		0.28	0.08	8.71	11.2	310	1.02	0.06	2.83	0.15	29.00	36.5	214	1.76	38.0	7.33
AREA B Sample 3		0.34	0.05	7.63	10.2	280	1.23	0.06	2.64	0.15	28.10	32.5	194	1.82	43.1	6.73
AREA B Sample 4		0.30	0.05	8.05	11.5	270	1.10	0.05	2.85	0.14	26.70	28.0	220	1.82	37.9	6.53
AREA B Sample 5		0.34	0.06	7.95	9.0	260	1.04	0.08	2.97	0.15	25.00	25.6	255	1.89	38.1	6.29
AREA B Sample 6		0.34	0.06	7.86	7.1	230	1.05	0.06	3.15	0.11	22.20	26.8	344	1.69	36.8	6.44
AREA C Sample 1		0.30	0.04	7.86	7.4	250	1.01	0.06	2.72	0.13	25.80	25.5	246	1.87	35.1	6.16
AREA C Sample 2		0.28	0.03	7.80	8.4	250	1.07	0.05	2.63	0.10	22.70	26.0	235	1.85	32.5	5.91
AREA C Sample 3		0.32	0.03	7.79	7.6	250	1.04	0.05	2.62	0.12	23.10	23.2	174	1.82	33.4	5.60
AREA C Sample 4		0.28	0.05	7.96	9.4	270	1.11	0.05	2.52	0.10	23.00	26.3	182	1.85	32.9	5.93
AREA C Sample 5		0.30	0.05	8.23	8.5	280	0.98	0.05	2.58	0.12	24.80	24.4	234	1.89	34.7	6.36
AREA C Sample 6		0.32	0.33	7.78	10.9	280	1.15	0.05	2.40	0.14	27.10	30.8	189	1.86	36.3	6.67
AREA D Sample 1		0.22	0.04	7.06	1.3	110	0.52	0.04	4.34	0.09	13.85	32.4	280	1.17	51.6	4.98
AREA D Sample 2		0.34	0.04	8.64	<0.2	140	0.62	0.06	5.44	0.08	6.89	25.3	171	0.96	42.1	4.06
AREA D Sample 3		0.34	0.02	8.11	<0.2	80	0.58	0.04	4.59	0.07	6.57	24.4	150	0.36	61.8	3.82
AREA D Sample 4		0.32	0.10	8.65	<0.2	80	0.62	0.06	5.14	0.09	6.00	24.5	163	0.48	52.2	4.19
AREA D Sample 5		0.32	0.04	8.39	0.6	130	0.72	0.06	4.69	0.07	5.99	16.9	166	0.55	64.8	3.62
AREA D Sample 6		0.36	0.05	8.50	<0.2	130	0.66	0.04	4.53	0.11	8.42	26.9	147	0.68	58.8	4.19
AREA D Sample 7		0.28	0.05	8.01	0.2	150	0.74	0.06	5.02	0.23	7.48	24.9	150	0.65	40.6	3.77
AREA D Sample 8		0.30	0.04	8.26	0.4	140	0.65	0.05	4.59	0.11	8.31	26.5	111	0.45	53.3	4.36
AREA D Sample 9		0.32	0.13	8.32	0.4	490	0.67	0.06	5.24	0.25	8.03	26.9	178	0.93	41.4	3.81
AREA D Sample 10		0.38	0.03	9.26	<0.2	90	0.52	0.06	8.29	0.10	13.40	27.1	189	0.56	64.4	4.21
AREA D Sample 11		0.34	0.04	8.71	0.8	90	0.67	0.08	5.76	0.14	13.35	29.8	175	0.80	70.6	4.78
AREA D Sample 12		0.32	0.02	9.09	<0.2	30	0.79	0.01	5.78	0.12	13.50	31.9	182	0.33	78.0	6.13
AREA E Sample 1		0.34	0.10	8.67	1.1	90	0.78	0.05	5.07	0.15	11.20	33.1	172	0.66	85.7	5.53
AREA E Sample 2		0.36	0.06	8.46	13.5	50	0.72	0.03	4.16	0.16	12.05	32.7	180	1.10	91.0	5.42
AREA E Sample 3		0.34	0.09	8.20	14.9	50	0.61	0.04	4.03	0.31	11.10	34.2	187	1.29	103.5	5.20
AREA E Sample 4		0.26	0.15	8.33	0.6	130	0.70	0.07	4.87	0.20	11.60	32.6	168	1.26	69.1	4.88
AREA E Sample 5		0.28	0.09	8.04	0.9	80	0.75	0.05	4.56	0.09	12.50	29.9	179	0.80	91.7	5.18
AREA E Sample 6		0.26	0.04	8.24	0.5	60	0.72	0.05	4.82	0.07	9.40	29.9	159	0.62	94.4	5.15
AREA F Sample 1		0.28	0.04	8.77	0.5	70	0.82	0.05	4.93	0.12	15.60	36.1	298	0.80	126.5	6.21
AREA F Sample 2		0.34	0.04	8.80	1.6	90	0.74	0.05	4.90	0.12	17.45	42.3	257	0.84	111.5	5.95
AREA F Sample 3		0.34	0.09	8.58	1.2	50	0.57	0.02	4.68	0.09	18.05	40.2	278	0.68	141.5	6.09
AREA F Sample 4		0.32	0.04	9.44	1.0	50	0.75	0.02	5.52	0.10	16.90	37.7	305	0.59	107.5	6.59

Comments: REE's may not be totally soluble in MS61 method. Detection limits on samples requiring dilutions for Hg-CV41, due to inteferences or high concentration levels, have been increased according to the dilution factor.

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To: GEO ENGINEERS INC.
15055 SW SEQUOIA PKWY STE140
PORTLAND OR 97224

Finalized Date: 22-AUG-2007
Account: GEOENG

Project: PCGP-RedCloudMine 8169-021-15

CERTIFICATE OF ANALYSIS RE07077668

Sample Description	Method Analyte Units LOR	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	Hg-CV41 Hg ppm 0.01	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10
AREA A Sample 1		18.60	0.18	2.8	0.04	0.068	0.56	12.9	11.4	2.19	1940	1.97	1.24	6.5	157.0	670
AREA A Sample 2		19.10	0.18	2.8	0.03	0.066	0.48	12.0	11.1	2.38	1315	1.19	1.36	6.8	148.5	550
AREA A Sample 3		18.80	0.20	3.2	0.04	0.075	0.53	14.6	11.0	1.82	2570	2.39	1.00	6.9	148.5	760
AREA A Sample 4		18.80	0.19	3.0	0.06	0.068	0.49	12.9	11.1	2.02	1385	1.40	1.11	6.7	138.0	600
AREA A Sample 5		18.85	0.15	3.0	0.08	0.065	0.49	14.0	13.7	1.96	1535	1.72	1.25	6.1	147.0	600
AREA A Sample 6		18.05	0.19	2.6	0.06	0.067	0.48	12.0	10.9	2.32	1555	1.50	1.34	6.0	155.5	610
AREA B Sample 1		17.60	0.19	2.7	0.03	0.065	0.45	11.8	9.9	2.14	1555	1.77	1.21	6.2	144.0	590
AREA B Sample 2		18.25	0.21	2.8	0.72	0.069	0.47	12.4	10.7	2.23	1905	1.60	1.27	6.3	147.0	620
AREA B Sample 3		18.65	0.12	2.7	0.29	0.064	0.47	12.5	11.9	2.12	1640	2.37	1.08	6.2	153.0	600
AREA B Sample 4		18.55	0.12	2.7	0.04	0.062	0.46	12.2	12.3	2.16	1410	1.67	1.20	6.4	148.0	560
AREA B Sample 5		18.55	0.10	2.7	0.06	0.065	0.47	11.3	12.7	2.19	1250	1.28	1.20	6.3	155.0	550
AREA B Sample 6		19.30	0.11	2.7	0.05	0.065	0.44	9.8	12.5	2.34	1170	1.22	1.36	6.7	155.0	480
AREA C Sample 1		19.00	0.11	2.9	0.05	0.061	0.46	11.7	12.1	2.08	1230	1.30	1.14	6.9	147.0	540
AREA C Sample 2		19.05	0.12	2.9	0.04	0.059	0.45	10.7	11.8	2.00	1320	1.16	1.15	7.2	135.5	510
AREA C Sample 3		19.45	0.11	3.0	0.28	0.061	0.46	10.5	12.2	2.01	1060	1.19	1.11	6.7	135.0	500
AREA C Sample 4		18.80	0.12	2.9	0.04	0.062	0.47	10.4	11.7	1.95	1420	1.24	1.11	6.6	128.0	550
AREA C Sample 5		18.80	0.11	2.9	0.03	0.061	0.50	11.4	11.4	1.96	1290	1.52	1.10	6.6	132.0	590
AREA C Sample 6		18.60	0.13	3.1	0.03	0.065	0.51	11.9	11.5	1.84	1590	1.64	1.02	6.8	137.0	590
AREA D Sample 1		15.80	0.09	1.6	0.02	0.046	0.28	5.9	11.2	3.85	1090	0.42	0.91	2.8	88.8	520
AREA D Sample 2		15.10	0.08	0.4	0.01	0.032	0.24	3.1	11.8	3.89	840	0.14	2.00	1.5	85.2	130
AREA D Sample 3		14.70	0.07	0.3	<0.01	0.035	0.24	2.7	14.2	4.09	460	0.13	1.99	0.8	78.5	200
AREA D Sample 4		15.80	0.07	0.4	0.01	0.037	0.28	2.6	13.7	4.01	604	0.13	1.76	0.8	81.8	240
AREA D Sample 5		15.70	0.07	0.4	0.01	0.038	0.26	2.1	13.8	3.47	570	0.16	1.96	1.0	83.2	240
AREA D Sample 6		15.90	0.07	0.4	0.01	0.037	0.27	3.8	20.5	4.16	658	0.14	1.75	1.0	92.0	270
AREA D Sample 7		15.55	0.08	0.4	0.02	0.041	0.22	3.3	16.4	3.68	915	0.22	1.70	1.4	77.7	220
AREA D Sample 8		17.05	0.09	0.5	0.02	0.044	0.18	4.5	16.7	3.30	721	0.15	1.28	1.4	60.0	220
AREA D Sample 9		16.20	0.07	0.6	0.02	0.038	0.37	3.6	16.2	3.42	1060	0.21	1.87	2.1	98.0	230
AREA D Sample 10		17.10	0.08	0.7	0.01	0.040	0.15	6.2	10.6	3.43	966	0.19	1.73	2.6	97.8	300
AREA D Sample 11		15.80	0.09	0.6	0.01	0.045	0.36	5.7	14.7	3.95	874	0.24	1.99	2.1	94.9	390
AREA D Sample 12		17.50	0.11	0.5	0.02	0.058	0.25	4.6	9.8	3.30	959	0.19	2.13	2.1	60.1	440
AREA E Sample 1		17.15	0.09	0.8	0.22	0.054	0.13	3.7	10.5	3.57	1180	0.29	2.57	2.9	94.8	510
AREA E Sample 2		15.60	0.10	0.7	53.5	0.050	0.13	4.5	11.0	2.27	1050	0.50	2.41	2.3	83.7	630
AREA E Sample 3		15.60	0.10	0.8	60.1	0.048	0.13	4.1	12.7	2.09	944	0.69	2.28	2.4	86.9	700
AREA E Sample 4		16.60	0.09	0.7	0.41	0.048	0.19	4.5	12.5	3.37	1740	0.29	2.30	2.7	98.2	800
AREA E Sample 5		16.30	0.10	0.8	0.06	0.051	0.14	3.9	10.2	3.62	1100	0.23	2.34	2.5	103.5	510
AREA E Sample 6		16.15	0.09	0.7	0.05	0.052	0.11	3.4	9.0	3.60	1180	0.24	2.41	2.1	87.9	290
AREA F Sample 1		17.55	0.11	0.9	0.04	0.063	0.10	5.9	10.5	3.97	1280	0.40	1.95	3.0	181.0	340
AREA F Sample 2		16.25	0.11	0.7	0.17	0.061	0.16	7.0	10.7	4.19	1175	0.47	2.26	2.7	155.5	320
AREA F Sample 3		16.60	0.14	0.8	0.62	0.060	0.08	6.1	8.8	4.51	1110	0.47	2.10	2.4	188.0	290
AREA F Sample 4		16.85	0.11	0.9	0.01	0.073	0.08	5.7	8.8	4.61	1220	0.42	2.17	2.8	176.5	230

Comments: REE's may not be totally soluble in MS61 method. Detection limits on samples requiring dilutions for Hg-CV41, due to inteferences or high concentration levels, have been increased according to the dilution factor.

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Finalized Date: 22-AUG-2007
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Project: PCGP-RedCloudMine 8169-021-15

CERTIFICATE OF ANALYSIS RE07077668

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2	0.2	0.05	0.05	0.2	0.005	0.02	0.1
AREA A Sample 1		13.9	22.7	0.002	0.02	0.64	26.2	2	1.2	179.5	0.46	<0.05	3.0	0.653	0.22	1.0
AREA A Sample 2		6.7	17.0	<0.002	0.01	0.42	26.6	2	1.2	184.5	0.45	<0.05	3.0	0.703	0.16	1.0
AREA A Sample 3		9.3	27.1	<0.002	0.01	0.52	26.5	2	1.2	158.0	0.49	<0.05	3.3	0.664	0.27	1.1
AREA A Sample 4		7.0	23.5	<0.002	0.01	0.44	25.5	2	1.2	165.0	0.46	<0.05	3.0	0.659	0.19	1.1
AREA A Sample 5		31.1	26.0	<0.002	0.02	0.59	27.3	2	1.2	179.0	0.44	<0.05	2.8	0.627	0.15	0.9
AREA A Sample 6		29.4	17.4	<0.002	0.02	0.54	25.1	2	1.2	176.5	0.42	<0.05	2.5	0.626	0.17	0.9
AREA B Sample 1		9.6	20.2	<0.002	0.02	0.47	25.2	2	1.2	164.5	0.43	<0.05	2.7	0.628	0.18	1.0
AREA B Sample 2		18.0	20.9	<0.002	0.09	0.49	26.4	2	1.2	167.5	0.44	<0.05	2.7	0.666	0.19	1.0
AREA B Sample 3		10.7	24.1	0.003	0.02	0.57	27.2	2	1.2	165.0	0.39	<0.05	2.6	0.594	0.18	1.0
AREA B Sample 4		27.4	22.5	<0.002	0.02	0.51	26.1	2	1.2	174.5	0.41	<0.05	2.6	0.615	0.16	1.0
AREA B Sample 5		16.7	17.7	<0.002	0.02	0.53	26.3	2	1.2	174.0	0.42	<0.05	2.6	0.652	0.15	1.0
AREA B Sample 6		7.7	11.1	<0.002	0.02	0.46	26.5	2	1.3	181.5	0.43	<0.05	2.2	0.669	0.14	0.9
AREA C Sample 1		13.2	19.0	<0.002	0.01	0.43	25.6	2	1.2	168.5	0.44	<0.05	2.6	0.666	0.15	1.0
AREA C Sample 2		7.8	14.5	<0.002	0.01	0.41	24.7	2	1.2	169.5	0.45	<0.05	2.5	0.650	0.17	1.0
AREA C Sample 3		8.1	14.9	<0.002	0.01	0.41	25.2	2	1.2	167.0	0.44	<0.05	2.7	0.604	0.16	1.0
AREA C Sample 4		7.8	16.6	<0.002	0.02	0.41	24.4	2	1.2	165.5	0.42	<0.05	2.6	0.605	0.17	1.0
AREA C Sample 5		8.9	23.2	<0.002	0.01	0.48	24.9	2	1.2	168.0	0.42	<0.05	2.7	0.669	0.16	1.0
AREA C Sample 6		9.5	25.3	<0.002	0.01	0.47	25.4	3	1.2	162.0	0.44	<0.05	3.0	0.621	0.18	1.0
AREA D Sample 1		5.7	8.2	<0.002	0.02	0.15	31.7	2	0.7	198.5	0.18	<0.05	1.1	0.372	0.06	0.4
AREA D Sample 2		3.8	2.6	<0.002	0.01	0.11	25.9	2	0.8	197.0	0.11	<0.05	0.7	0.258	0.06	0.3
AREA D Sample 3		4.0	0.9	<0.002	0.01	0.07	25.1	2	0.7	241.0	0.06	<0.05	0.8	0.177	0.07	0.2
AREA D Sample 4		4.2	1.9	<0.002	0.01	0.07	26.7	2	0.8	190.0	0.07	<0.05	0.8	0.186	0.09	0.3
AREA D Sample 5		6.1	1.1	<0.002	0.01	0.09	27.0	2	0.8	232.0	0.07	<0.05	0.8	0.193	0.08	0.2
AREA D Sample 6		4.0	2.3	<0.002	<0.01	0.12	25.8	2	0.8	185.5	0.08	<0.05	0.7	0.205	0.24	0.3
AREA D Sample 7		6.8	2.0	<0.002	0.01	0.16	25.4	2	0.8	198.0	0.10	<0.05	0.7	0.213	0.39	0.4
AREA D Sample 8		5.2	1.0	<0.002	0.01	0.18	25.5	2	0.9	183.5	0.10	<0.05	0.9	0.244	0.13	0.4
AREA D Sample 9		12.4	3.4	<0.002	0.01	0.30	25.3	2	0.8	210.0	0.15	<0.05	0.8	0.308	1.08	0.5
AREA D Sample 10		4.1	2.5	<0.002	0.01	0.14	31.5	2	0.9	214.0	0.18	<0.05	1.5	0.341	0.08	0.5
AREA D Sample 11		3.7	6.3	<0.002	0.01	0.11	30.0	2	0.9	220.0	0.14	<0.05	1.1	0.343	0.08	0.4
AREA D Sample 12		1.5	4.3	<0.002	0.01	0.12	36.4	3	1.1	199.5	0.15	<0.05	0.3	0.646	0.03	0.4
AREA E Sample 1		3.7	1.1	<0.002	0.01	0.17	29.0	3	1.2	170.0	0.20	<0.05	0.8	0.553	0.04	0.3
AREA E Sample 2		4.1	3.2	<0.002	0.03	0.56	32.2	3	1.1	169.5	0.16	<0.05	0.5	0.569	0.04	0.2
AREA E Sample 3		5.1	2.4	<0.002	0.04	0.50	30.5	3	2.4	164.5	0.17	<0.05	0.5	0.617	0.05	0.2
AREA E Sample 4		5.2	4.5	<0.002	0.01	0.13	27.5	3	1.1	172.5	0.19	<0.05	0.9	0.469	0.06	0.3
AREA E Sample 5		2.8	1.3	<0.002	0.01	0.11	27.6	3	1.1	157.0	0.16	<0.05	1.1	0.430	0.03	0.3
AREA E Sample 6		2.4	0.8	<0.002	0.01	0.11	29.1	2	1.0	145.5	0.15	<0.05	0.7	0.432	<0.02	0.3
AREA F Sample 1		3.5	1.2	<0.002	0.02	0.17	34.3	3	1.3	177.0	0.20	<0.05	0.8	0.621	0.03	0.3
AREA F Sample 2		3.0	4.3	<0.002	0.01	0.20	37.7	<1	1.2	167.0	0.18	<0.05	1.6	0.558	0.04	0.4
AREA F Sample 3		3.9	1.0	<0.002	0.01	0.30	41.4	2	1.2	154.0	0.21	<0.05	0.9	0.579	0.05	0.3
AREA F Sample 4		2.5	3.2	<0.002	0.01	0.25	37.0	2	1.3	184.5	0.20	<0.05	0.8	0.661	0.03	0.4

Comments: REE's may not be totally soluble in MS61 method. Detection limits on samples requiring dilutions for Hg-CV41, due to inteferences or high concentration levels, have been increased according to the dilution factor.

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To: **GEO ENGINEERS INC.**
15055 SW SEQUOIA PKWY STE140
PORTLAND OR 97224

Finalized Date: 22-AUG-2007
Account: GEOENG

Project: PCGP-RedCloudMine 8169-021-15

CERTIFICATE OF ANALYSIS RE07077668

Sample Description	Method Analyte Units LOR	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
AREA A Sample 1		181	0.9	23.9	117	88.0
AREA A Sample 2		184	0.6	22.7	103	87.8
AREA A Sample 3		193	0.7	25.7	122	97.0
AREA A Sample 4		176	0.6	24.1	104	92.6
AREA A Sample 5		166	0.7	24.9	113	99.2
AREA A Sample 6		171	0.7	22.9	106	82.3
AREA B Sample 1		169	0.6	23.2	102	84.0
AREA B Sample 2		179	6.4	24.3	109	85.7
AREA B Sample 3		166	0.5	26.7	100	91.3
AREA B Sample 4		165	0.4	24.6	95	88.8
AREA B Sample 5		173	0.8	25.0	96	87.4
AREA B Sample 6		175	0.4	23.0	98	87.0
AREA C Sample 1		171	0.4	24.5	96	93.3
AREA C Sample 2		162	0.4	22.7	88	92.8
AREA C Sample 3		161	0.5	22.3	88	93.7
AREA C Sample 4		164	0.4	21.7	90	94.6
AREA C Sample 5		176	0.7	22.0	98	96.5
AREA C Sample 6		171	0.6	24.1	99	98.8
AREA D Sample 1		171	<0.1	15.6	64	49.7
AREA D Sample 2		132	<0.1	13.9	44	10.1
AREA D Sample 3		131	<0.1	12.3	41	7.7
AREA D Sample 4		140	<0.1	14.0	45	8.7
AREA D Sample 5		146	<0.1	12.7	40	9.2
AREA D Sample 6		147	<0.1	15.2	52	9.1
AREA D Sample 7		125	<0.1	14.3	73	11.4
AREA D Sample 8		134	<0.1	13.8	50	12.5
AREA D Sample 9		140	<0.1	14.1	95	17.3
AREA D Sample 10		136	<0.1	18.7	50	15.7
AREA D Sample 11		156	<0.1	18.9	60	13.4
AREA D Sample 12		208	<0.1	31.1	68	8.3
AREA E Sample 1		179	0.1	19.7	75	18.8
AREA E Sample 2		171	0.1	25.1	63	13.6
AREA E Sample 3		177	0.1	22.3	102	14.9
AREA E Sample 4		146	<0.1	19.7	87	18.2
AREA E Sample 5		163	0.1	18.1	60	18.9
AREA E Sample 6		164	<0.1	17.6	60	14.9
AREA F Sample 1		191	0.2	26.9	81	20.5
AREA F Sample 2		189	0.2	24.0	77	15.5
AREA F Sample 3		198	0.2	30.4	74	16.1
AREA F Sample 4		204	0.2	27.5	73	18.2

Comments: REE's may not be totally soluble in MS61 method. Detection limits on samples requiring dilutions for Hg-CV41, due to inteferences or high concentration levels, have been increased according to the dilution factor.

TABLE 4

Results of ALS Chemex Geochemical Testing dated November 16, 2009

ALS Chemex
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To: **UMPQUA NATIONAL FOREST**
UMPQUA NATIONAL FOREST
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ROSEBURG OR 97471

Project: East Fork Cow Creek

CERTIFICATE OF ANALYSIS RE09120235

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt. kg 0.02	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05	ME-MS61 Cu ppm 0.2	ME-MS61 Fe % 0.01
EFCC-S-1		0.08	0.06	8.15	9.8	770	1.41	0.11	1.22	0.04	41.1	7.2	207	4.93	15.1	2.03
EFCC-S-2		0.08	0.07	7.23	8.9	820	1.10	0.09	1.41	0.09	33.8	9.2	205	3.48	11.5	1.58
EFCC-S-3		0.22	0.03	9.09	9.2	600	1.30	0.15	1.17	0.08	44.0	16.4	316	3.82	25.6	4.50
EFCC-S-4		0.28	0.08	7.04	8.0	700	1.15	0.13	1.40	0.06	50.4	6.2	33	3.71	12.0	2.01
EFCC-S-5		0.18	0.03	9.58	13.2	500	1.25	0.18	0.70	0.04	70.2	6.5	42	6.40	15.5	3.18
EFCC-S-6		0.12	0.09	9.09	11.3	810	1.69	0.13	1.32	0.10	21.9	4.8	24	5.05	13.3	1.93
EFCC-SS-1		0.18	0.04	8.62	9.7	290	1.21	0.10	2.20	0.11	27.4	25.8	154	2.24	26.2	5.98
EFCC-SS-2		0.28	0.02	8.31	7.6	170	0.79	0.05	3.10	0.09	19.00	43.8	584	1.32	43.0	6.55
EFCC-SS-3		0.20	0.04	8.95	10.9	320	1.04	0.06	1.95	0.13	33.2	22.4	84	1.84	33.2	6.51

***** See Appendix Page for comments regarding this certificate *****

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS USA Inc.
4977 Energy Way
Reno NV 89502
Phone: 775 356 5395 Fax: 775 355 0179 www.alschemex.com

To: UMPQUA NATIONAL FOREST
UMPQUA NATIONAL FOREST
2900 NW STEWART PKY
ROSEBURG OR 97471

Finalized Date: 16-NOV-2009
Account: BROLAR

Project: East Fork Cow Creek

CERTIFICATE OF ANALYSIS RE09120235

Sample Description	Method / Analyte / Units / LOR	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10	ME-MS61 Pb ppm 0.5
EFCC-S-1		16.75	0.08	2.6	0.030	1.79	24.6	17.1	0.34	1080	0.71	1.78	9.5	25.4	200	14.4
EFCC-S-2		14.35	0.09	2.2	0.025	1.84	18.6	18.9	0.29	2000	0.54	1.75	9.9	26.4	340	16.6
EFCC-S-3		21.4	0.13	4.7	0.075	1.23	24.5	29.0	1.04	1160	1.37	0.98	11.4	56.2	330	11.2
EFCC-S-4		15.60	0.10	4.3	0.046	1.04	26.9	25.9	0.44	943	0.80	1.35	12.1	8.3	260	13.6
EFCC-S-5		21.6	0.10	3.7	0.053	1.02	34.0	19.1	0.42	251	1.51	0.99	9.9	18.4	250	14.0
EFCC-S-6		21.9	0.07	1.9	0.029	1.43	13.0	40.2	0.28	402	0.87	2.10	7.8	21.8	420	17.5
EFCC-SS-1		21.3	0.11	3.5	0.090	0.53	12.1	16.0	1.42	1370	1.38	1.00	7.6	82.7	650	7.9
EFCC-SS-2		17.45	0.09	2.1	0.060	0.34	7.6	12.8	4.32	1360	0.54	1.25	5.0	342	420	4.9
EFCC-SS-3		22.6	0.10	4.0	0.074	0.44	13.9	16.0	0.83	1550	2.13	0.79	8.5	34.9	880	8.2

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Project: East Fork Cow Creek

CERTIFICATE OF ANALYSIS RE09120235

Sample Description	Method / Analyte / Units / LOR	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.2	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1
EFCC-S-1		88.1	<0.002	0.01	1.16	7.2	2	1.6	167.0	0.74	<0.05	9.7	0.352	0.64	3.0	43
EFCC-S-2		74.7	<0.002	0.01	1.12	5.5	2	1.3	168.0	0.75	<0.05	6.6	0.349	0.56	2.4	37
EFCC-S-3		64.1	<0.002	0.01	0.90	22.8	2	1.9	124.0	0.78	<0.05	7.6	0.616	0.40	5.0	116
EFCC-S-4		54.6	<0.002	0.01	1.07	9.7	2	1.3	190.0	0.88	<0.05	8.2	0.403	0.46	3.0	37
EFCC-S-5		82.5	<0.002	0.01	1.24	12.3	2	2.2	98.1	0.60	<0.05	15.5	0.320	0.57	4.2	56
EFCC-S-6		60.8	<0.002	0.01	1.00	5.1	1	1.7	185.5	0.75	<0.05	6.0	0.214	0.44	1.6	31
EFCC-SS-1		22.6	<0.002	0.01	0.53	27.6	1	1.5	159.0	0.57	<0.05	3.3	0.706	0.20	1.3	177
EFCC-SS-2		7.0	<0.002	0.01	0.29	27.3	1	1.2	139.5	0.36	<0.05	1.6	0.627	0.11	0.6	178
EFCC-SS-3		19.9	<0.002	0.02	0.56	27.8	1	1.5	186.0	0.61	0.05	3.2	0.768	0.19	1.1	192

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Finalized Date: 16-NOV-2009
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Project: East Fork Cow Creek

CERTIFICATE OF ANALYSIS RE09120235

Sample Description	Method / Analyte / Units / LOR	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	Hg-CV41 Hg ppm 0.01
EFCC-S-1		1.5	13.8	50	81.8	0.08
EFCC-S-2		1.7	12.8	60	75.0	0.07
EFCC-S-3		1.1	27.5	84	155.0	0.04
EFCC-S-4		1.3	24.3	61	172.0	0.03
EFCC-S-5		1.9	21.8	59	105.0	0.09
EFCC-S-6		1.6	8.4	82	55.9	0.05
EFCC-SS-1		0.8	22.4	103	123.5	0.07
EFCC-SS-2		0.8	19.3	87	74.2	0.29
EFCC-SS-3		0.8	25.0	109	143.5	0.06

***** See Appendix Page for comments regarding this certificate *****

Pacific Connector Gas Pipeline, LP

Corrosion Control Plan

Pacific Connector Gas Pipeline Project

September 2019

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1.0 INTRODUCTION

Pacific Connector Gas Pipeline, LP (PCGP) will implement methods to protect the Pacific Connector Gas Pipeline (Pipeline or Pipeline Project) system from external, internal, and atmospheric corrosion in accordance with DOT 49 CFR 192. Corrosion Control is critical to public safety and the safe/reliable operation of the pipeline. This plan will illustrate methods used to identify the corrosion control needs for the Pipeline Project, as well as methods to provide the required protection and mitigation. Per DOT 49 CFR 192.455 (2) the Pipeline must have a cathodic protection system designed, installed and in operation within 1 year from the completion of pipeline construction. Throughout the life of the Pipeline, all corrosion control and maintenance procedures will be performed by, or under the direction of a qualified pipeline corrosion specialist.

2.0 CORROSION CONTROL METHODS

2.1 External Corrosion Control

2.1.1 Protective Coating

All buried piping components of the Pipeline will be installed with an external protective coating. All below ground pipe will be mill coated with Fusion Bonded Epoxy (FBE) coating and all field joints or repairs will be coated with FBE or a two-part epoxy with similar characteristics critical to corrosion protection. These characteristics include:

- Sufficient adhesion to the metal surface to effectively resist underfilm migration of moisture;
- Adequate ductility to resist cracking during bending and construction operations;
- Sufficient strength to resist damage due to handling and stresses imposed by the soil environment;
- Properties compatible with supplemental cathodic protection systems;
- Exhibition of low moisture absorption;
- High electrical resistance;and
- Specifications compatible with the service environment in which the coating shall be used (i.e., directional drilling, aggressive backfill).

All above ground piping, vessels, valves, tanks, etc. will be painted to protect against atmospheric corrosion using approved earth tones.

2.1.2 Cathodic Protection

A Cathodic Protection (CP) system designed to protect the Pipeline, will be installed within 1 year after completion of pipeline construction. CP prevents corrosion from forming on the pipeline by making the pipeline cathodic to the surrounding environment. To achieve this, the pipeline is placed in contact with a more easily corroded anode and may include a DC powered rectifier. The rectifier is connected to an array of anodes buried in the ground, known as a groundbed, and increases the effectiveness of the anode system. The positive output from the rectifier is connected to the anode while the negative terminal is connected to the pipeline. The soil surrounding the pipeline acts as an electrolyte permitting the system to protect the pipeline.

Attachment A depicts a typical Deepwell Groundbed and Attachment B depicts a typical Conventional Distributed Anode Groundbed. Both serve the same purpose and operate in the same manner, but depending on the subsurface/geographical conditions, available workspace,

range of effectiveness and easement configuration, one or the other may prove more advantageous.

If a Deepwell is installed, it will require a truck-mounted well drilling rig. Deepwells typically range from 100' to 300' deep and 10" in diameter. The drill rig will require an area of approximately 60' x 80' to safely perform installation work. The finished "footprint" will be approximately 10 to 15 square feet (sq. ft.). Each of the deepwells will require approximately three to seven days for installation.

If a Conventional Distributed Anode Groundbed is installed, it will require a standard backhoe trench that is approximately 200' to 500' long and approximately 5' deep. The anode beds will likely consist of carbon, graphite or iron anodes buried in the ground and attached to a rectifier. The finished “footprint’ will be approximately 15’ wide by 200’ to 500’ in length. Each of the groundbeds will require approximately three to seven days for installation.

Installation of Cathodic Protection sites will comprise of a small qualified crew to handle the installation of the anodes, rectifier, and associated cables. This crew typically ranges in size from 5-7 onsite personnel.

Prior to installing CP systems along the pipeline, qualified personnel will conduct soil resistivity measurements and pipe-to-soil potential measurements to create a resistivity potential profile. Based on this profile and other factors including local geology, ground moisture, climatic conditions, and the condition of the coating, CP systems will be designed and installed to meet site specific conditions. Once installed, the rectifiers may be adjusted to maintain optimum levels of CP. CP systems may require additional easement agreements which will be acquired after the design is completed and sites selected.

Table 1 will be populated after the Cathodic Protection system has been designed to provide details on the CP Site numbers, locations, and design.

Table 1
Cathodic Protection Locations

CP Site Number	Milepost	Engineering Station	Landowner	Site Access (Road Name)	Design (i.e. Conventional, Deepwell, or Test Station)

To every extent possible, groundbeds will be situated near existing roads. Access on roads used during the installation and maintenance of CP sites will be acquired through agreements with the proper agencies and landowners after the CP site locations have been identified.

The rectifiers will require electrical power from public utility power, solar panels, or thermal electric generators (TEG). Areas where power is acquired via public utilities will typically have a rectifier installed on a steel post above ground. The rectifier will be enclosed in a metal case and locked to prevent tampering. Thermal electric generators are typically surrounded by security fencing to prevent any tampering and theft. TEG powered CP systems contain more above ground appurtenances than systems where power is acquired via public utilities. Rectifiers will not be placed on federal lands.

During the CP system installations, appropriate erosion control Best Management Practices (BMPs) will be installed as necessary, and in accordance with the Erosion Control and

Revegetation Plan (ECRP) (Appendix I to the POD). Any potential air, noise, and fugitive dust emissions that may be generated from the installation of the CP system shall adhere to the BMPs identified in the Air, Noise, and Fugitive Dust Control Plan (Appendix B to the POD). PCGP will hire qualified onsite inspectors to ensure the proper installation of all erosion and sedimentation control measures.

2.1.3 Cathodic Protection Monitoring

The CP system will be tested and if necessary, adjusted at least once each calendar year, but not exceeding 15 months to ensure the CP system is providing acceptable levels of protection as outlined in DOT 49 CFR 192.465. Tests will be completed including Close Interval Survey (CIS) that measures pipe to soil potentials, electromagnetics, and guided wave ultrasonics. CP test stations will be located along the pipeline to allow PCGP to routinely monitor voltage and current levels. A sample test station drawing is shown in Attachment C.

2.1.4 Electrical Isolation

All buried or submerged pipeline will be electrically isolated from other underground metallic structures, unless the pipeline and the other structures are electrically interconnected and cathodically protected as a single unit. Electrical isolation is critical to avoid any interference with other structures that would lower the effectiveness of the CP systems. Locations will be identified based on factors such as:

- Areas where the pipeline may be supported above ground by metallic supports;
- Areas where a change of ownership of facilities occurs; and
- Areas where below ground piping comes above grade just prior to entering a building or enclosed area (i.e. meter station, compressor station), and just after exiting the enclosure but prior to returning below grade.

2.2 Atmospheric Corrosion

To protect the pipeline from atmospheric corrosion, all pipe exposed to the atmosphere will be cleaned and coated with materials suitable for the prevention of atmospheric corrosion, and will be inspected as outlined in the DOT 49 CFR 192.

2.3 Internal Corrosion Control

In addition to the pipeline being internally coated, proper steps will be taken to minimize internal corrosion, taking into account the properties of the gas entering the pipeline. Whenever any pipe is removed for any reason, the internal surface will be inspected for evidence of corrosion. If internal corrosion is found, adjacent pipe will be investigated to determine the extent of the internal corrosion and the proper repair or replacement will be made accordingly.

2.4 Inline Inspection

A set of 4 Inline Inspection (ILI) tool launcher and receiver facilities will be installed to allow PCGP the ability to internally inspect the pipeline in its entirety. These facilities will launch and receive ILI tools that clean and inspect the pipe for wall loss due to corrosion (both internal and external) as well as inspect for dents and deformations. As per the DOT 49 CFR 192, an integrity management program will be created by PCGP prior to placing the pipeline into service that will identify the frequency of the inline inspection tool runs. The frequency will be based on factors such as pipeline sections located in High Consequence Areas (HCA), analysis of data collected from field surveys, and general inspection of the pipeline.

The ILI tool launcher and receiver facilities are typically surrounded by security fencing if they are located outside a fenced in compressor station or meter station. They will also have at least one gate to allow access for maintenance and ILI operations.

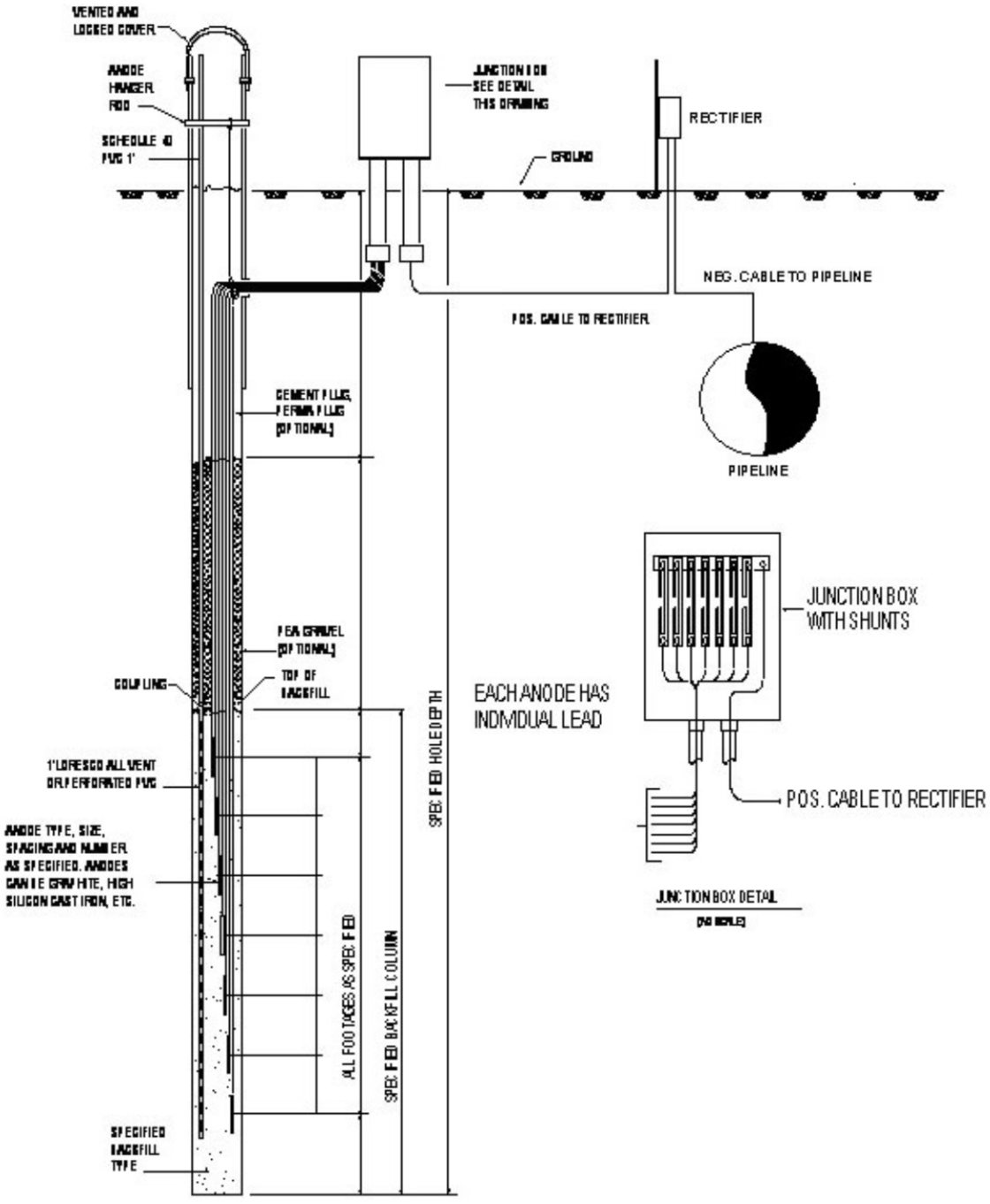
3.0 REPAIR METHODS

If corrosion is identified on any part of the pipeline, the proper repair methods will be utilized depending on severity, location and type. Proper safety precautions will be implemented at the time the corrosion is identified and during the repair or replacement. Permanent and temporary repairs may include methods such as composite wraps, steel wraps, and pipe replacements.

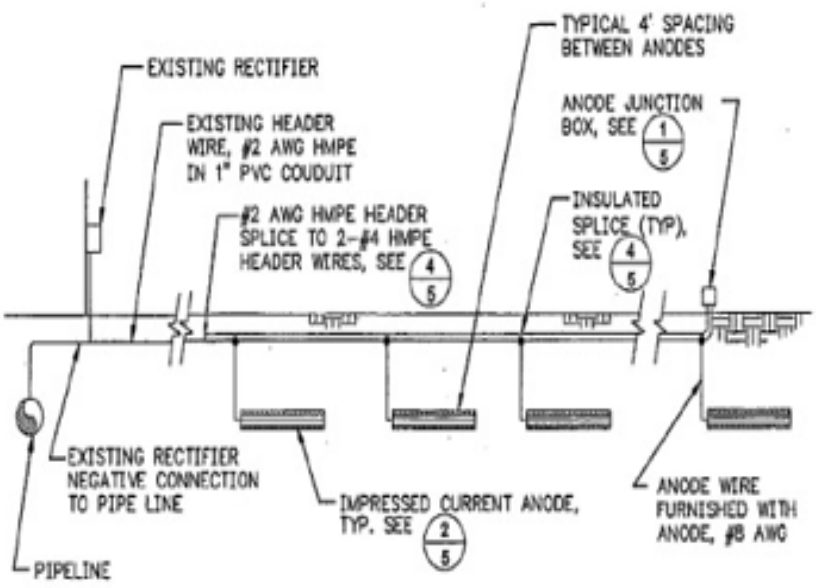
3.1 Repair Response Time

PCGP will follow the requirements of DOT 49 CFR 192.922(c) regarding response times if corrosion is discovered on the pipeline during cathodic protection or Inline Inspection inspections.

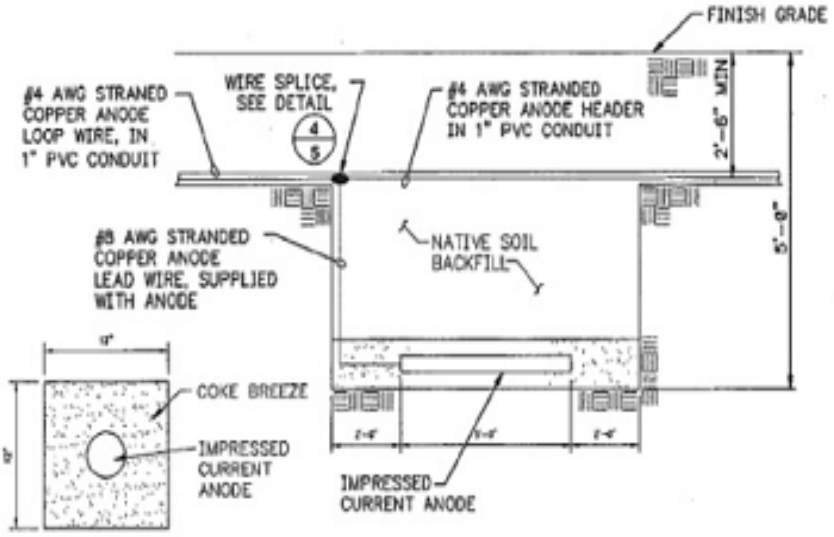
ATTACHMENT A
Deepwell Anode Groundbed



ATTACHMENT B
Conventional Distributed Anode Groundbed



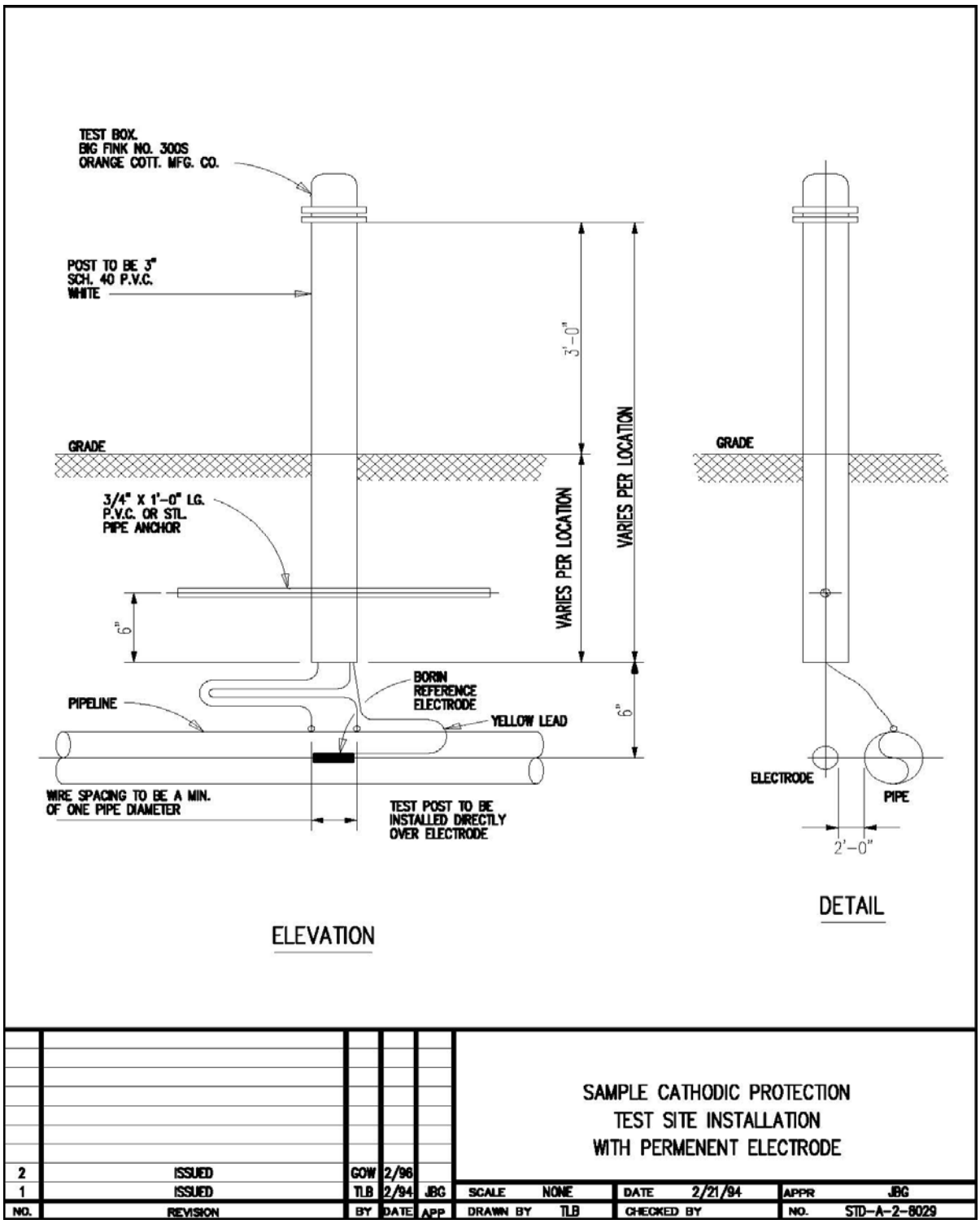
CATHODIC PROTECTION
RECTIFIER AND GROUND BED 3/5
NTS



SECTION

IMPRESSED CURRENT ANODE INSTALLATION 2/5
NTS

ATTACHMENT C
Sample Cathodic Protection Test Station



Pacific Connector Gas Pipeline, LP

Environmental Briefings Plan

Pacific Connector Gas Pipeline Project

September 2019

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1.0 INTRODUCTION

The purpose of this Plan is to outline the environmental reporting procedures, briefings, or notifications that PCGP will provide to the federal land-managing agencies prior to construction, during construction, post construction, and during operations of the Pacific Connector Gas Pipeline (Pipeline). Detailed compliance management documents will be developed based on the conditions in the permits/authorizations issued for the project and will be submitted for approval to the federal land-managing agencies 60 days prior to BLM's issuance of an NTP for construction.

This Plan describes the information that will be communicated to the federal land-managing agencies' appointed supervisory and field staff, who will be involved in the Pipeline, to keep them informed of the status, construction schedule, and progress. Due to the linear construction method of the Pipeline, reporting will be provided at regular intervals during construction. Problems or issues that arise during construction (i.e., instances of non-compliance, problem areas), will be included in the reporting as well as the corrective actions taken. For example, an erosion control device (silt fence/strawbales) that is installed improperly on the construction limits with no impact would be reported as a problem area. Conversely, an erosion control device (silt fence/strawbales) that was installed improperly on the construction limits with subsequent impact to an adjacent sensitive resource (sedimentation/turbidity) would be reported as a non-compliance. Attachment 1 provides a list of the agency officials that will receive the various reports or notifications. The tables in Attachment 1 will be updated as needed and at a minimum on an annual basis.

This Plan does not include notification/reporting required by other federal or state regulations or conditions of approvals or other plans within this Plan of Development. Some of these plans are listed below:

- Blasting Plan
- Contaminated Substances Discovery Plan
- Fire Prevention and Suppression Plan
- Fish Salvage Plan
- Integrated Pest Management Plan
- Klamath Project Facilities Crossing Plan
- Prescribed Burning Plan
- Transportation Management Plan
- Right-of-Way Clearing Plan
- Spill Prevention Containment and Countermeasures Plan (SPCC)
- Safety and Security Plan
- Unanticipated Discovery Plan

2.0 PRE-CONSTRUCTION REPORTING

PCGP will follow the construction procedures and mitigation measures set out in the Pipeline's permits and the FERC certificate. If PCGP proposes a variance to these procedures and mitigation measures, PCGP would:

1. request any variance in accordance with the applicable regulations to be submitted to both FERC and the applicable federal land managing agency to the extent federal lands are at issue;

2. justify each variance relative to site-specific conditions;
3. explain how that variance provides an equal or greater level of environmental protection than the original measure; and
4. receive approval in writing from the Director of the OEP before using that variance.
5. For federal lands also receive approval in a written variance from the BLM in accordance with the detailed compliance management documents.

PCGP will file with the FERC and federal land-managing agencies detailed maps or alignment sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the FERC or the BLM. PCGP would obtain, in writing, all applicable approval(s) before construction in or near each of these areas. For each area, the request would include a description of the existing land use/cover type, and documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. Before construction in or near the area would begin, PCGP would receive approval in writing from the Director of OEP. PCGP would file with the federal land-managing agencies all modifications that affect federal lands or facilities.

This requirement does not apply to extra workspace allowed by FERC's Upland Erosion Control, Revegetation and Maintenance Plan (e.g., slope breakers, energy-dissipating devices, dewatering structures), minor field realignments per landowner needs, and requirements which do not affect other landowners or sensitive environmental areas such as wetlands, unless on federal lands. Examples of alterations that would require approval and submittal include all route realignments and facility location changes resulting from:

1. implementation of cultural resources mitigation measures;
2. implementation of endangered, threatened, or special concern species mitigation measures;
3. recommendations by state regulatory authorities;
4. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas; and
5. any change on federal lands from the authorized/certificated areas in the Right-of-Way Grant from the BLM.

Within sixty (60) days of the approval of the Right-of-Way Grant and before construction begins, PCGP will file an initial Environmental Inspection, BMP and Construction Compliance Implementation Plan with the federal land-managing agencies' Authorized Office for review and written approval in accordance with the POD stipulations. PCGP would file revisions to the plan as schedules change. The Implementation Plan will identify the following:

1. how PCGP addressed environmental protection requirements into the construction contracts, specifications and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
2. the number of environmental inspectors assigned per spread, and how the PCGP will ensure that sufficient personnel are available to implement the environmental mitigation;
3. PCGP personnel, including environmental inspectors and contractors, who will receive copies of the appropriate material;

4. the training and instructions PCGP will give to all personnel involved with construction and restoration (initial and refresher training as the Pipeline progresses and personnel change), with the opportunity for FERC and other federal land-managing staff to participate in the training session;
5. the company personnel (if known) and specific portion of PCGP's organization having responsibility for compliance;
6. the procedures (including use of contract penalties) PCGP will follow if noncompliance occurs; and
7. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
    a. the completion of all required surveys and reports;
    b. the mitigation training of onsite personnel;
    c. the start of construction; and
    d. the start and completion of restoration.

2.1 Federal Land Use Notification

PCGP will provide the detailed construction schedule(s) at least 90 days in advance of using all federal lands, roads, trails, or waterways . If closure of federal lands or facilities is proposed, closure or restriction requests shall specify the period of time during which the closure or restriction will apply and the personnel who are exempt from the closure or restriction. PCGP will follow the rules of conduct established by the Agency for the protection of federal lands and resources and for the protection, comfort, and well being of the public. Federal road closure notifications guidelines and requirements are discussed in Section 3.0 of the Transportation Management Plan (Appendix Y to the POD).

3.0 CONSTRUCTION REPORTING

3.1 Weekly Construction Status Reports

PCGP will file updated status reports prepared by the Pipeline's Lead Environmental Inspector with the Agency Official on a weekly basis until all construction and restoration activities are completed. The weekly status reports will begin as soon as FERC issues a Notice to Proceed for the Project. These status reports will be provided to BLM, FS and Reclamation. Status reports will include:

1. the current construction status of the Pipeline, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
2. a listing of all problem areas encountered and each instance of noncompliance observed by the environmental inspectors during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
3. a description of corrective actions implemented in response to all instances of problem areas or noncompliance, and their cost;
4. the effectiveness of all corrective actions implemented;
5. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
6. copies of any correspondence received by PCGP from other federal, state or local

permitting agencies concerning instances of problem areas or noncompliance, and PCGP's response.

Table 1 provides an example of a construction progress schedule that will be submitted to the federal land-managing agencies to provide a status of the Pipeline Project's various construction activities. This table, or its equivalent, will be filed for each of the five construction spreads. The name, number, and email address of the point of contact responsible for reporting the various activities for each construction spread will be included with each table.

Table 1
Construction Progress
Construction Spread #__

Activity	Start Date	Percent Complete	Notes
Survey			
Clearing			
Grading			
Ditch			
Stringing			
Welding			
Coating			
Clean-up			
Seeding			

3.2 Two-Week Work Projections

Each weekly construction status report will include a description of work to be accomplished in the following two weeks. The projection would estimate the progress expected for initial ground-disturbing activities such as clearing and grading activities as well as restoration activities, including clean-up and reseeding efforts. The purposes of these projections are to provide adequate communications and expected timelines to allow federal land-managing agencies sufficient lead time to schedule field staff, if necessary.

3.3 In-Service Notification

PCGP will provide BLM, FS and Reclamation with a copy of FERC's notice allowing service on the Pipeline to commence.

4.0 POST CONSTRUCTION REPORTING

4.1 Quarterly Status Reports

After restoration is completed and the pipeline is in-service, PCGP will initiate monitoring and reporting to the federal land-managing agencies on a quarterly basis once FERC has requested or approved this reporting schedule. PCGP will continue reporting until all disturbed areas have

been successfully stabilized and restoration is complete. During the quarterly reporting period, PCGP will provide the following information to the federal land-managing agencies:

1. Summary of restoration status and any right-of-way repair or maintenance requirements that are necessary and the anticipated schedules to complete the repair/maintenance work;
2. Problems that are encountered and any instances of non-compliance; and
3. Copies of correspondence concerning non-compliance from regulatory agencies.

5.0 OPERATION REPORTING

During the operation phase of the Pipeline, PCGP will make every effort to notify the federal agency 90 days prior to performing operational construction activities on federal lands, trails, or waterways that may require ground-disturbing activities or that may require a temporary road shutdown. Where overriding code requirements commit PCGP to respond in a shorter timeframe or handle an emergency condition on the right-of-way, PCGP will notify the federal agency as soon as the problem is identified. Corrective action will then be taken to remedy the situation, keeping the federal agencies informed throughout the process.

Attachment 1

Federal Land-Managing Agency Notification Contacts

Table 1
Forest Service District Coordinator Contact Information

National Forest	MPs	District Coordinator
Forest Service – Umpqua	99.31 to 99.83 100.39 to 100.68 101.20 to 101.89 102.32 to 102.85 104.10 to 113.20	David Krantz 541-618-2082
Forest Service – Rogue River-Siskiyou	153.81 to 154.93 155.45 to 168.01	Anne Trapanese 541-560-3433
Forest Service – Fremont-Winema	168.01 to 169.37 170.04 to 171.39 171.59 to 172.71 173.11 to 174.81 174.95 to 175.37	Catherine Callaghan 541-947-6326

[1] See Environmental Alignment Sheets for NFS lands within the mileposts for each National Forest.

Table 2
BLM District Coordinator Contact Information

BLM District	MPs [1]	District Coordinator
Coos Bay District	0.00 to 45.70	Aimee Hoefs 541-756-0100
Roseburg District	45.70 to 109.10	Dorothy Dickey 541-440-4930
Medford District	109.10 to 166.41	Allen Bollschweiler 541-618-2200
Lakeview District	166.4 to 228.81	Terry Austin 541-883-6916

[1] See Environmental Alignment Sheets for BLM-managed lands within the mileposts for each BLM District.

Table 3
KBAO Coordinator Contact Information

Bureau of Reclamation	MPs [1]	Coordinator
KBAO – Klamath Project	200.53 to 213.87	Kirk Young 541-880-2589

[1] See Environmental Alignment Sheets for Bureau of Reclamation-managed lands within the mileposts for the Klamath Project.

Pacific Connector Gas Pipeline, LP

Emergency Response Plan Concept Paper

Pacific Connector Gas Pipeline Project

September 2019

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List of Attachments

1.0 INTRODUCTION

The purpose of this Emergency Response Plan is to identify the standards and criteria which Pacific Connector Gas Pipeline, LP (PCGP) will follow to minimize the hazards during pipeline operation resulting from a gas pipeline emergency in accordance with the Pipeline and Hazardous Materials Safety Administration's regulations in 49 CFR 192.615 and 192.617.

It is important that all PCGP employees and its contractors, local and community emergency response personnel, and federal land-managing agencies who could be involved in an emergency are notified and prepared to respond to the emergency in an expeditious, and safe and timely manner. It is equally important to ensure that all precautions are taken to minimize actual and potential dangers to the public, environment, property, company personnel, customers and facilities, and to see that emergency response personnel have the tools, materials and instructions to enable them to perform those functions necessary to meet gas pipeline related emergencies. Prior to the Pacific Connector Gas Pipeline (Pipeline) being placed into service, both a company internal Emergency Plan and Preparedness Manual and Public Safety Response Manual will be created. The Public Safety Response Manual will be distributed to all applicable emergency response organizations and training meetings will be held prior to the Pipeline being placed in-service. On-going training and drills will be conducted as necessary to ensure local emergency response personnel are adequately educated and prepared to respond to an emergency situation.

The Emergency Plan and Preparedness Manual will contain the following information, and will act as an internal PCGP manual:

- Emergency Response Priorities
- Emergency Responders and Responsibilities
- Onsite Emergency Equipment and Materials
- Post Emergency Evaluation
- Emergency Response Team
- Root Cause Analysis
- Training
- Site Specific Information
- Index of Forms
- OSHA Emergency Response and Incident Reporting – Fatalities and Serious Injuries Resulting in Hospitalization
- EPA Spill Prevention and Contingency Planning
- Agencies and resources contact information

The Public Safety Response Manual will contain the following information, and will be distributed to the appropriate agencies and local authorities:

- General Information and Facts about the Pipeline including:
    - How to identify a gas leak
    - Public Safety
    - How to respond to emergencies such as: Fires, ruptures, bombs, exposed lines, and leaks
    - Key Contact personnel for PCGP
    - Map depicting the Pipeline route

Once the Emergency Plan and Preparedness Manual and Public Safety Response Manual have been developed for the Pipeline, PCGP personnel will begin meetings with state, local, county and federal emergency response personnel, and federal land-managing agency personnel to review and discuss the procedures and contact protocols in the event of a pipeline emergency. As outlined in Section 7.0 below, training for emergency responders and federal land-managing agency personnel will take place on a regularly scheduled basis to ensure each group has the latest information regarding the pipeline emergency response procedures. For emergency responses related to inadvertent spills or leaks of hazardous substances, chemicals, fuels and lubricating oils, please see the Spill Prevention, Containment and Countermeasures Plan in the Plan of Development (see Appendix X).

2.0 EMERGENCY RESPONSE PRIORITIES

If an emergency occurs during construction, operation, maintenance or decommissioning of the Pipeline, immediate actions taken to safeguard the public, environment, emergency responders and company personnel, take precedent over all other activities. Notifications will be made in accordance with the requirements of the Emergency Response Plan and the applicable regulations. The notification will identify the actions taken to address the emergency and whether any injuries have been sustained. In emergencies involving wildfire, PCGP employees, contractors and subcontractors will undertake every reasonable action to prevent and suppress fires on or in the immediate vicinity of the pipeline (see Fire Prevention and Suppression Plan in Appendix K to the Plan of Development).

An Incident Command Post and Team will be created to handle all incident activities, strategies and tactics in accordance with the provisions of the ERP. The primary purpose of an Incident Command System is to bring the emergency situation under a single management structure. Documentation will be completed to identify the initial notification and event classification.

Attachment A depicts an example of an Event Notification Plan.

2.1 Prompt and Effective Response

PCGP shall provide for prompt and effective response to each notice or emergency that is directly related to the Pipeline, including but not limited to:

- Gas detected inside or near a building associated with the Pipeline;
- Fire located near or directly involving the Pipeline;
- Explosion involving the Pipeline;
- Natural disasters that have the potential to affect the Pipeline;
- Pipeline emergency – escaping gas or damage to the Pipeline;
- Compressor station emergency; and/or
- Response to credible threats (bomb, extortion, terrorist) against the Pipeline.

When PCGP's Gas Control receives the first information on the emergency, the appropriate people as identified in Section 2.2 below shall be notified immediately.

2.2 Emergency Responders

The major PCGP participants in resolving an emergency are:

- First Responder

- Incident Commander
- Federal Land-Managing Agency designated personnel
- All responders
- Gas Control
- Root Cause Investigation Team
- Pipeline Safety
- Media Relations
- Land Representatives
- Legal Department

These participants have responsibilities unique to their roles in protecting life and property, preventing additional damage, regaining control of pipeline facility(s), determining the cause of the emergency, and communicating emergency information to agencies, the public and media.

3.0 ONSITE EMERGENCY EQUIPMENT MATERIALS

To be prepared to cope with and resolve emergency events, the appropriate emergency and safety equipment necessary for fire protection and first aid as required by OSHA and appropriate regulating agencies will be maintained by PCGP for the Pipeline, which includes but is not limited to, the Jordan Cove Meter Station (M/S) (MP 0.00) and Klamath Compressor and M/S (MP 228.81), central reporting locations accessible to all employees (Location TBD), and company vehicles. The equipment will remain onsite at all times and in a location accessible to all employees and will be maintained in good working condition with adequate amounts of equipment and materials available and updated as improved items become available. If equipment is not accessible at any one location, then equipment will be utilized from any of the unaffected locations or company vehicles.

4.0 POST EMERGENCY EVALUATION

Immediately after the completion of the emergency response, repairs, return of the facility to normal service, and debriefing of all parties involved in responding to the emergency, the following will be completed:

- An evaluation of the emergency response procedures and any required changes to make the emergency response plan more effective;
- An evaluation of the adequacy of emergency and safety equipment to determine if any changes are needed for the future;
- Additional training required of responders to eliminate mistakes or weak response activities observed during the emergency response;
- Evaluate actions taken by other response groups – fire, police, paramedics, etc.; and
- Complete proper Emergency Response Evaluation documentation.

5.0 EMERGENCY RESPONSE TEAM

The Emergency Response Team for a specific event will be created, along with a list of names and phone numbers that coincide with the team members. The PCGP Gas Control will be the primary contact for any questions related to the Emergency Response Team.

6.0 ROOT CAUSE ANALYSIS

An investigation into the cause of the emergency event, called a root cause analysis, will occur if the significance of the event warrants an investigation. A root cause analysis will be conducted after any event resulting in harm to people, damage to property or the environment, or loss to of, or interruption to operations. The root cause analysis will be composed of an overview of the incident, a list identifying the analysis team members, all factual information, a list of all immediate causes to identify all corresponding acts and conditions of the job site, personal factors and job factors which allow the immediate causes to occur, additional observations related to the incident, and all suggested actions to address each of the immediate causes, root causes and additional observations identified.

7.0 ANNUAL REVIEW AND TRAINING

All field personnel will receive emergency response training, including the review of the Emergency Plan and Preparedness Manual and Public Safety Response Manual every year. The goals of emergency response training will be to assess the adequacy of emergency response plans and procedures, determine the readiness of emergency response participants, resolve questions about coordination with response agencies, clarify roles and responsibilities, and promote awareness of potential hazards.

PCGP will establish and maintain liaison with the appropriate fire, police and other public officials to learn the responsibility and resources of each government organization that may respond to a gas pipeline emergency, acquaint the officials with the operator's ability in responding to a gas pipeline emergency, identify the types of gas pipeline emergencies of which the operator notifies the officials, and plan how the operator and officials can engage in mutual assistance to minimize hazards to life or property along the Pipeline right-of-way.

PCGP will certify to the ODOE that the company is in compliance with all the requirements of the Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. 11001 et. seq., prior to receiving the PCGP Right-of-Way grant.

8.0 SITE SPECIFIC INFORMATION

Site specific information will be provided in the Emergency Plan and Preparedness Manual as listed below:

- Directions to Facilities
  - Includes maps showing directions to facilities
- Alignment Sheets or Route Maps
  - Includes all alignment sheets/maps of PCGP facilities
- Emergency Notification Lists
  - Includes landowners, if applicable, in the area, fire departments, local and state police, hospitals/paramedics, local emergency planning coordinators, ambulance service, telephone companies, utility companies, railroad companies, county/city emergency numbers, PCGP emergency numbers, customer/producer numbers; PCGP personnel pager, mobile, and home telephone numbers
    - Attachment B depicts examples of Emergency Notification Lists that will be filled appropriately
- Compressor Station Fire Protection and First Aid Station Locations

  - Includes site specific drawings or references to existing drawings showing location of fire extinguishers, fire hydrants, and fire system pumps
- District Compressor Station Gas Flow Diagram
  - Includes site specific diagrams
- District Mainline, Lateral, Compressor Station Block Valves and Meter Station
  - Includes list of valves with normal operating position
- District Site-Specific Emergency Procedures
  - Includes any PCGP specific procedures such as Offshore river crossings, Gas Storage that may be needed in the Emergency Plan and Preparedness Manual
- Equipment On Hand Directory
  - Includes emergency equipment that is currently on-hand or with a contractor in a nearby geographic location that could be used in an emergency
- Physical Security Standards, Security Conditions and Response Measures
  - Includes general and specific security measures for all facilities and operations. Identifies any "Business Critical Facility" and related security measures.

9.0 INDEX OF FORMS

All emergency response related forms to be filled out by PCGP personnel will be located in this section. These forms are as listed, but not limited to:

- Manned Facilities Site Security Inspection Form
- Initial Notifications and Event Classification Record Form
- First Aware/First Responder Checklist and Action Documentation Form
- Emergency Response Training Record
- Emergency Response Evaluation Record
- Business Unit Personnel Notification List
- Customers/Producers Notification List
- District Personnel Notification List
- Security Incident Form

10.0OSHA EMERGENCY RESPONSE AND ACCIDENT REPORTING – FATALITIES AND SERIOUS INJURIES RESULTING IN HOSPITALIZATION

The purpose of this procedure will be to provide a system for effectively dealing with events that result in the death or hospitalization of an employee, contractor, customer, or member of the general public, and ensure adherence to all relevant Federal, State, and local regulations including the Occupational Safety and Health Administration (OSHA). This document supplements the PCGP Emergency Plan and Preparedness Manual. Attachment C depicts an example Flowchart of notifications.

11.0EPA SPILL PREVENTION AND CONTINGENCY PLANNING

The purpose of this procedure is to establish a standardized method of ensuring PCGP adheres to all relevant Federal, State, and local regulations related to the preparedness and prevention of regulated materials being released into the environment. Attachment D depicts an example Environmental Spill Notification Flowchart.

12.0PUBLIC SAFETY RESPONSE MANUAL

The Public Safety Response Manual will be distributed to the appropriate agencies and local authorities prior to the Pipeline being placed into service. Its goal is to provide the public with general information about PCGP, how to identify and respond to emergencies, a general map depicting the Pipeline route, and contacts for PCGP Key Personnel. Attachment E depicts an example list of contacts for PCGP Key Personnel. When a potential emergency arises and/or is encountered along the Pipeline, PCGP must be notified immediately. All agencies must contact the 24 Hour Emergency Number as listed in the PCGP Key Personnel document. This will trigger an internal chain of events and communications to ensure the proper response is executed. Assisting agencies will retain statutory responsibilities for the protection of the public and its property.

Attachment A

Example Event Notification Plan

(forthcoming)

Attachment B

Example Emergency Notification Lists

(forthcoming)

Attachment C

Example Flowchart of Notifications

(forthcoming)

Attachment D

Example Environmental Spill Notification Flowchart

(forthcoming)

Attachment E

Example PCGP Key Personnel

(forthcoming)