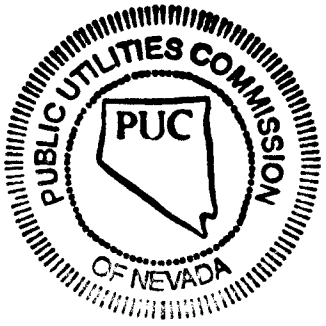

Contact Filer Regarding Image Clarity

13-04035

Public Utilities Commission of Nevada

Electronic Filing

Submitted: 4/3/2014 3:02:26 PM

Reference: 4c56b422-fb4a-4e12-92ac-464416536a4a

Filed For: Prospector Pipeline Company

In accordance with NRS Chapter 719,
this filing has been electronically signed and filed
by: /s Wood Rodgers Inc

By electronically filing the document(s),
the filer attests to the authenticity of the electronic signature(s) contained therein.

This filing has been electronically filed and deemed to be signed by an authorized agent or representative of the signer(s) and
Prospector Pipeline Company

FILED WITH THE PUBLIC UTILITIES COMMISSION OF NEVADA - 4/3/2014

Law Offices of Gary Duhon, Ltd.

Gary W. Duhon
601 South Arlington Ave.
Reno NV 89509

Gary@Duhonlawltd.com
(775) 250-7970

April 3, 2014

Alaina Burtenshaw, Esq., Chairman
Rebecca Wagner, Commissioner
David Noble, Esq., Commissioner
Crystal Jackson, Executive Director
Public Utilities Commission of Nevada
1150 East Williams Street
Carson City, Nevada 89701

Re: Docket No. 13-04035
Prospector Pipeline Company UEPA Permit to Construct Eureka Pipeline

Ladies and Gentlemen:

Pursuant to NRS 704.870(2)(b), attached for your consideration is the Utility Environmental Protection Act ("UEPA") Permit Application for the Eureka Pipeline Project ("EPP") by applicant Prospector Pipeline Company ("PPC"). The initial Application (notice) was filed April 29, 2013 and is pending under Docket NO. 13-04035.

A copy of this application has been served on the Clerk of Eureka County, the Administrator of the Nevada Division of Environmental Protection of the Department of Conservation and Natural Resources and the Nevada State Clearinghouse. Summaries of the Application have been or will be published in the Eureka Sentinel. Proofs of such service and publication are or will be included in the Application.

Respectfully submitted,
Law Offices of Gary Duhon, Ltd.

Gary W. Duhon

Attachments:
Draft Notice
Public Utilities Commission of Nevada Utility Environmental Protection Act Permit Application

UTILITY ENVIRONMENTAL PROTECTION ACT PERMIT APPLICATION
PER NRS 704.870(2)(b)
(Initial Filing 4/29/2013)

Eureka Pipeline

Applicant: Prospector Pipeline Company
Docket No. 13-04035

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Exhibit D – Eureka Pipeline Site Plan Drawings (NAC 703.423(1)(c))
Exhibit E – Alternative Alignments (NAC 703.423(2)(d))
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Exhibit G – Notice of Application and Proof of Public Notice (NAC 703.423(5) / NRS 704.870(4)(b))
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Exhibit I – Copy of Permits Obtained (NAC 703.423(11)(a))
Nevada Department of Transportation District 3 Encroachment Permit

CERTIFICATE OF SERVICE

I am a resident of the State of Nevada, over the age of eighteen years, and not a party to the within application. My business address is Wood Rodgers, Inc., 5440 Reno Corporate Drive, Reno, NV 89511. On April 3, 2014, I served the

UTILITY ENVIRONMENTAL PROTECTION ACT PERMIT APPLICATION OF PROSPECTOR PIPELINE

☐ **BY FAX:** by transmitting via facsimile the document(s) listed above to the fax number(s) set forth below on this date before 5:00 p.m.

☐ **BY HAND:** by personally delivering the document(s) listed above to the person(s) at the address(es) set forth below.

☒ **BY MAIL:** by placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at Reno, Nevada addressed as set forth below.

Clerk – Treasurer
Eureka County
10 South Main Street
Eureka, Nevada 89316

☐ **BY OVERNIGHT MAIL:** by causing document(s) to be picked up by an overnight delivery service company for delivery to the addressee(s) on the next business day.

☒ **BY PERSONAL DELIVERY:** by causing personal delivery by **Leslie Burnside** of the document(s) listed above to the person(s) at the address(es) set forth below.

Nevada State Clearinghouse
Department of Administration
Nevada Division of State Lands
901 S. Stewart Street, Suite 5003
Carson City, Nevada 89701

Office of the Administrator
Nevada Division of
Environmental Protection
Department of Conservation
and Natural Resources
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701

I declare under penalty of perjury under the laws of the State of Nevada that the above is true and correct.

Executed on April 3, 2014 at Reno, Nevada.

Leslie M. Burnside

PUBLIC UTILITIES COMMISSION OF NEVADA
DRAFT NOTICE
(Applications, Tariff Filings, Complaints, and Petitions)

Pursuant to Nevada Administrative Code ("NAC") 703.162, the Commission requires that a draft notice be included with all applications, tariff filings, complaints and petitions. Please complete and include **ONE COPY** of this form with your filing. (Completion of this form may require the use of more than one page.)

A title that generally describes the relief requested (see NAC 703.160(4)(a)):

Application for permit to construct a private, natural gas pipeline facility under the Nevada Utility Environmental Protection Act.

The name of the applicant, complainant, petitioner or the name of the agent for the applicant, complainant or petitioner (see NAC 703.160(4)(b)):

Prospector Pipeline Company

A brief description of the purpose of the filing or proceeding, including, without limitation, a clear and concise introductory statement that summarizes the relief requested or the type of proceeding scheduled **AND** the effect of the relief or proceeding upon consumers (see NAC 703.160(4)(c)):

Prospector Pipeline Company requests that the Public Utilities Commission of Nevada issue a permit to construct the Eureka Pipeline Project located in Eureka County, Nevada under the Nevada Utility Environmental Protection Act. The Eureka Pipeline Project is a private, 12 inch diameter natural gas pipeline extending south approximately 18 miles from the southern terminus of the existing North Elko Pipeline at the Goldstrike Meter Station to the Newmont Gold Quarry Mine. The relief requested will allow Prospector Pipeline Company to provide natural gas service to Newmont USA Limited and/or its affiliates ("Newmont") and will allow the use of natural gas instead of propane at the Newmont facilities, which is expected to make more propane available to consumers in the region, thereby reducing shortages of propane available to consumers in the region.

A statement indicating whether a consumer session is required to be held pursuant to Nevada Revised Statute ("NRS") 704.069(1)[1]:

Prospector Pipeline Company does not believe a consumer session is required by NRS 704.069(1).

If the draft notice pertains to a tariff filing, please include the tariff number **AND** the section number(s) or schedule number(s) being revised.

This draft notice does not pertain to a tariff filing.

---

[1] NRS 704.069 states in pertinent part:

1. The Commission shall conduct a consumer session to solicit comments from the public in any matter pending before the Commission pursuant to NRS 704.061 to 704.110 inclusive, in which:

(a) A public utility has filed a general rate application, an application to recover the increased cost of purchased fuel, purchased power, or natural gas purchased for resale or an application to clear its deferred accounts; and

(b) The changes proposed in the application will result in an increase in annual gross operating revenue, as certified by the applicant, in an amount that will exceed $50,000 or 10 percent of the applicant's annual gross operating revenue, whichever is less.

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

IN THE MATTER OF:

Application of **PROSPECTOR PIPELINE COMPANY,** for a Permit to Construct the Eureka Pipeline Project pursuant to the provisions of the Utility Environmental Protection Act	)	Docket No. 13-04035

APPLICATION FOR A PERMIT TO CONSTRUCT A PRIVATE NATURAL GAS PIPELINE FACILITY UNDER THE UTILITY ENVIRONMENTAL PROTECTION ACT

Eureka Pipeline Project

April 3, 2014

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the proposed facility (NAC 703.423(4); NRS 704.870(1)(c)) . . . . . .

11. A copy of the public notice of the application and proof of publication of the public notice (NAC 703.423(5); NRS 704.870(4)(b)) 9

12. Proof that a copy of the amended application has been submitted to the Nevada State Clearinghouse and has been served upon the clerk of each local government in the area in which any portion of the facility is to be located (NAC 703.423(6); NRS 704.870(4)(a)) 9

13. An explanation of the nature of the probable effect on the environment including a reference to any studies (NAC 703.423(7)(a); NAC 703.423(3); NRS 704.870(1)(b)) 9

14. An Environmental Statement that includes the name, qualifications, professions and contact information of each person with primary responsibility for the preparation of the environmental statement (NAC 703.423(7)(b)(1)) 9

15. An environmental statement that includes the name, qualifications, professions and contact information of each person who has provided comments or input in the preparation of the environmental statement (NAC 703.423(7)(b)(2)) 10

16. A bibliography of materials used in the preparation of the environmental statement (NAC 703.423(7)(b)(3)) 11

17. A description of the environmental characteristics of the project area existing at the time the amended application is filled with the Commission (NAC 703.423(7)(b)(4)(I)). 15

18. A description of the environmental impacts of the construction and operation of the proposed facility on the project area before mitigation (NAC 703.423(7)(b)(4)(II)) 16

19. A description of the environmental impacts of the construction and operation of the proposed facility on the project area after mitigation (NAC 703.423(7)(b)(4)(III)) 17

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20. Unless, pursuant to paragraph (b) of subsection 1 of NRS 704.890, the proposed utility facility is exempt from the requirement that the Commission find and determine the extent to which the proposed utility facility is needed to ensure reliable utility service to customers in this state, an explanation of the extent to which the proposed facility is needed to ensure reliable utility service to customers in this state, including if the proposed facility was approved in a resource plan or an amendment to a resource plan (NAC 703.423(8)(a). 17

21. Unless, pursuant to paragraph (b) of subsection 1 of NRS 704.890, the proposed utility facility is exempt from the requirement that the Commission find and determine the extent to which the proposed utility facility is needed to ensure reliable utility service to customers in this state, an explanation of the extent to which the proposed facility is needed to ensure reliable utility service to customers in this state, including if the proposed facility was not approved in a resource plan or an amendment to a resource plan, a description of the extent to which the proposed facility will provide service to customers in this State (NAC 703.423(8)(b)(1)) 18

22. Unless, pursuant to paragraph (b) of subsection 1 of NRS 704.890, the proposed utility facility is exempt from the requirement that the Commission find and determine the extent to which the proposed utility facility is needed to ensure reliable utility service to customers in this state, an explanation of the extent to which the proposed facility is needed to ensure reliable utility service to customers in this state, including if the proposed facility was not approved in a resource plan or an amendment to a resource plan, a description of the extent to which the proposed utility facility will enhance the reliability of utility service in this State (NAC 703.423(8)(b)(2)) 18

23. Unless, pursuant to paragraph (b) of subsection 1 of NRS 704.890, the proposed utility facility is exempt from the requirement that the Commission find and determine the extent to which the proposed utility facility is needed to ensure reliable utility service to customers in this state, an explanation of the extent to which the proposed facility is needed to ensure reliable utility service to 19

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customers in this state, including if the proposed facility was not approved in a resource plan or an amendment to a resource plan, a description of the extent to which the proposed utility facility will achieve interstate benefits by the proposed construction and modification of transmission facilities in this State, if applicable (NAC 703.423(8)(b)(3)) . . . . . .

24. An explanation of how the need for the proposed facility as described in subsection 8 balances any adverse effects on the environment as described in subsection 7 (NAC 703.423(9)) 19

25. An explanation of how the proposed utility facility represents the minimum adverse effect on the environment including the state of available technology (NAC 703.423(10)(a)) 20

26. An explanation of how the proposed utility facility represents the minimum adverse effect on the environment including the nature of various alternatives (NAC 703.423(10)(b)) 21

27. An explanation of how the proposed utility facility represents the minimum adverse effect on the environment including the economics of various alternatives (NAC 703.423(10)(c)) 21

28. An explanation of how the location of the proposed facility conforms to applicable state and local laws and regulations, including a list of all permits, licenses and approvals required by federal, state and local statutes, regulations and ordinances. The explanation must include a list that indicates all permits, licenses and approvals the applicant has obtained, including copies thereof (NAC 703.423(11)(a)) 22

29. An explanation of how the location of the proposed facility conforms to applicable state and local laws and regulations, including a list of all permits, licenses and approvals required by the federal, state and local statutes, regulations and ordinances. The explanation must include a list that indicates all permits, licenses and approvals the applicant is in the process of obtaining to commence construction of the proposed facility including 23

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an estimated timeline for obtaining these. (NAC 703.423(11)(b)) . . . . . .

30. An explanation of how the proposed facility will serve the public interest including the economic benefits that the proposed facility will bring to the applicant and the State (NAC 703.423(12)(a)) 24

31. An explanation of how the proposed facility will serve the public interest including the nature of the probable effect on the environment in this State if the proposed utility facility is constructed (NAC 703.423(12)(b)) 25

32. An explanation of how the proposed utility facility will serve the public interest including the nature of the probably effect on the public health, safety and welfare of the residents of this State if the proposed utility facility is constructed (NAC 703.423(12)(c)) 25

33. An explanation of how the proposed utility facility will serve the public interest including the interstate benefits expected to be achieved by the proposed electric transmission facility in this State, if applicable (NAC 703.423(12)(d)) 27

E. CONCLUSION 27

F. EXHIBITS

Exhibit A – Regional Map (NAC 703.423(1)(a))

Exhibit B – Existing Facilities (NAC 703.423(1)(c))

Exhibit C – Eureka Pipeline Project Alignment and Proposed Facilities (NAC 703.423(2)(c))

Exhibit D – Eureka Pipeline Site Plan Drawings (NAC 703.423(1)(c))

Exhibit E – Alternative Alignments (NAC 703.423(2)(d))

Exhibit F – BLM Environmental Assessment, Draft Finding of No Significant Impact, and Class III Cultural Resources Inventory Report (NRS704.870(1)(b)/NAC 703.423(3))

Exhibit G – Notice of Application and Proof of Public Notice (NAC 703.423(5) / NRS 704.870(4)(b))

Exhibit H – Proof of Application Submittal to Nevada State Clearinghouse, Nevada Division of Environmental Protection Department of Conservation and Natural Resources, (NAC 703.423(6)/NRS 704.870(4)(a)), and Proof of Application Submittal to Clerk Eureka County (NRS 704.870(4)(b)) and Certificate of Service

Exhibit I – Copy of Permits Obtained (NAC 703.423(11)(a))

Nevada Department of Transportation District 3 Encroachment Permit

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

IN THE MATTER OF:

Application of **PROSPECTOR PIPELINE COMPANY,** for a Permit to Construct the Eureka Pipeline Project pursuant to the provisions of the Utility Environmental Protection Act	Docket No. 13-04035

APPLICATION FOR A PERMIT TO CONSTRUCT A PRIVATE NATURAL GAS PIPELINE FACILITY UNDER THE UTILITY ENVIRONMENTAL PROTECTION ACT

Eureka Pipeline Project

Applicant, PROSPECTOR PIPELINE COMPANY ("PPC' or "Applicant"), by and through the undersigned, and in accordance with NRS 704.870(2)(b), hereby files with the Public Utilities Commission of Nevada ("Commission") an Application ("Application") for a Permit to Construct a private, 12 inch diameter natural gas pipeline facility totaling approximately 18 miles in Eureka County, Nevada pursuant to Nevada's Utility Environmental Protection Act ("UEPA"), set forth in NRS 704.820 to 704.900, and the Commission's regulations thereunder, NAC 703.414 to 703.427. The proposed project is referred to as the Eureka Pipeline Project (EPP).

A. BACKGROUND

UEPA establishes a two-step application procedure for facilities subject to federal permitting and environmental review. Under NRS 704.870(2)(a), if a federal agency is required to conduct an environmental analysis of a proposed facility, the applicant is required to file a notice with the Commission and each other permitting entity, in such a form as the Commission or other permitting entity prescribes. This notice must be filed not later than the date the request

for an environmental analysis is made to the appropriate federal agency for approval for the construction of the utility facility. The notice must contain a description of the location and of the utility facility to be constructed, summary of the studies that have been made of the environmental impact of the facility, and reasonable alternative locations, their merits or detriments, and a statement of reason for selection of the preferred location for the facility. NRS 704.870(1). The notice required by NRS 704.870(2)(a) was filed with the Commission by Applicant on April 29, 2013 and is pending under this Docket No. 13-04035.

Subsequently, under NRS 704.870(2)(b), not later than 30 days after the issuance of the Final Environmental Assessment or Final Environmental Impact Statement (but not the record of decision or similar document), the applicant is required to file with the Commission a UEPA application that complies with NRS 704.870(1), and to file with each other permitting entity applications for permits, license or other approvals required for the construction of the utility facility. The final United States Department of the Interior, Bureau of Land Management, Eureka Pipeline Project Environmental Assessment DOI-BLM-NV-N020-2014-EA, file Number NVN-092048 ("BLM EA"), was issued March 4, 2014 and the public comment period for the BLM EA closed on March 19, 2014. Public review of the BLM EA for the EPP did not result in substantive public comment. BLM EA public review comments are made available on the BLM Elko District website at: http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_information/nepa/eureka_pipeline_project.html.

Applicant is filing this Application in accordance with the requirements of NRS 704.870(2)(b).

The Eureka Pipeline Project

The EPP will be constructed, owned and operated by Applicant. The EPP will be a 12 inch diameter underground natural gas pipeline extending from the existing Goldstrike Meter Station/Eureka Pipeline Receipt Point, connecting to the Newmont Leeville Mine, and then

extending on to the Newmont Gold Quarry Mine. See Exhibit C (EPP Alignment and Proposed Facilities). The total length of the pipeline will be 18± miles. The project will require three new above-ground facilities, including the Leeville Delivery Point/Regulating/Meter Station, the Leeville Mainline Valve, and the Gold Quarry Meter Station, each of which is shown on Exhibit C attached hereto.

The purpose of the EPP is to convey natural gas from the North Elko Pipeline (NEP) Goldstrike Meter Station/Eureka Pipeline Receipt Point to the Newmont Leeville Mine to replace current propane usage, and to the Newmont Gold Quarry Mine to provide a reliable supply of natural gas and to eliminate the need for current seasonal propane usage. The EPP is intended to improve energy efficiency, reduce emissions, enhance safety, and provide operational cost savings for the Leeville and Gold Quarry mining operations.

The pipeline will run east from the NEP Goldstrike Meter Station/EPP Receipt Point for approximately 1,400 feet and then head due south through the North Area Leach Plan of Operation (POO) area through the Chevas POO, into the Leeville POO and to the Leeville Mine. The pipeline will then trend southeast through the High Desert and Carlin POOs to the Gold Quarry POO following the haul road to Gold Quarry Mine in Newmont's South Operations Area.

The EPP will be primarily located on federal land managed by the BLM, Elko District Tuscarora Field Office and private lands owned by Elko Land and Livestock (Newmont), Newmont Mining and Newmont USA. The EPP will carry the fuel necessary to convert specific facilities at the Leeville and Gold Quarry Mines from propane to natural gas.

This UEPA application is intended to meet the requirements set forth in NRS 704.870(2)(b) and NAC 703.423. PPC hereby respectfully requests that the Commission issue a Permit to Construct the Eureka Pipeline Project pursuant to NRS 704.8905.

B. INFORMATION REGARDING THE APPLICANT

PPC is a Nevada corporation formed under and pursuant to Chapter 82 of the Nevada Revised Statutes. All correspondence related to this Application (including copies of all pleadings, notices, orders and discovery requests), should be sent to the undersigned representatives at the addresses set forth below:

Applicant:
Prospector Pipeline Company
Brian Habersack, Vice President of Operations
2981 Gold Canal Drive,
Rancho Cordova, CA 95670
(916) 859-4700
BHabersack@gasbiz.com

Attorney for the Applicant:
Law Offices of Gary Duhon, Ltd.
Gary W. Duhon
601 South Arlington Ave.
Reno, NV 89509
(775) 250-7970
Gary@DuhonLawLtd.com

C. AUTHORITY

This Application is filed pursuant to the Commission's regulations governing pleadings (NAC 703.530 et seq.); UEPA (NRS 704.820 to 704.900), specifically: NRS 704.870(2)(b) (filing of an application when there is a federal agency involved); NRS 704.873 (Commission has exclusive jurisdiction to determine need for utility facilities); NRS 704.877(1) (duty to accept findings and conclusions of environmental review that already has been conducted) and NRS 704.890 (grant or denial of application; required findings; conditions and modifications); and NAC 703.415 to 703.427 (the Commission's regulations governing construction of utility facilities), specifically, NAC 703.423 (application for permit when federal agency has issued final environmental assessment).

D. INFORMATION REQUIRED BY STATUTE AND REGULATION

Together with Exhibits A through I attached hereto and incorporated herein, the following in this Section D provides the information required by NAC 703.423 and NRS 704.870, in the order specified.

1. **General description of the site of the proposed facility (NAC 703.423(1)(a); NRS 704.870(1)(a)).**

The proposed EPP will be located on public and private land in Eureka County. The 18± mile pipeline generally extends south from the point of connection at the North Elko Pipeline Goldstrike Meter Station/EPP Receipt Point, to the Leeville Mine, and then onward to the Gold Quarry Mine. See Exhibit A (Regional Map); Exhibit B (Existing Facilities); and Exhibit C (EPP Alignment and Proposed Facilities).

This EPP, not the individual mines which it will serve, is the subject of this application.

2. **Legal description of the site (NAC 703.423(1)(b)).**

Eureka Pipeline Project
Public and Private Lands Legal Description

Township, Range	Section	Legal Description
T36N R50E	29	NE4
	28	W2
	33	W2
T35N R50E	2	NW4, SW4
	11	NE4NW4, NE4, NE4SE4
	12	SW4
	13	E2NW4, S2NE4
T35N R51E	19	NW4, S2NE4, E2SE4
	30	NE4NE4
	29	W4
	32	E2NW4, SW4NE4, W2SE4
T34N R51E	5	E2
	4	SW4SW4
	9	W2NW4, SW4
	16	E2NW4, SW4NE4, SE4
	21	NE4
	22	W2
	27	N2, NE4SE4
	26	NW4NW4, S2
	25	S2SW4, SW4SE4
	36	N2
T34N R52E	31	NW4

3. **Appropriately scaled site plan drawings of the proposed facility, vicinity maps and routing maps (NAC 703.423(1)(c)).**

Please refer to Exhibit A (Regional Map); Exhibit B (Existing Facilities), Exhibit C (EPP Alignment and Proposed Facilities); and Exhibit D (EPP Site Plan Drawings).

4. **Size and nature of the proposed facility (NAC 703.423(2)(a)).**

The EPP will be a 12 inch diameter underground natural gas pipeline connecting to the North Elko Pipeline Goldstrike Meter Station/Eureka Pipeline Receipt Point, extending south to the Leeville Mine and terminating at the Newmont Gold Quarry Mine. The total length of the pipeline will be 18± miles. The project will require three new above-ground facilities, including the Leeville Delivery Point/Regulating/Meter Station, the Leeville Mainline Valve, and the Gold Quarry Meter Station, each of which is shown on Exhibit C attached hereto.

5. **Natural resources that will be used during construction and operation (NAC 703.423(2)(b)).**

During construction, non-potable water will be used for dust abatement and hydrostatic testing of the pipeline to check for leaks. Non-potable water will be obtained from Newmont mining operations, with appropriate permission. After construction is completed operation of the pipeline is not anticipated to require the use of natural resources.

6. **Layout diagrams of the proposed facility and associated equipment (NAC 703.423(2)(c)).**

Please refer to Exhibit C (EPP Alignment and Proposed Facilities) and Exhibit D (EPP Site Plan Drawings).

7. **Scaled diagrams of the structures at the proposed facility (NAC 703.423(2)(d)).**

Please refer to Exhibit D (EPP Site Plan Drawings).

8. **A statement concerning whether the proposed facility is an electric generating plant or the associated facilities of an electric generating plant that uses renewable energy as its primary source of energy to generate electricity (NAC 703.423(2)(e)).**

The proposed facility is not an electric generating plant, nor is it an associated facility of an electric generating plant that uses renewable energy as its primary source of energy. The proposed EPP is a natural gas pipeline that will provide natural gas to Newmont Mining operation facilities.

9. **A copy and summary of any studies which have been made of the environmental impact of the proposed facility (NAC 703.423(3); NRS 704.870(1)(b)).**

Studies of the environmental impact of the EPP include the BLM EA, the Draft Finding Of No Significant Impact (FONSI) and the Class III Cultural Resources Inventory Report ("Cultural Report"), copies of which are is attached hereto in Exhibit F.

The BLM EA provides an analysis of potential impacts to resources and resource uses as identified by the BLM during project scoping, which analysis reflects that the EPP will be constructed largely within areas that are included within Newmont's existing, BLM-approved Plans of Operation. The Draft FONSI issued by the BLM provides that the EPP is in conformance with the approved Elko Resources Management Plan and is consistent with local and state plans and polices. The Cultural Report was completed in compliance with BLM Standards and is currently under review by the Nevada State Historic Preservation Office (SHPO) through consultation with the BLM. The BLM EA provides that the EPP is not expected to cumulatively contribute to direct effects to historic properties.

10. **A description of any reasonable alternate locations for the proposed facility, a description of the comparative merits or detriments of each location submitted and a statement of reasons why the location is best suited for the proposed facility (NAC 703.423(4); NRS 704.870(1)(c)).**

Three alternative routes were considered but eliminated from further analysis as a result of potential negative impacts to sensitive resources, infeasible or excessively difficult construction requirements, potentially unsafe construction conditions for workers and the public, excessive impact on undisturbed land compared to the selected EPP Alignment and conflict with current or planned mining activities. The locations of the alternative alignments are shown on

Exhibit E attached hereto and include the following:

Newmont-Barrick Mine Road

An alternative alignment following Nevada State Route 766 and the Newmont-Barrick Mine Road (Road 237A) was explored by Applicant. This alternative was eliminated from further consideration due to (i) its close proximity to and its crossing of Maggie Creek (which supports riparian habitat and endangered species and their habitat), (ii) the high likelihood of impact to cultural resources, (iii) potential disruption of daily traffic flow and (iv) safety concerns for construction workers and travelers.

EPP Alignment South Extent

At the south extent of the EPP alignment, PPC explored an option to run the alignment as far as possible down the southwest side of State Route 766, a portion of which has previously been disturbed. An existing waterline is located within the EPP proposed alignment in this section. This alternative was eliminated from further consideration because of (i) the route's close proximity to the existing waste rock dump and the likelihood of future failures of the waste rock dump slope similar to failures in the past and (ii) negative impact to the existing water line located in this section of alignment. These features pose additional safety concerns, impacts to existing facilities and likely would result in more difficult and possibly infeasible construction requirements.

Minor Alignment Adjustments

The initial EPP alignment was evaluated in the field for constructability, safety, maximum use of existing disturbed lands, and avoidance of conflict with current and future mining activities. The initial EPP alignment was adjusted in four general locations to maximize constructability of the pipeline, to maximize the use of previously disturbed lands, to maximize safety, and to avoid impact on current and future mining activities. The alignment adjustments added approximately 1 mile to the length of the pipeline.

11. A copy of the public notice of this application and proof of publication of the public notice NAC 703.423(5); NRS 704.870(4)(b)).

Public notice of this application was submitted to the Eureka Sentinel, a newspaper published weekly and distributed in the areas in which the EPP is proposed to be entirely located, on Friday March 28, 2014. A copy of the public notice of this Application and the associated proof of payment for publication of the public notice is contained in Exhibit G. The public notice will be published in the Eureka Sentinel on Friday April 4, 2014 at which time proof of publication of the public notice will be provided to the Commission.

12. Proof that a copy of this application has been submitted to the Nevada State Clearinghouse and has been served upon the clerk of each local government in the area in which any portion of the facility is to be located (NAC 703.423(6); NRS 704.870(4)(a); NRS 704.870(3)).

The Certificate of Service attached hereto as Exhibit H certifies that a copy of this Application has been submitted to the Nevada State Clearinghouse and has been served on the Clerk of Eureka County, Nevada (in which County the entire EPP is located) and on the Division of Environmental Protection.

13. An explanation of the nature of the probable effect on the environment including a reference to any studies (NAC 703.423(7)(a); NAC 703.423(3); NRS 704.870(1)(b)).

The nature of the probable effect of the EPP on the environment is explained in detail in the in the BLM EA, attached in Exhibit F. Subject to its final issuance, the Draft FONSI reflects the BLM determination that the EPP will have no significant impact on the environment.

14. An Environmental Statement that includes the name, qualifications, professions and contact information of each person with primary responsibility for the preparation of the environmental statement (NAC 703.423(7)(b)(1)).

The name, profession, qualifications and contact information for the persons with primary responsibility for the preparation of the BLM EA (Environmental Statement) is as follows:

Elisabeth Puentes, Realty Specialist and Project Manager
BLM Tuscarora Field Office
3900 East Idaho Street
Elko, NV 89801
Telephone (775) 753-0200
Fax (775) 753-0385

Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Telephone (775) 823-4068
Fax (775) 823-4066

Leslie Burnside, Associate Environmental Program Manager
M.S. Resource Management; B.S. Soil Science

Melissa Lindell, AICP, Principal Planner
M.S. City and Regional Planning; B.S. Urban Studies

Charles Zeier, RPA Principal, Zeier & Associates LLC
M.A. Anthropology; B.S. Anthropology
119 Tradewind Street
Clinton, Tennessee 37716
(Subconsultant to Wood Rogers, Inc.)

A comprehensive list of preparers of the EA (Environmental Statement) is contained in Section 5.2 of the BLM EA.

15. <u>An environmental statement that includes the name, qualifications, professions and contact information of each person who has provided comments or input in the preparation of the environmental statement (NAC 703.423(7)(b)(2)).</u>

A list of persons, groups and agencies that were contacted during the preparation of the BLM EA are provided in Section 5.1 of the BLM EA entitled "Persons, Groups, Tribes and Agencies Consulted", and include the following:

Eureka County Department of Natural Resources
Eureka County Assessor's Office
Nevada Department of Wildlife – Chett VanDellan and Matt Jeffress
Nevada Natural Heritage Program
Nevada Department of Transportation, District III – Jo Sherwood
United States Fish and Wildlife Service
Newmont Mining Corporation

Barrick Gold of North America, Inc.
NV Energy
Newmont USA Limited/Elko Land and Livestock Company
Barrick Goldstrike Mines
Native American Consultation:
Confederate Tribes of the Goshute Indian Reservation
Elko Band Council
Shoshone Paiute Tribes of the Duck Valley Indian Reservation
Wells Band Council
Te-Moak Tribe of Western Shoshone
Battle Mountain Band Council
South Fork Band Council
Duckwater Shoshone Tribe
Yomba Shoshone Tribe
Ely Shoshone Tribe
Bureau of Indian Affairs
Western Shoshone Descendants of Big Smoky
Western Shoshone Defense Project
Western Shoshone Committee

16. A bibliography of materials used in the preparation of the environmental statement (NAC 703.423(7)(b)(3))

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Bing Maps: @ Harris Corp, Earthstar Geographics LLC © Microsoft Corporation.

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_____ 2002a. Environmental Impact Statement for the Leeville Project. Elko District Office, Elko, Nevada.

_____ 2002b. Final Environmental Impact Statement Newmont Mining Corporation's South Operations Area Project Amendment. Elko District Office, Elko, Nevada.

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_____ 2010b. Draft Environmental Impact Statement for the Genesis Project. Elko District Office, Elko, Nevada.

_____ 2010c. Final Supplemental Environmental Impact Statement. South Operations Area Project Amendment Cumulative Effects. Elko District Office, Elko, Nevada.

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_____ 2013c. UTM Locations for Hawk, Eagle and Raptor Nests. Nycole Burton Wildlife Biologist.

_____ 2013d. Elko District Rangeland Management Specialist. Jerri Bertola.

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17. A description of the environmental characteristics of the project area existing at the time the application is filed with the Commission (NAC 703.423(7)(b)(4)(I))

The EPP would be located along the eastern side of the Tuscarora Mountains primarily within BLM authorized mining Plan of Operation boundaries. Approximately 73 acres of the 270 acre study area have been disturbed by previously permitted exploration activity including roads and drill pads, wildfires from 2005 and later, pipeline and transmission line construction, and mining activities. Vegetation on the undisturbed portion of the proposed EPP study area is typical of upland Great Basin sagebrush/bunchgrass plant community. Major vegetative species present in undisturbed areas include: Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), Douglas rabbitbrush (*Chrysothamnus vicidiflorus*), spiny hopsage (*Grayia spinosa*), Sandberg bluegrass (*Poa Sandbergii*), bottlebrush squirreltail (*Elymus elmoides*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass (*Achnatherum thurberianum*), Indian ricegrass (*Achnatherum hymenoides*), lupine (*Lupinus spp.*), arrowleaf basalmroot (*Balsamorhiza sagittata*), phlox (*Phlox spp.*), and aster (*Aster spp.*). No tree dominant plant communities are present in the study area. Vegetation on areas damaged by wildfire is recovering, both from natural revegetation and from reclamation and restoration efforts by the BLM and others.

Additional detail on the environmental characteristics of the project area existing at the time of filing this Application is contained in the BLM EA attached hereto in Exhibit F.

18. A description of the environmental impacts of the construction and operation of the proposed facility on the project area before mitigation (NAC 703.423(7)(b)(4)(II))

Approximately 73 acres of upland within the study area are currently disturbed due to roads, mining activity, or wildfire damage. Approximately 197 acres of undisturbed upland in the project area would be disturbed from EPP construction. Construction related impacts to currently undisturbed land surface within the temporary construction right-of-way that includes three equipment and construction materials staging areas would be associated with clearing of vegetation, blading a smooth and safe construction surface, trench excavation and backfill after the pipeline has been installed. Post construction, operation of the EPP would not require any additional environmental impacts.

Upon completion of pipeline installation and trench backfill, stabilization and seeding would reclaim approximately 211 acres of the total proposed disturbance of 270 acres. The difference is 59 acres of existing roads and other mining activities that would remain in a disturbed condition to allow for continued use until such time as they are reclaimed through the appropriate mining activity reclamation plan. Approximately 0.71 acre associated with the Leeville Delivery Point/Regulating/Meter Station, Leeville Main Line Valve, and the Gold Quarry Meter Station would be stabilized but not reseeded to allow for safe operation of meter station equipment, and to minimize wildfire fuels.

The EPP includes construction measures and design features to avoid a level of impact that would require mitigation. In accordance with the BLM EA and Draft FONSI attached hereto as Exhibit F, the proposed project does not require mitigation measures.

The BLM EA analyzes in detail the impacts on the environment of the EPP. Section 3 of the BLM EA provides, in part:

The surface disturbing impacts in currently undisturbed areas of the study area are

considered to be temporary impacts due to ground disturbance as the pipeline route is excavated and the pipeline installed. Site stabilization and seeding of currently undisturbed areas would occur immediately after completion of pipeline construction, and the vegetation would be restored as quickly as precipitation allows. The other category of potential impacts is long term, which, in this case is estimated at approximately 50 years – the expected lifetime of the active mine operations associated with the proposed EPP alignment, the only user of natural gas from the pipeline. Long term impacts would result primarily from ongoing pipeline operations. They include a low level of noise from equipment at the three surface stations, maintenance and safety inspections, and the physical presence of the three surface stations.

After consideration of the environmental effects described in detail in the BLM EA, the Draft FONSI provides that the EPP "with the project design specifications (environmental protection measures) identified in the EA will not significantly affect the quality of the human environment...."

19. **A description of the environmental impacts of the construction and operation of the proposed facility on the project area after mitigation (NAC 703.423(7)(b)(4)(III)).**

The BLM EA and Draft FONSI provide that impacts of the EPP are not of a level to require mitigation, so the impacts to the project area after mitigation are the same as the impacts before mitigation, as described in Section 18 above. In addition, although no mitigation is required, Section 2 of the BLM EA provides for detailed project construction measures and design features to reduce the impacts of the EPP to a less than significant level. (See BLM EA, Sections 2 and 4, Exhibit F).

20. **Unless, pursuant to paragraph (b) of subsection 1 of NRS 704.890, the proposed utility facility is exempt from the requirement that the Commission find and determine the extent to which the proposed utility facility is needed to ensure reliable utility service to customers in this state, an explanation of the extent to which the proposed facility is needed to ensure reliable utility service to customers in this state, including if the proposed facility was approved in a resource plan or an amendment to a resource plan (NAC 703.423(8)(a).**

NRS 704.890(1) provides as follows:

If the utility emits greenhouse gases and does not use renewable energy as its primary source of energy to generate electricity, the extent to which the facility is needed to ensure reliable utility service to customers in this state. NRS 704.890(1).

The BLM EA and Draft FONSI provide that construction and operation of the EPP is not expected to result in measureable impact to air quality and greenhouse gas emissions, and will not generate electricity. Accordingly, the EPP is exempt from the requirement under NRS 704.890(1) that the Commission can find and determine the extent to which the EPP is needed to ensure reliable utility service to customers in this state. Because of such exemption, Applicant is not required under NAC 703.423(8) to provide an explanation of the extent to which the EPP is needed to ensure reliable utility service to customers in this State. However, although Applicant is not consenting to the application of NAC 703.423(8) or the associated finding by the Commission, Applicant voluntarily provides the explanations addressing NAC 703.423(8)(a) and (b) in Sections 20, 21 and 22 hereof.

The EPP was not approved as part of a resource plan or an amendment to a resource plan.

21. Unless, pursuant to paragraph (b) of subsection 1 of NRS 704.890, the proposed utility facility is exempt from the requirement that the Commission find and determine the extent to which the proposed utility facility is needed to ensure reliable utility service to customers in this state, an explanation of the extent to which the proposed facility is needed to ensure reliable utility service to customers in this state, including if the proposed facility was not approved in a resource plan or an amendment to a resource plan, a description of the extent to which the proposed facility will provide service to customers in this State (NAC 703.423(8)(b)(1)).

The EPP will provide natural gas service to Newmont at two of its facilities located within the State of Nevada.

22. Unless, pursuant to paragraph (b) of subsection 1 of NRS 704.890, the proposed utility facility is exempt from the requirement that the Commission find and determine the extent to which the proposed utility facility is needed to ensure reliable utility service to customers in this state, an explanation of the extent to which the proposed facility is needed to ensure reliable utility service to customers

in this state, including if the proposed facility was not approved in a resource plan or an amendment to a resource plan, a description of the extent to which the proposed utility facility will enhance the reliability of utility service in this State (NAC 703.423(8)(b)(2)).

The EPP will enhance the reliability of utility service to Newmont in this state because pipelines remain the safest, most reliable means of transporting hydrocarbon energy, including natural gas. On a national level, the Pipeline & Hazardous Materials Safety Administration (PHMSA) concludes that "...(B)ecause such huge volumes of hazardous liquid and natural gas must be transported, the only feasible way to do so is through pipelines. Pipelines do not crowd our highways and waterways as trucks and barges will, nor do they contribute to traffic congestion or highway accidents. Pipelines, in short, are practical and safe..." (Pipeline Safety Awareness, U.S. Department of Transportation, Facts and Stats). The delivery of natural gas by pipeline is the most reliable and safe method of transporting fuel to the Newmont facilities.

23. **If the proposed facility was not approved in a resource plan or an amendment to a resource plan, a description of the extent to which the proposed utility facility will achieve interstate benefits by the proposed construction and modification of transmission facilities in this State, if applicable (NAC 703.423(8)(b)(3)).**

Interstate benefits of the EPP are not anticipated because the EPP is an intrastate project located within the state of Nevada.

24. **An explanation of how the need for the proposed facility as described in NAC 703.423(8) balances any adverse effects on the environment as described in NAC 703.423(7) (NAC 703.423(9)).**

As discussed in Section 22 hereof, the EPP will provide natural gas service to the Newmont mines and will enhance the reliability and safety of utility service in this state. As discussed above in Sections 18 and 19 . and in the BLM EA and as stated in the Draft FONSI, the adverse impacts of the construction and operation of the EPP are not sufficient to significantly affect the quality of the human environment. Accordingly, in balancing the need for and benefits of the EPP against the adverse impacts of the EPP, the significant benefits outweigh the insignificant negative impacts.

25. **An explanation of how the proposed utility facility represents the minimum adverse effect on the environment, including the state of available technology (NAC 703.423(10)(a)).**

As discussed above in Section 10 and as provided in detail in the BLM EA, a number of alternative alignments were considered before selection of the EPP alignment, which was selected in large part to minimize the impact on the environment. As discussed in Section 18 and 19 above, the construction of the EPP will include project construction measures and design features to reduce the environmental impacts of the EPP to a less than significant level. (See BLM EA, Sections 2 and 4, Exhibit F). These measures and features include, without limitation, employing limited operating periods to protect wildlife, weed control protocols, stabilization and re-vegetation of soils, construction equipment requirements to minimize impact to the environment, limitations on construction areas and staging areas, emergency response requirements, pipe coating and cathodic protection to protect against corrosion of the pipe, and other construction measures and features to minimize adverse impact on the environment. See BLM EA, Section 2 (Exhibit F). Because the EPP will be located underground, after construction is complete, the EPP will cause minimal impact to the environment.

The BLM EA provides the EPP will be constructed in accordance with all applicable legal requirements to enhance safety for the environment and the public. Section 2.1.2 of the BLM EA states:

> The Applicant would design, construct, test, and operate the EPP in accordance with U.S. Department of Transportation (DOT) regulations specified in 49 CFR 191, 192, and 199 "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" adopted by the Public Utilities Commission of Nevada pursuant to Nevada Administrative Code 704.460, and administered by the Public Utilities Commission of Nevada. 49 CFR 192 specifies pipeline material and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion, in addition to other design standards. PPC would also be subject to other applicable federal

and state regulations, including U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) requirements. These regulations are intended to ensure adequate protection for the public, pipeline workers, contractors, and employees and to prevent natural gas pipeline accidents and failures.

The BLM would require that PPC prepare a Plan of Development (POD) as part of the rights-of-way grant process in accordance with the regulations found at 43 CFR 2884.11. PPC's various construction and stabilization methods described in this EA also would be part of the POD.

26. An explanation of how the proposed utility facility represents the minimum adverse effect on the environment including the nature of various alternatives (NAC 703.423(10)(b)).

As discussed in Section 10 above and in Section 2.2 of the BLM EA (Exhibit F), three alternative alignments and alignment segment alternatives were considered by Applicant and dismissed in favor of the EPP alignment. The EPP alignment was selected after detailed analysis of potential impacts to environmental resources, feasibility of construction techniques, safe construction conditions for workers and the public, level of disturbance in currently undisturbed land surfaces, and potential for conflict with current or planned mining activities. The EPP alignment was selected to minimize environmental impacts associated with wildlife, cultural resources, visual resources, and disturbance to soils and vegetation. In addition, the EPP alignment provides the safest construction conditions for workers and the public, maximizes feasible construction techniques, maximizes the use of previously disturbed land surfaces, and minimizes conflict with current or planned mining activities.

27. An explanation of how the proposed utility facility represents the minimum adverse effect on the environment including the economics of various alternatives (NAC 703.423(10)(c)).

As discussed in Section 10 above, adjustments to the initial alignment of the EPP were made to maximize the use of previously disturbed lands and to minimize the negative impact on the environment, while considering also the cost and difficulty of construction and impact on existing uses. These alignment adjustments increased the length of the EPP by approximately one mile, but minimized the impact on the environment and existing uses. In addition, Applicant will employ the various construction measures and features describe in Section 25 above and in Section 2 of the BLM EA (Exhibit F), at additional cost, to minimize the negative impacts on the environment. Applicant has carefully analyzed the alignment of the EPP as well as construction techniques and other methods to minimize the impact on the environment while reducing the cost and difficulty of construction and impact on existing uses.

28. An explanation of how the location of the proposed facility conforms to applicable state and local laws and regulations, including a list of all permits, licenses and approvals required by federal, state and local statutes, regulations and ordinances. The explanation must include a list that indicates all permits, licenses and approvals the applicant has obtained, including copies thereof (NAC 703.423(11)(a)).

Applicant has identified and will conform to all federal, state and local laws and regulations applicable to the construction and operation of the EPP. The BLM has determined and stated in the BLM EA and Draft FONSI (Exhibit F), that the EPP alignment is in conformance with the approved Elko Resources Management Plan and is consistent with local and state plans and polices. The following table summarizes all permits, licenses and approvals the applicant has obtained, in full or in part, as of the submittal date of this Notice:

Eureka Pipeline Project
Authorization, Permits, Review and Approvals Obtained

Permit Required	Agency	Status
ROW Grant SF 299 Application for Transportation and Utility Systems and Facilities on Federal Lands NEPA	Bureau of Land Management	Application filed: April 29, 2013 Accepted: June 18, 2013 Initiated June 12, 2013 BLM ID Team Scoping Meeting EA Public Review Comment Period Posted March 4, 2014 Public Comment Period Closed March 19, 2014
Encroachment Permit	Nevada Department of Transportation District 3	Issued December 9, 2013 Attached hereto in Exhibit I

29. **An explanation of how the location of the proposed facility conforms to applicable state and local laws and regulations, including a list of all permits, licenses and approvals required by the federal, state and local statutes, regulations and ordinances. The explanation must include a list that indicates all permits, licenses and approvals the applicant is in the process of obtaining to commence construction of the proposed facility including an estimated timeline for obtaining these. (NAC 703.423(11)(b)).**

The following table summarizes the permits, licenses and approvals the Applicant is in the process of obtaining:

Eureka Pipeline Project
Authorization, Permits, Review and Approvals in Process

Permit Required	Agency	Anticipated Date of Issue
ROW Grant National Environmental Policy Act Final FONSI, Decision Record	Bureau of Land Management	April 11, 2014 April 11, 2014
Utility Environmental Protection Act Permit (UEPA)- Permit to Construct	Public Utilities Commission of Nevada	Subject to Commission Approval
Bureau of Air Pollution Control Permit	Nevada Department of Environmental Protection (NDEP)	To be secured by the Prime Contractor as required in the bid documents Late June 2014
National Pollution Discharge Elimination System (NPDES) Permit Notice of Intent (NOI) Application and Storm water Pollution	NDEP Bureau of Water Pollution Control (BWPC)	To be secured by the Prime Contractor as required in the bid documents Late June 2014

30. An explanation of how the proposed facility will serve the public interest including the economic benefits that the proposed facility will bring to the applicant and the State (NAC 703.423(12)(a)).

The EPP will serve the public interest by providing economic benefits to Newmont in the form of fuel cost reductions and reliable, safe delivery of fuel for its operations, and to the state through encouraging the business viability and success of Newmont, a large employer and important contributor to the economic vitality of the state. Newmont currently has no natural gas service at the Leeville Mine and relies on propane as a primary source of fuel. The Newmont Gold Quarry Mine receives natural gas service during a portion of the year, but receives no natural gas and must rely on propane during the winter when insufficient natural gas is available as a result of high demand for residential, commercial and other uses. The cost of natural gas is a fraction of the cost of propane and natural gas historically has remained among the least expensive and efficient of fuels. As of February 3, 2014, the wholesale cost of propane was $29.57 per million BTU (MMBtu), based on $2.705 per gallon and 91,500 Btu per gallon, approximately 5.89 times the wholesale cost of natural gas, which was $5.02 per MMBtu as of

such date. (Propane price from U.S. Energy Prices, as published by the Energy Information Administration, U.S. Department of Energy and natural gas price from Gas Daily, Henry Hub posting). As discussed above in Section 22, the EPP provides a reliable and safe source of fuel to maintain the operations of Newmont and to prevent shutdowns or other operational limitations as a result of the lack or shortage of fuel. The EPP will also benefit the Applicant by providing an important customer for natural gas sales.

31. An explanation of how the proposed utility facility will serve the public interest including the nature of the probable effect on the environment in this State if the proposed utility facility is constructed (NAC 703.423(12)(b)).

As discussed in Sections 13, 17-19, 25 – 27 and Section 30 and 32 hereof and in the BLM EA and in the Draft FONSI (Exhibit F), the construction and operation of the EPP will not have a significant negative effect on the environment, but will serve the public interest because the EPP will provide to Newmont a safe, reliable, economical and environmentally beneficial source of fuel.

32. An explanation of how the proposed utility facility will serve the public interest including the nature of the probable effect on the public health, safety and welfare of the residents of this State if the proposed utility facility is constructed (NAC 703.423(12)(c)).

The EPP will serve the public interest and the public health, safety and welfare of the residents of this state because the EPP provides a safe, reliable, economical and environmentally beneficial alternative to Newmont's use of propane or other fuel sources.

As provided in Section 22 hereof, the EPP will enhance the reliability of utility service to Newmont in this state because pipelines remain the safest, most reliable means of transporting hydrocarbon energy, including natural gas. According to the U.S. Department of Transportation, "(t)he natural gas industry has an excellent safety record and transportation by pipeline is the safest form of transportation. In 2007, there were more than 43,000 transportation fatalities in the United States. Of these, less than 0.03 percent was attributed to natural gas transmission and distribution pipelines" (Bureau of Transportation Statistics, United States Department of

Transportation). The delivery of propane by large truck, in contrast, increases traffic congestion and carries the risk of accidents involving vehicles carrying large quantities of flammable fuel. In fact, a recent article in Pipeline & Gas Journal December 2013 titled "Pipelines Prove Safer than Road or Rail" reported 2005-2009 incident rates per billion ton-miles for road at 22 times that of natural gas pipelines (19.95 versus 0.89). The large trucks delivering propane to Newmont share the road with local vehicle traffic as well as substantial mining traffic, including the buses that transport mine workers to and from the mines from the Elko area. The EPP will provide a safer alternative to those transportation safety concerns. This reduction in truck traffic also reduces air emissions and consumption of truck fuel.

In addition, many communities, homes and businesses in Nevada have no natural gas service and must rely on propane. A substantial portion of the demand for propane is from the mines in northeastern and north central Nevada. During times of propane shortage, these communities, homes and businesses must compete with the mines for limited supplies of propane for heating and other purposes (Associated Press Article, January 17, 2013). During the winter of 2012-2013, a propane shortage prompted Governor Sandoval to declare a state of emergency and to take action to speed up delivery of propane (Associated Press Article, January 17, 2013). The use of natural gas by Newmont will make available more propane for Nevada communities, homes and businesses in times of short supply.

As discussed in Section 30 hereof, the cost of natural gas is a fraction of the cost of propane and natural gas historically has remained among the least expensive and efficient of fuels. As of February 3, 2014, the wholesale cost of propane was $29.57 per million BTU (MMBtu), based on $2.705 per gallon and 91,500 Btu per gallon, approximately 5.89 times the wholesale cost of natural gas, which was $5.02 per MMBtu as of such date. (Propane price from U.S. Energy Prices, as published by the Energy Information Administration, U.S. Department of Energy and natural gas price from Gas Daily, Henry Hub posting). Newmont is expected to enjoy savings in fuel cost as a result of this fuel price differential, which enhances the financial

viability and stability of Newmont, a large employer and an important contributor to the economic vitality of the State of Nevada.

Natural gas is a clean burning and efficient fuel that produces less greenhouse gases than propane and other fuels. The U. S. Department of Energy has determined that the complete combustion of propane produces:

a. 700% more sulfur dioxide than natural gas;

b. 57% more nitrous oxides than natural gas; and

c. 15.94% more carbon dioxide than natural gas.

(Office of Energy Efficiency & Renewable Energy, U. S. Department of Energy)

The use of natural gas by Newmont will result in significant reductions in the production and emission of greenhouse gases by Newmont compared to the use of propane.

For these and the other benefits discussed in this Application, the construction and operation of the EPP will serve the public interest and promote the public health, safety and welfare.

33. An explanation of how the proposed utility facility will serve the public interest including the interstate benefits expected to be achieved by the proposed electric transmission facility in this State, if applicable (NAC 703.423(12)(d)).

The EPP is not an intrastate electric transmission facility.

E. CONCLUSION

For the foregoing reasons, PPC respectfully requests that the Commission:

1. Accept this UEPA Application as complying with NAC 703.423 and NRS 704.870(2)(b);
2. Grant to Applicant the requested Utility Environmental Protection Act permit to construct the EPP.
3. Grant such deviations from the Commission's regulations as may be in the public interest; and

4. Grant PPC such other and further relief as the Commission may find reasonable and appropriate under the circumstances.

Dated this 3rd day of April, 2014

PROSPECTOR PIPELINE COMPANY

By its legal counsel

Gary W. Duhon
Law Offices of Gary Duhon, Ltd
601 South Arlington Ave.
Reno, NV 89509
(775) 250 7970

EXHIBIT A

REGIONAL MAP

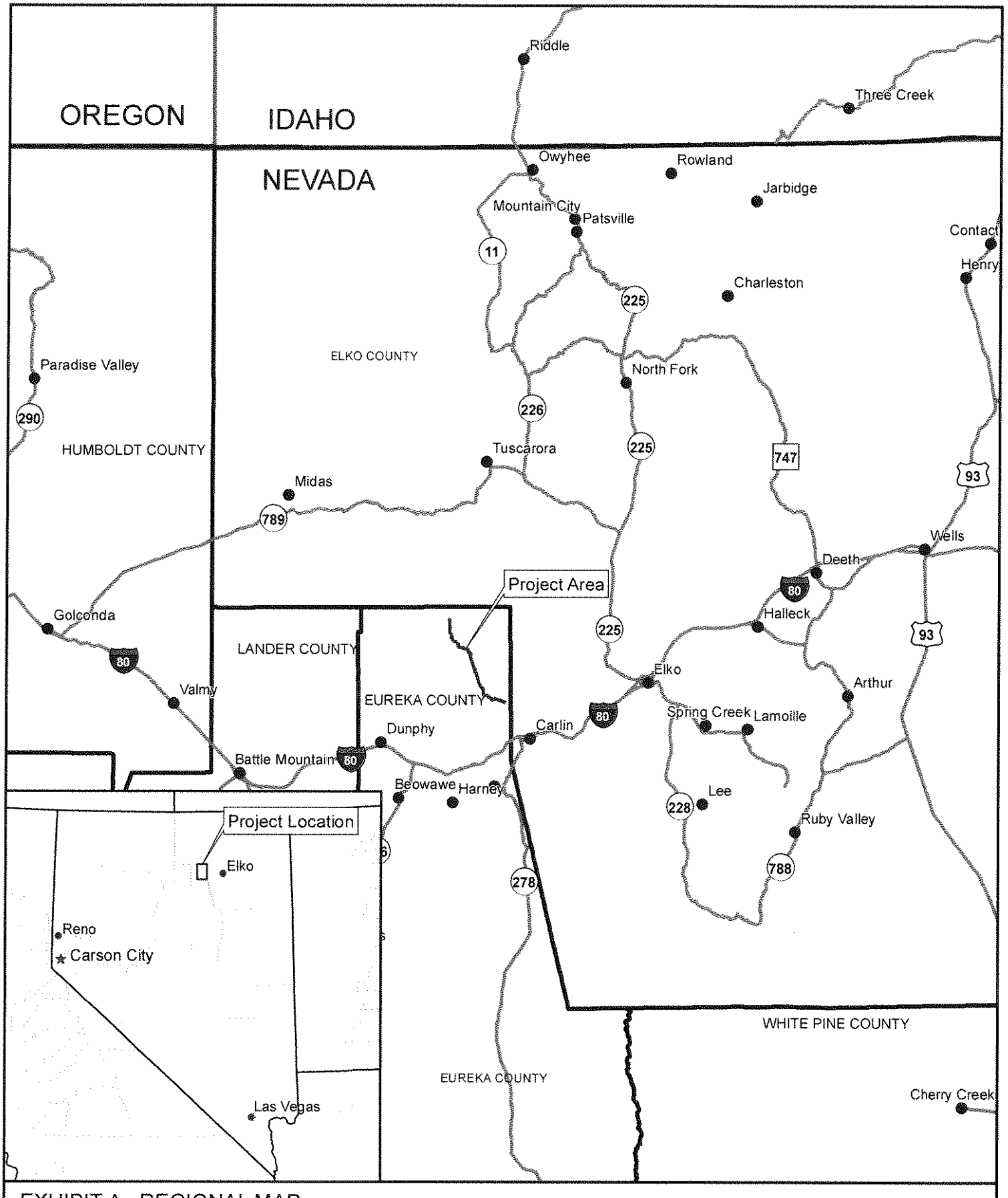


EXHIBIT A - REGIONAL MAP
NAC 703.423(1)((a)
EUREKA PIPELINE PROJECT
MARCH, 2014

NOTES:
BACKGROUND: ESRI
COUNTIES/ROADS: ESRI

EXHIBIT B

EXISTING FACILITIES

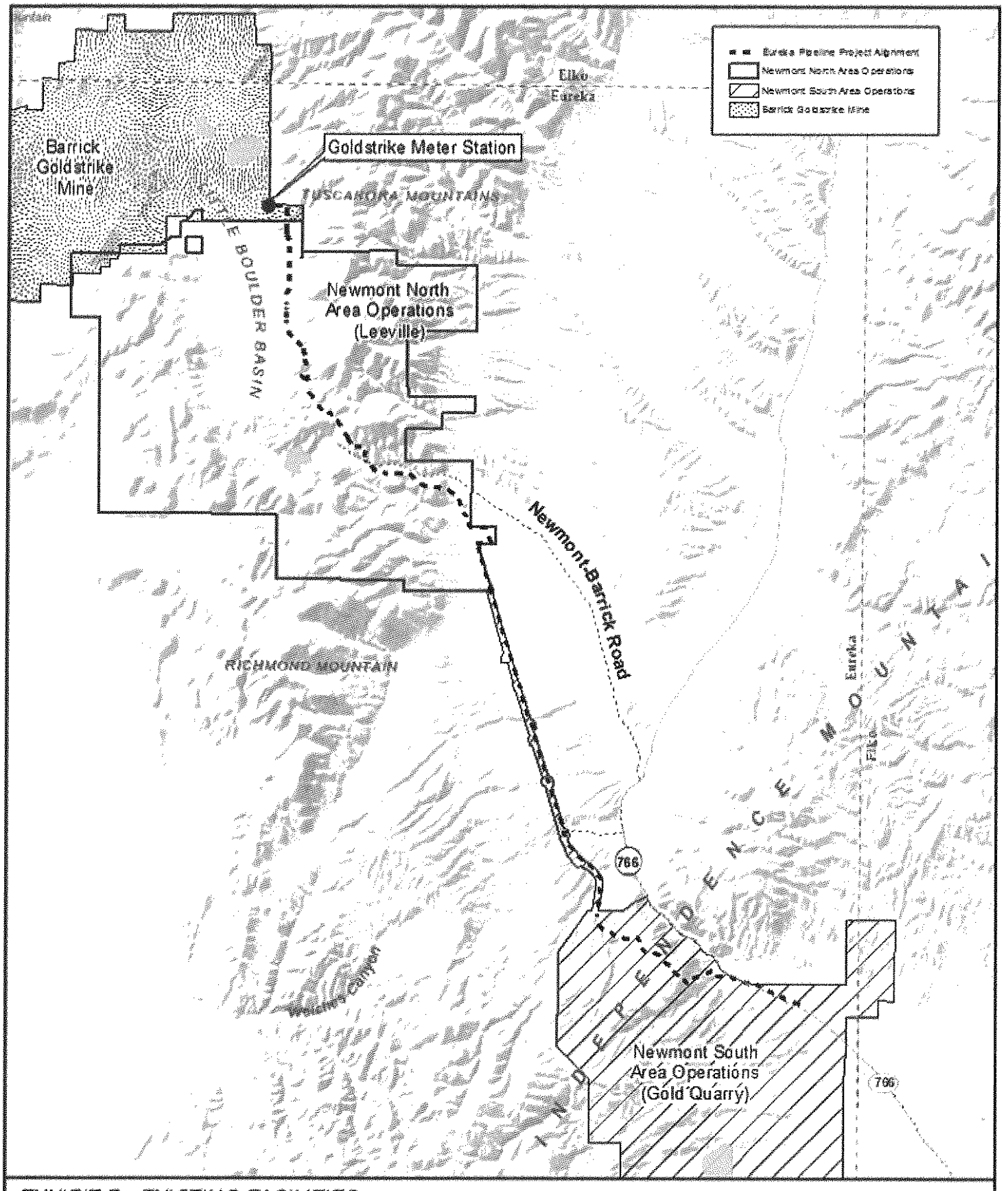


EXHIBIT B - EXISTING FACILITIES

NAC 703.423(1)(c)

EUREKA PIPELINE PROJECT

MARCH, 2014

NORTH

0 1 2

MILES

NOTES:
PIPELINE: PROSPECTOR PIPELINE
BACKGROUND: COPYRIGHT ©2013 ESRI, DELORME, NAVTEQ
SOURCES: ESRI, DELORME, USGS, NPS
SOURCES: ESRI, USGS, NOAA

EXHIBIT C

EUREKA PIPELINE PROJECT ALIGNMENT
AND
PROPOSED FACILITIES

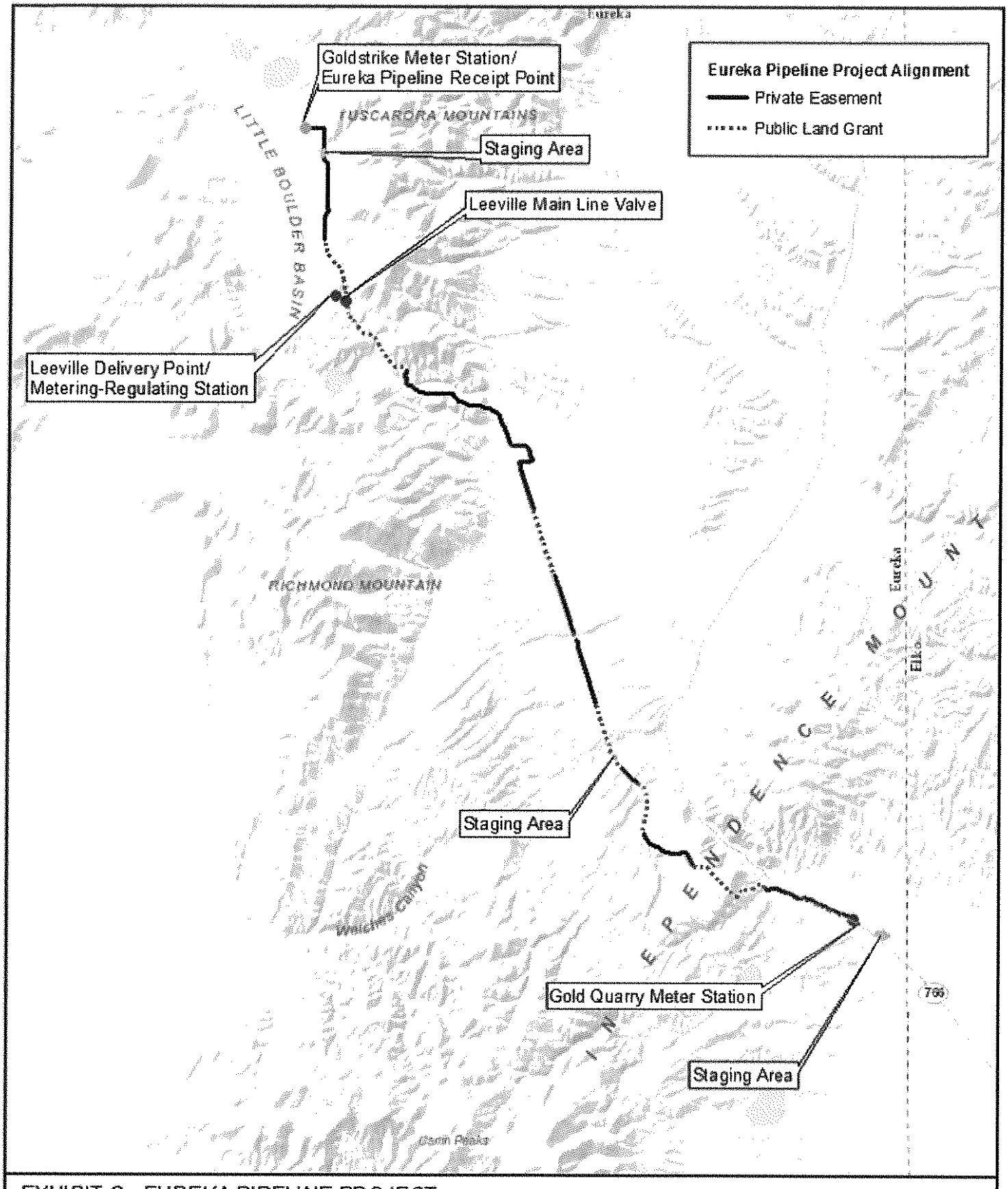


EXHIBIT C - EUREKA PIPELINE PROJECT
ALIGNMENT AND PROPOSED
FACILITIES
NAC 703.423(2)(c)
APRIL, 2014

NORTH

0 1 2
Miles

NOTES:
OWNERSHIP: BLM
BACKGROUND SOURCES:
ESRI, DELORME, USGS,
NPS
SOURCES: ESRI, USGS,
NOAA

EXHIBIT D

EUREKA PIPELINE PROJECT

SITE PLAN DRAWINGS

12" NATURAL GAS EUREKA PIPELINE
GOLDSTRIKE METER STATION/EUREKA PIPELINE RECEIPT POINT TO GOLD QUARRY METER STATION

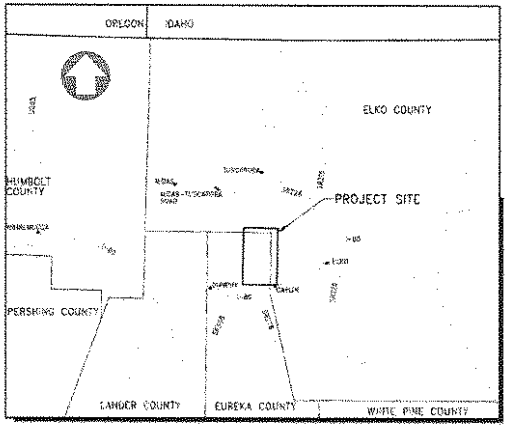
EUREKA COUNTY, NEVADA

OWNER/DEVELOPER

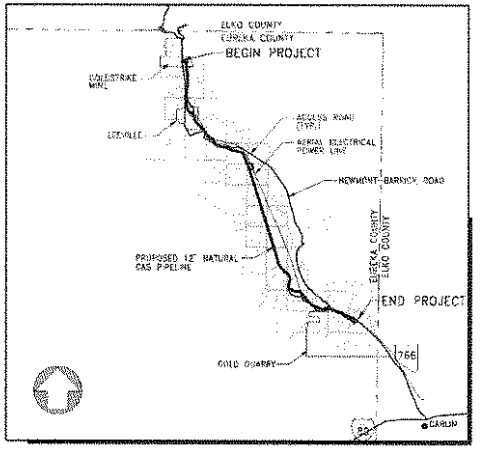
PROSPECTOR PIPELINE COMPANY
2981 GOLD CANAL DRIVE
RANCHO CORDOVA, CA
916-859-4700

DESIGN ENGINEER:

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
5440 Reno Corporate Drive Tel 775.823.4068
Reno, NV 89511 Fax 775.823.4066



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

SHEET INDEX

SHT No.	DWG ID	DRAWING DESCRIPTION
1	G-1	TITLE SHEET
2	G-2	NOTES, LEGEND & ABBREVIATIONS
3	G-3	STANDARDS AND SPECIFICATIONS
4	G-4	HYDROSTATIC TESTING DIAGRAM
5	G-5	INDEX SHEET
6	G-6	RECLAMATION PLAN
7	P-1	PLAN AND PROFILE SHEET - STA. 1300+00-1326+00
8	P-2	PLAN AND PROFILE SHEET - STA. 1326+00-1353+50
9	P-3	PLAN AND PROFILE SHEET - STA. 1353+50-1381+00
10	P-4	PLAN AND PROFILE SHEET - STA. 1381+00-1408+00
11	P-5	PLAN AND PROFILE SHEET - STA. 1408+00-1436+00
12	P-6	PLAN AND PROFILE SHEET - STA. 1436+00-1463+50
13	P-7	PLAN AND PROFILE SHEET - STA. 1463+50-1491+00
14	P-8	PLAN AND PROFILE SHEET - STA. 1491+00-1518+50
15	P-9	PLAN AND PROFILE SHEET - STA. 1518+50-1546+00
16	P-10	PLAN AND PROFILE SHEET - STA. 1546+00-1573+50
17	P-11	PLAN AND PROFILE SHEET - STA. 1573+50-1601+00
18	P-12	PLAN AND PROFILE SHEET - STA. 1601+00-1628+50
19	P-13	PLAN AND PROFILE SHEET - STA. 1628+50-1656+00
20	P-14	PLAN AND PROFILE SHEET - STA. 1656+00-1683+50
21	P-15	PLAN AND PROFILE SHEET - STA. 1683+50-1711+00
22	P-16	PLAN AND PROFILE SHEET - STA. 1711+00-1738+50
23	P-17	PLAN AND PROFILE SHEET - STA. 1738+00-1766+00
24	P-18	PLAN AND PROFILE SHEET - STA. 1766+00-1793+50
25	P-19	PLAN AND PROFILE SHEET - STA. 1793+50-1821+00
26	P-20	PLAN AND PROFILE SHEET - STA. 1821+00-1848+50
27	P-21	PLAN AND PROFILE SHEET - STA. 1848+50-1876+00
28	P-22	PLAN AND PROFILE SHEET - STA. 1876+00-1903+50
29	P-23	PLAN AND PROFILE SHEET - STA. 1903+50-1931+00
30	P-24	PLAN AND PROFILE SHEET - STA. 1931+00-1958+50
31	P-25	PLAN AND PROFILE SHEET - STA. 1958+50-1986+00
32	P-26	PLAN AND PROFILE SHEET - STA. 1986+00-2013+50
33	P-27	PLAN AND PROFILE SHEET - STA. 2013+50-2041+00
34	P-28	PLAN AND PROFILE SHEET - STA. 2041+00-2068+50
35	P-29	PLAN AND PROFILE SHEET - STA. 2068+50-2096+00
36	P-30	PLAN AND PROFILE SHEET - STA. 2096+00-2123+50
37	P-31	PLAN AND PROFILE SHEET - STA. 2123+50-2151+00
38	P-32	PLAN AND PROFILE SHEET - STA. 2151+00-2178+50
39	P-33	PLAN AND PROFILE SHEET - STA. 2178+50-2206+00
40	P-34	PLAN AND PROFILE SHEET - STA. 2206+00-2233+50
41	P-35	PLAN AND PROFILE SHEET - STA. 2233+50-2252+35.24
42	P-36	PLAN AND PROFILE SHEET - LEEVILLE TA
43	D-1	LEEVILLE MAINLINE VALVE
44	D-2	DETAILS
45	D-3	DETAILS
46	D-5	DETAILS
47	D-4	DETAILS

PRELIMINARY - NOT FOR CONSTRUCTION

WOOD RODGERS
DATE: 4/3/2014

PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Tel: 775.823.4068
Fax: 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
TITLE SHEET

PROJECT NO. 211.006
DRAWING G-1
SHT 1 OF 47

GENERAL NOTES

1. THIS PIPELINE SHALL BE INSTALLED UNDER TITLE 49 PART 192 CFR, CURRENT REVISION.

2. THE ALIGNMENT SHOWN ON THE DRAWINGS REPRESENTS THE CENTER OF THE TEMPORARY CONSTRUCTION RIGHT-OF-WAY AND MAY NOT NECESSARILY INDICATE THE CENTERLINE OF THE PROPOSED 12" NATURAL GAS PIPELINE. THE CONTRACTOR IS ADVISED THAT THE PIPELINE MAY FALL ANYWHERE WITHIN THIS RIGHT-OF-WAY. THE PERMANENT RIGHT-OF-WAY WILL BE DEFINED AS THE PIPELINE IS CONSTRUCTED AND WILL BE INDICATED ON THE RECORD DRAWINGS.

3. NO CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE EPP SHALL COMMENCE UNTIL ALL CONSTRUCTION PERSONNEL HAVE BEEN PROVIDED BLM APPROVED SENSITIVE RESOURCE TRAINING, AND THE CONTRACTOR HAS BEEN PROVIDED AND REVIEWED A LIST OF KNOWN (BUT NOT NECESSARILY ALL) OBLIGATIONS ASSOCIATED WITH CONSTRUCTION OF THE EUREKA PIPELINE PROJECT.

4. TEMPORARY CONSTRUCTION RIGHT-OF-WAY IS 100' WIDE EXCEPT ON SLOPES STEEPER THAN 2:1 WHERE IT WILL BE 125' WIDE.

5. TEMPORARY CONSTRUCTION RIGHT-OF-WAY FROM STATION 1839+81 TO STATION 1841+81 SHALL BE 40 FEET WIDE TO PROTECT SENSITIVE RESOURCES.

6. PPC SHALL EMPLOY A QUALIFIED CULTURAL RESOURCES MONITOR TO INSTALL TEMPORARY CONSTRUCTION FENCE TO MARK THE EXTENT OF THE REQUIRED 40 FOOT TEMPORARY CONSTRUCTION RIGHT-OF-WAY FROM STATION 1839+81 TO STATION 1841+81.

7. PPC SHALL EMPLOY A QUALIFIED CULTURAL RESOURCE MONITOR TO BE PRESENT DURING ALL SURFACE DISTURBING ACTIVITIES FROM STATION 1839+81 TO STATION 1841+81.

8. DURING EXCAVATION WITHIN PREVIOUSLY UNDISTURBED PORTIONS OF TERTIARY SEDIMENTS (TERTIARY CARLIN FORMATION), PPC SHALL EMPLOY A QUALIFIED PALEONTOLOGICAL MONITOR.

9. SHOULD ANY PREHISTORIC, HISTORIC REMAINS/ARTIFACTS OR PALEONTOLOGICAL RESOURCES BE DISCOVERED DURING CONSTRUCTION, WORK SHALL TEMPORARILY BE HALTED AT THE SPECIFIC SITE AND THE BUREAU OF LAND MANAGEMENT SHALL BE NOTIFIED IMMEDIATELY.

10. IF EPP CONSTRUCTION ACTIVITIES OVERLAP WITH MULE DEER MIGRATION LIMITED OPERATING PERIODS (LATE MARCH THROUGH MID JUNE, OR OCTOBER 15 THROUGH DECEMBER 31, CONSTRUCTION ACTIVITIES WITHIN MULE DEER RESTRICTION AREAS SHALL BE CONDUCTED IN ACCORDANCE WITH SPATIAL LIMITATIONS AS DETERMINED BY THE BLM.

11. THIS DRAWING SET IS BASED ON VARIOUS MAPPING SOURCES WHICH MAY NOT REFLECT ACCURATE FIELD CONDITIONS. TOPOGRAPHIC DATA IS FROM THE U.S. GEOLOGICAL SURVEY (USGS) 1/3-ARC SECOND NATIONAL ELEVATION DATASET, PUBLISHED IN 2009. PARCEL LINES IN EUREKA COUNTY ARE FROM GIS SHAPEFILES PROVIDED BY THE COUNTY. TOPOGRAPHIC INFORMATION HAS NOT BEEN FIELD VERIFIED AS THIS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

12. ALL EXISTING UTILITY INFORMATION AS SHOWN ON THESE DRAWINGS IS FROM SURFACE OBSERVATIONS USED IN CONJUNCTION WITH AVAILABLE RECORDS, REFERENCE MAPS, DRAWINGS, AND VERBAL STATEMENTS SUPPLIED BY UTILITY COMPANIES, AND MAY NOT BE WHOLLY ACCURATE OR RELIABLE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES WHICH MAY BE AFFECTED BY THE WORK TO OBTAIN ASSISTANCE IN THE LOCATION OF EXISTING FACILITIES. THE CONTRACTOR SHALL ALSO CALL 811 48 HOURS PRIOR TO BEGINNING WORK. ANY DAMAGE TO UTILITIES CAUSED BY OPERATION OF THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO PROSPECTOR PIPELINE COMPANY. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE REPAIR OF ANY IMPROVEMENTS (EXISTING OR PROPOSED) DAMAGED THROUGHOUT THE COURSE OF CONSTRUCTION. THERE SHALL BE NO DIRECT PAYMENT FOR THIS WORK UNLESS OTHERWISE INDICATED.

13. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OR THEIR REPRESENTATIVE OF DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THESE DRAWINGS AND THE CONDITIONS EXISTING IN THE FIELD. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY THE FIGURES BEFORE LAYING OUT THE WORK AND WILL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY. IF THE CONTRACTOR FAILS TO NOTIFY THE OWNER OR THEIR REPRESENTATIVE IN A TIMELY MANNER OF ANY APPARENT ERROR OR OMISSION ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING WORK INCORRECTLY DONE AT THE CONTRACTOR'S EXPENSE.

14. APPROXIMATE LOCATIONS OF CONTRACTOR STAGING AREAS ARE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL LIMIT STAGING TO THESE AREAS.

15. THE CONTRACTOR SHALL PURSUE THE WORK IN A CONTINUOUS AND DILIGENT MANNER, CONFORMING TO ALL THE PERTINENT SAFETY REGULATIONS, TO INSURE A TIMELY COMPLETION OF THE PROJECT.

16. THE CONTRACTOR SHALL COOPERATE WITH ANY OTHER CONTRACTORS OR UTILITY FORCES WORKING WITHIN THE CONSTRUCTION AREA.

17. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS REQUIRED TO CONSTRUCT THE IMPROVEMENTS AS SHOWN ON THE DRAWINGS, LISTED IN THE SPECIFICATIONS, AND AS REQUIRED BY THE OWNER.

18. THE CONTRACTOR SHALL OBTAIN COPIES OF THE APPROPRIATE SPECIFICATIONS FOR HIS USE. A COPY OF ALL SPECIFICATIONS SHALL BE AVAILABLE AT THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL COMPLY WITH THE STANDARDS AND SPECIFICATIONS (SEE SHEET G-3).

19. CONSTRUCTION ADMINISTRATION AND INSPECTION FOR THE ENTIRE PROJECT WILL BE BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR IS TO NOTIFY THE OWNER AT LEAST TWO BUSINESS DAYS BEFORE STARTING CONSTRUCTION.

20. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL AND STATE SAFETY REGULATIONS, AND SHALL MAINTAIN THE WORK AREA IN A SAFE CONDITION 24 HOURS PER DAY UNTIL THE PROJECT IS COMPLETE. WORKER SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR, NOT THE OWNER.

21. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A NEAT AND LEGIBLE DRAWING SET DENOTING THE ACTUAL HORIZONTAL AND VERTICAL LOCATION OF THE INSTALLED PIPELINE. DATA SHALL INCLUDE NORTHING, EASTING, AND ELEVATION OF THE TOP OF THE PIPE AT CENTERLINE FOR EACH WELD LOCATION AND ANY ANGLE POINTS, HORIZONTAL BENDS, ETC. DATA SHALL BE PROVIDED IN NEVADA STATE PLANE COORDINATES, EAST ZONE, NAD 83, AND ANY FIELD CHANGES THAT DEVIATE FROM THE APPROVED DESIGN. UPON ACCEPTANCE OF THE FACILITY, THE CONTRACTOR SHALL PRESENT THIS DRAWING SET, WHICH REFLECTS THE FINAL LOCATION OF THE PIPELINE, AND ALL FACILITIES AND FIELD CHANGES, TO THE OWNER OR THEIR REPRESENTATIVE.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD PROSPECTOR PIPELINE CO. AND THE DESIGN CONSULTANT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF PROSPECTOR PIPELINE CO. OR THE DESIGN CONSULTANT.

UNAUTHORIZED CHANGES & USES: THE DESIGN CONSULTANT PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

GENERAL NOTES CONTINUED

22. IN ADDITION TO SPECIFIC REQUIREMENTS INCLUDED IN THE CONSTRUCTION DOCUMENTS, CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND COMPLYING WITH ALL REQUIREMENTS CONTAINED IN THE FOLLOWING OWNER ACQUIRED REPORTS AND PERMITS:
    1. ENVIRONMENTAL ASSESSMENT DATED: FEBRUARY, 2014
    2. PLAN OF DEVELOPMENT DATED: MARCH, 2014
    3. FINDING OF NO SIGNIFICANT IMPACT FROM THE BUREAU OF LAND MANAGEMENT APRIL 3, 2014
    4. DECISION RECORD FROM THE BLM WITH AN APPROXIMATE DATE OF: TO BE DETERMINED
    5. RIGHT OF WAY GRANT FROM THE BLM WITH AN ANTICIPATED DATE OF: TO BE DETERMINED
    6. UTILITIES ENVIRONMENTAL PROTECTION ACT PERMIT FROM THE PUBLIC UTILITIES COMMISSION OF NEVADA WITH AN ANTICIPATED DATE OF: TO BE DETERMINED
    7. NDOT DISTRICT 3 ENCROACHMENT PERMIT

23. MINIMUM 40 FOOT SEPARATION BETWEEN PIPE TRENCH AND POWER POLE OR GUY WIRES.

ABBREVIATIONS

AB	AGGREGATE BASE
AP	ANGLE POINT
APPROX	APPROXIMATE
BC	BEGIN CURVE
C/L, CL	CENTER LINE
CONST	CONSTRUCT
DIA	DIAMETER
E	EAST
EC	END CURVE
ELEV	ELEVATION
EPP	EUREKA PIPELINE PROJECT
ERW	ELECTRIC RESISTANCE WELDED
EX	EXISTING
FBE	FUSION BONDED EPOXY
FG	FINISH GRADE
FL	FLOW LINE
FT	FEET
G	GENERAL
GB	GRADE BREAK
GV	GAS VALVE
HP	HIGH POINT
ID	INSIDE DIAMETER
LF LT	LINEAR FEET
MAX	MAXIMUM
MIN	MINIMUM
MM	MILE POST MARKER
N	NORTH
OD	OUTSIDE DIAMETER
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PM	PIPELINE MARKER
PP	PLAN AND PROFILE
PPC	PROSPECTOR PIPELINE COMPANY
PSIG	POUNDS PER SQUARE INCH GAUGE
R	RADIUS
R, RT	RIGHT
R.O.W.	RIGHT OF WAY
S	SOUTH
SHT	SHEET
SR	STATE ROUTE
STA	STATION
TYP	TYPICAL
TWS	TOP OF WATER SURFACE
UG	UNDERGROUND
W	WEST
WR	WOOD RODGERS, INC
WT	WALL THICKNESS

LEGEND

EXISTING DRAINAGE
EXISTING OVERHEAD ELECTRIC
EXISTING ACCESS ROAD
EXISTING RUBY PIPELINE R.O.W.
EXISTING COUNTY BOUNDARY
EXISTING PROPERTY BOUNDARY
EXISTING SECTION LINE
EXISTING CONTOUR
℄ OF 12" NATURAL GAS PIPELINE R.O.W.
TEMPORARY R.O.W.
CONSTRUCTION FENCING
SHEET BORDER
SLOPE INDICATOR
PROPOSED FINISH GRADE
MAIN LINE VALVE (MLV)
MILEPOST MARKER (SEE DETAIL 6/D-1)
PIPELINE MARKER (SEE DETAIL 5/D-1)
CATHODIC PROTECTION STATION (BY OTHERS)
DETAIL OR SECTION NUMBER
SHEET NUMBER WHERE DETAIL IS DRAWN
STAGING AREA

NOTE:
LOCATIONS OF ALL EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND PROTECT AS NECESSARY.

811
Know what's below.
Call before you dig.

WOOD RODGERS
DATE: 4/3/2014

PUC NEVADA SUBMITTAL 4/3/2014

DATE: APRIL 2014
SCALE: AS SHOWN
DRAWN BY: LCS
DESIGNED BY: WJC
CHECKED BY: TMD

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
5440 Reno Corporate Drive Tel 775.823.4068
Reno, NV 89511 Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
NOTES, LEGEND & ABBREVIATIONS

PROJECT NO. 2811.008
DRAWING G-2
SHT 2 OF 47

STANDARDS AND SPECIFICATIONS

THE FOLLOWING STANDARDS AND SPECIFICATIONS SHALL APPLY:
- TITLE 49 CFR PART 192 TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE; MINIMUM FEDERAL SAFETY STANDARDS, CURRENT REVISION
- API-5L/ASD 5182 – SPECIFICATION FOR LINE PIPE, CURRENT EDITION.
- API-60 – SPECIFICATION FOR PIPELINE VALVES (GATE, PLUG, BALL AND CHECK VALVES)
- API 1104 – WELDING OF PIPELINES AND RELATED FACILITIES, CURRENT EDITION.
- ASME B31.8 – PIPE FLANGES AND FLANGED FITTINGS, CURRENT EDITION.
- ASME B18.5 – GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, CURRENT EDITION.
- PROSPECTOR PIPELINE COMPANY (PPC) OPERATIONS AND MAINTENANCE MANUAL, CURRENT REVISION.

MATERIALS
1. PIPE
   API-5L-X52, ELECTRIC RESISTANCE WELDED (ERW), DOUBLE RANDOM LENGTH (DRL), 12.75" O.D., 0.375" W.T., 12.00" I.D., 49.56 LBS/FT. ROLLED BY CALIFORNIA STEEL INDUSTRIES (CSI), FONTANA, CALIFORNIA.

   API-5L-X52, ELECTRIC RESISTANCE WELDED (ERW), DOUBLE RANDOM LENGTH (DRL), 4.50" O.D., 0.237" W.T., 4.05" I.D., 10.80 LBS/FT. ROLLED BY CALIFORNIA STEEL INDUSTRIES (CSI), FONTANA, CALIFORNIA.

2. COATING
   A. FACTORY APPLIED VALSPAR PIPECLAD 2000, 16-20 MILS THICK, APPLIED BY BREDERO SHAW, FONTANA, CALIFORNIA.

   B. FIELD COAT WELD JOINTS WITH TAR OR POWERCRETE 2 COATING (MAX PIPELINE OPERATING TEMP.=120°F), 20 MILS THICK.

   C. 3,200 LINEAL FEET OF PIPE DESIGNATED FOR THE HORIZONTAL DIRECTIONAL DRILLING WILL BE FACTORY COATED WITH 40 MIL POWERCRETE DD.

   D. WELD JOINTS ON HORIZONTAL DIRECTIONAL DRILLING (HDD) PIPE BACK STRING SHALL BE FIELD COATED WITH POWERCRETE DD (MAX PIPELINE OPERATING TEMPERATURE=130°F), 40 MILS THICK, AFTER RADIOGRAPHIC INSPECTION

3. INCIDENTAL ITEMS
   THE CONTRACTOR SHALL FURNISH ALL INCIDENTAL ITEMS REQUIRED TO COMPLETE THE WORK THAT ARE NOT SPECIFICALLY REFERRED TO HEREIN.

DESIGN
PURSUANT TO CFR TITLE 49, PART 192 TRANSPORTATION, SUBPART C. 192.105 – "PIPE DESIGN", THE PIPE STRING USED FOR THIS PROJECT IS DESIGNED AS FOLLOWS:

CLASS LOCATION: 2 (SEE NOTES BELOW)

A. PIPE

12" MAIN LINE
- SPECIFICATION/GRADE: API 5L, X-52, ERW
- SMYS (PSI) (S): 52,000
- NOMINAL OUTSIDE DIAMETER (IN) (Do): 12.75
- NOMINAL WALL THICKNESS (IN) (t): 0.375
- DESIGN FACTOR (F): 0.6
- LONGITUDINAL JOINT FACTOR (E): 1.00
- TEMPERATURE DERATING FACTOR (T): 1.00
- DESIGN PRESSURE: CLASS 2 = 1,855 PSIG (DF = 0.6)
- OVERALL PIPE STRING DESIGN PRESSURE: 1,440 PSIG (BASED ON MAOP = 1,440 PSIG)

4" LATERAL LATERAL
- SPECIFICATION/GRADE: API 5L, X-52, ERW
- SMYS (PSI) (S): 52,000
- NOMINAL OUTSIDE DIAMETER (IN) (Do): 4.50
- NOMINAL WALL THICKNESS (IN) (t): 0.262
- DESIGN FACTOR (F): 0.6
- LONGITUDINAL JOINT FACTOR (E): 1.00
- TEMPERATURE DERATING FACTOR (T): 1.00
- DESIGN PRESSURE: CLASS 2 = 1,855 PSIG (DF = 0.6)
- OVERALL PIPE STRING DESIGN PRESSURE: 1,440 PSIG (BASED ON MAOP = 1,440 PSIG)

B. MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP): 1,440 PSIG

SUBSTANTIATED BY A MINIMUM TEST PRESSURE OF: 2,160 PSIG (CLASS 3 RATING)

HOOP STRESS (PIPE), AS A PERCENTAGE OF SMYS:
- AT MAOP: 42%
- AT TEST PRESSURE: 60% (MAX): 71% (MIN)

SUPPORTING CALCULATIONS:

DESIGN FORMULA FOR PIPE:

$$P = (2S/Do) \times t \times F \times T$$

WHERE:
- P=DESIGN PRESSURE, POUNDS PER SQUARE INCH GAUGE
- S=YIELD STRENGTH, POUNDS PER SQUARE INCH (192.107) (SMYS)
- Do=NOMINAL OUTSIDE DIAMETER OF PIPE, INCHES
- F=DESIGN FACTOR (192.111)
- E=LONGITUDINAL JOINT FACTOR (192.113)
- T=TEMPERATURE DERATING FACTOR (192.115)

MAOP (SEE 49 CFR 192.619)

HOOP STRESS, BARLOW FORMULA:

$$H = PDo/2t$$

HOOP STRESS, AS A PERCENTAGE OF SMYS:

$$H (\%SMYS) = (P/Do/2t) \times (100/S)$$

DEPTH OF COVER
REGULATIONS REQUIRE THE PIPE TO BE A MINIMUM OF 36 INCHES BELOW GRADE. IN CERTAIN AREAS SUCH AS ROAD CROSSINGS AND SPECIFIED DRAINAGE CROSSINGS, THE PIPE WILL BE BURIED DEEPER IN ORDER TO PROVIDE ADDITIONAL PROTECTION FOR THE PIPE. AGGRESSIVE CHANGES IN TOPOGRAPHY MAY REQUIRE SUBSTANTIAL BENDING OF THE PIPE IN ORDER TO ACCOMMODATE THE TOPOGRAPHY.

LOCATIONS REQUIRING ADDITIONAL BURIAL DEPTH HAVE BEEN TENTATIVELY SHOWN ON THE DRAWINGS. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE OWNER OR ITS REPRESENTATIVE.

PIPELINE AND FACILITIES WELDING
ALL WELDING PERFORMED ON THE EUREKA PIPELINE PROJECT (EPPL) WILL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, BY WELDER(S) POSSESSING A CURRENT CERTIFICATE OF TESTING BY AN INDEPENDENT, APPROVED TEST FACILITY OR EQUIVALENT. ALL WELDER QUALIFICATIONS AND CERTIFICATIONS MAY BE REVIEWED FOR APPROVAL BY PUC ENGINEERING SPECIALISTS PRIOR TO CONSTRUCTION.

NON-DESTRUCTIVE TESTING
100% OF ALL PIPELINE WELDS, TIE-IN WELDS, AND FACILITY WELDS WILL BE RADIOGRAPHICALLY INSPECTED PURSUANT TO API 1104. FAILED WELDS WILL BE CUT-OUT AND RE-WELDED PER THOSE STANDARDS, AND RADIOGRAPHICALLY INSPECTED FOR ACCEPTANCE. PERSONS PERFORMING RADIOGRAPHIC INSPECTION WILL LIKEWISE POSSESS CURRENT CERTIFICATION OR EQUIVALENT, AND WILL BE SUBJECT TO APPROVAL BY PUC ENGINEERING SPECIALISTS. FOLLOWING PLACEMENT OF PIPE INTO TRENCH, EACH WELD LOCATION SHALL BE SURVEYED (SEE GENERAL NOTE NO. 21).

CATHODIC PROTECTION AND AC MITIGATION
CATHODIC PROTECTION (CP) AND AC MITIGATION DESIGN SHALL BE CONDUCTED BY A REGISTERED PROFESSIONAL CORROSION ENGINEER (PE) AND NACE INTERNATIONAL CERTIFIED CP SPECIALIST.

THE CP AND AC MITIGATION SYSTEMS CAN BE INSTALLED SEPARATELY BY THE CP CONTRACTOR OR IN CONJUNCTION WITH THE PIPELINE CONSTRUCTION CONTRACTOR.

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WOOD RODGERS

DATE: 4/3/2014

PUC NEVADA SUBMITTAL 4/3/2014

NO.	DESCRIPTION	DATE	BY

DATE: APRIL 2014
SCALE: AS SHOWN
DESIGNED BY: SCB
DRAWN BY: JCB
CHECKED BY: AJC

WOOD RODGERS
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Reno, NV 89511 Fax 775.853.4068

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
STANDARDS & SPECIFICATIONS

PROJECT NO. 2811.008
DRAWING G-3
SHT 3 OF 47

HYDROSTATIC TESTING

A. THE PIPE SHALL BE HYDROSTATICALLY TESTED TO A MINIMUM OF 2,160 PSIG (71% OF THE SMYS OF THE PIPE MATERIAL) AND A MAXIMUM OF 2,736 PSIG (89% OF THE SMYS OF THE PIPE MATERIAL) FOR A MINIMUM OF 8 HOURS, PURSUANT TO PPCO'S STANDARD SPECIFICATIONS. THE TEST PRESSURE AT ANY POINT WITHIN THE TEST SECTION SHALL NOT BE GREATER THAN 90% SMYS.

B. THE CONTRACTOR SHALL PREPARE A HYDROSTATIC TESTING PLAN AND SUBMIT FOR APPROVAL TO THE OWNER. THE PLAN SHALL USE ACTUAL AS-BUILT ELEVATIONS OF THE PIPELINE AT THE CRITICAL POINTS ON THE PROFILE TO ENSURE THE LIMITATIONS OF THE MAXIMUM AND MINIMUM TEST PRESSURES ARE MET. THE PLAN SHALL INCLUDE TEST LOCATIONS, DESCRIPTION OF THE TEST APPARATUS, AND ANY NECESSARY ANCILLARY EQUIPMENT OR PROCEDURES TO ENSURE PROTECTION OF PERSONNEL AND THE PIPELINE FROM FORESEEABLE CIRCUMSTANCES SUCH AS A PRESSURE REVERSAL DUE TO A FIPELINE RUPTURE.

C. ALL TESTING EQUIPMENT AND APPARATUS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

D. A TEMPERATURE COMPENSATED DEADWEIGHT TESTER (CERTIFIED WITHIN THE LAST 12 CALENDAR MONTHS) AND RECORDING CHART SHALL BE ATTACHED TO THE PIPE STRING. ORIGINAL CHARTS SHALL BE SUBMITTED TO PROSPECTOR PIPELINE COMPANY (PPC) AS PART OF THE PRESSURE TESTING REPORTING REQUIRED.

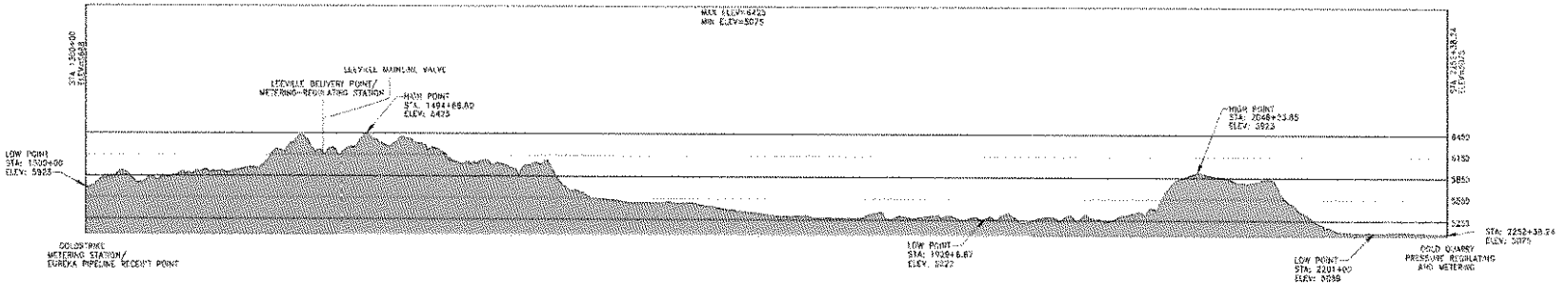
E. THE PIPE SHALL BE FILLED WITH CLEAN WATER OBTAINED BY THE CONTRACTOR.

F. THE CONTRACTOR IS CAUTIONED THAT DURING PERIODS OF COLD WEATHER EXPOSED PIPING IS SUBJECT TO FREEZING. PROCEDURES SHOULD BE IN PLACE TO ENSURE THE PIPELINE, TESTING APPARATUS AND ANCILLARY EQUIPMENT ARE PROTECTED FROM FREEZING AND MAINTAINED IN AN OPERABLE CONDITION AT ALL TIMES

G. ONCE THE PIPELINE HAS BEEN SUCCESSFULLY TESTED, THE PIPELINE SHALL BE DEWATERED USING COMPRESSED AIR AND PIGS.

H. JOINING GIRTH WELDS WILL BE INSPECTED, X-RAYED, AND SURVEYED PRIOR TO TAPING AND BACKFILL.

I. ADDITIONAL PIGGING WILL BE DONE TO DRY THE ENTIRE LINE AND A FINAL GAUGING PIG RUN SHALL BE COMPLETED SUCCESSFULLY IN PREPARATION FOR INITIAL INTRODUCTION OF PRODUCT TO THE PIPELINE. IN THE EVENT THE GAUGING PIG INDICATES 5 OR MORE PROBLEM AREAS, THE CONTRACTOR MUST LOCATE AND REPAIR ANY DEFICIENT AREAS. THIS WORK WILL NOT BE CONSIDERED COMPLETE UNTIL THE GAUGING PIG HAS A SUCCESSFUL RUN THROUGH THE ENTIRE PIPELINE.



NOTE:
A SEPERATE HYDROSTATIC TEST IS REQUIRED FROM COLD QUARRY METERING STATION TO TIE-IN POINT ON THE CARLIN PIPELINE.

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DATE: 4/3/2014

PUC NEVADA SUBMITTAL 4/3/2014

NO	DESCRIPTION	BY

DATE: APRIL, 2014
DESIGNED BY: W.M.C.
DRAWN BY: S.A.G.S.
CHECKED BY: W.M.C.

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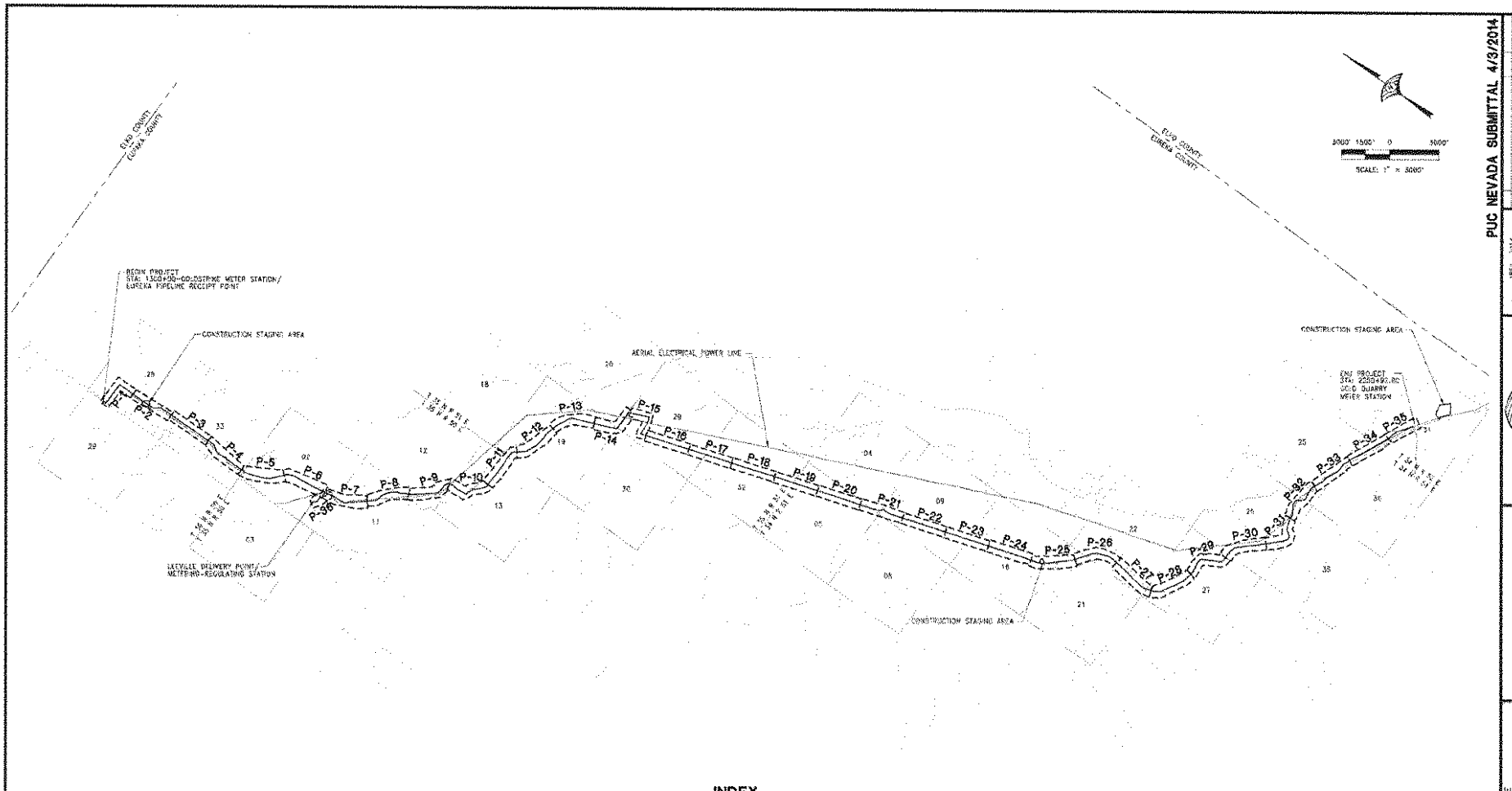
PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
HYDROSTATIC TESTING DIAGRAM

PROJECT NO.
2611.008
DRAWING
G-4
SHT 4 OF 47



INDEX

1"=3000'

HORIZONTAL CONTROL

NEVADA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983, AS DETERMINED USING POST-PROCESSED STATIC GPS OBSERVATIONS OF ON-SITE CONTROL CONSTRAINED AND ADJUSTED TO TEN (10) CORS STATIONS IN THE SURROUNDING AREA, AND VERIFIED WITH THE OPUS POSITIONS OF THE SAME OBSERVATIONS. THE COORDINATE, DISTANCES AND STATIONING SHOWN HEREON ARE STATE PLANE GRID. THE AREA COMBINED FACTOR WAS DETERMINED BY AN AVERAGE OF THE OPUS RESULTS OF CONTROL POINTS 100-102, AND IS TAKEN AS 1.00032799R. THIS FACTOR MUST BE APPLIED TO DETERMINE A CLOSE APPROXIMATION OF GROUND DISTANCES AND PIPE LENGTHS FROM THE VALUES PUBLISHED HEREON.

WOOD RODGERS

DATE: 4/3/2014

PUC NEVADA SUBMITTAL 4/3/2014

DATE: APRIL 2014
SCALE: 1"=3000'
DRAWN BY: LCS
DESIGNED BY: WJC
CHECKED BY: WJC

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PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
INDEX SHEET

PROJECT NO. 2811.008
DRAWING G-5
SHT 5 OF 47

NOTES

THE CONSTRUCTION AREA FOR THIS PROJECT IS LIMITED. THE CONTRACTOR SHALL EXERCISE THE UTMOST CARE TO LIMIT CONSTRUCTION DISTURBANCE TO WITHIN THE TEMPORARY ROW. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONFINING ALL CONSTRUCTION ACTIVITY TO WITHIN THESE LIMITS.

CONSTRUCTION CONTRACTOR SHALL LEAVE ALL ORGANIC LITTER OR DEBRIS DISTRIBUTED ON THE SURFACE OF THE BACKFILLED TRENCH AND TEMPORARY CONSTRUCTION ROW IN CURRENTLY UNCULTURED AREAS. ORGANIC LITTER OR DEBRIS SHALL NOT BE LEFT ON THE SURFACE IN PILES.

IN AREAS IDENTIFIED FOR SEEDING, CONSTRUCTION CONTRACTOR SHALL PREPARE THE SEEDBED TO CONSIST OF TRENCH BACKFILL WITH SURFACE SOILS BACK-FILLED LAST. FINAL GRADE SOILS SHALL BE WORKED TO CREATE A DE-COMPACTED ROUGHENED SURFACE TO FACILITATE SEEDING, COLLECTION OF PRECIPITATION AND PERCOLATION.

RECLAMATION CONTRACTOR SHALL SEED ALL DISTURBANCE SURFACES IDENTIFIED FOR SEEDING UTILIZING A DIRECT SEEDING METHOD (RANGELAND DRILL) UNLESS SLOPES EXCEED 15% AND/OR THE SURFACE IS TOO ROCKY.

RECLAMATION CONTRACTOR SHALL USE BROADCAST SEED APPLICATION IN AREAS WHERE TERRAIN LIMITS THE USE OF DIRECT SEEDING.

RECLAMATION CONTRACTOR SHALL COMPLETE BROADCAST SEEDING APPLICATION USING A HAND-HELD OR ALL-TERRAIN VEHICLE MOUNTED CYCLONE TYPE SEEDER.

BROADCAST SEED APPLICATION SHALL NOT OCCUR UNDER CONDITIONS THAT WOULD ALLOW THE SEED TO BECOME WIND-BORNE.

BROADCAST SEED APPLICATION RATE SHALL BE TWO TIMES (2X) THE DIRECT SEEDING APPLICATION RATE.

RECLAMATION CONTRACTOR SHALL SIMULTANEOUSLY OR IMMEDIATELY FOLLOWING BROADCAST SEED APPLICATION, LIGHTLY DRAG THE SEEDED AREAS WITH A MEDIUM WEIGHT CHAIN TO ASSURE SEED PLACEMENT AT A DEPTH OF 1/4 TO 1 1/2 INCH.

NO MORE AREA SHALL BE BROADCAST SEEDED THAN CAN BE DRAGGED IN THAT SAME DAY.

CONTRACTOR SHALL COMPLETE STABILIZATION OF REVEGETATION IN ACCORDANCE WITH SPECIAL INSTRUCTIONS TO BE DEVELOPED IN CONSULTATION WITH NEWMONT.

SEED MIX

TABLE BELOW PRESENTS THE SEED MIX (POUNDS PER ACRE) PROVIDED BY THE BLM TUSCARORA FIELD OFFICE.

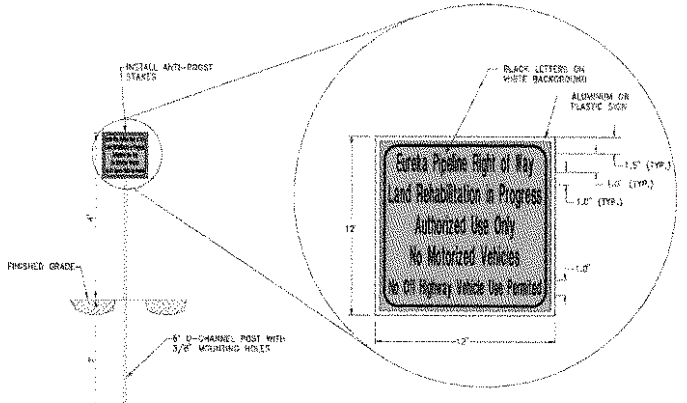
EUREKA PIPELINE PROJECT
REVEGETATION SEED MIX

Species		Drilled Seeding Rate Pounds Pure Live Seed per Acre
Common Name	Scientific Name	
Bluebunch wheatgrass	Agropyron spicatum	2
Western wheatgrass	Agropyron smithii	2
Great basin wildrye	Elymus cinereus	2
Small burnet	Sanguisorba minor	2
Saskatoon serviceberry	Amelanchier alnifolia	1
Treebush	Atriplex canescens	1
Intermediate bunchgrass	Pseudoroegneria intermedia	1.5
Crested wheatgrass	Agropyron cristatum	1.5
Sandberg bluegrass	Poa sandbergii	1
Wyoming Big Sagebrush	Artemisia tridentata wyomingensis	0.1
TOTAL		15.1

1 TO BE BROADCAST SEEDED ON TOP OF DIRECT SEEDING APPLICATION. SEE NOTE 2 BELOW.

NOTES:

1. SPECIES MAY BE SUBSTITUTED DUE TO UNAVAILABILITY OR FUTURE KNOWLEDGE REGARDING BETTER CULTIVARS OR SIMILAR SPECIES FOR THE SITE(S). REQUESTED SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE PROJECT ENVIRONMENTAL SPECIALIST.
2. AERIAL/GROUND BROADCAST-SEEDED OVER THE DRILL SEEDING AREA AFTER DRILL-SEEDING OPERATIONS.



NOTES:

1. SIGN SPACING SHALL BE 1,000 FT MAX. LINE-OF-SIGHT BETWEEN MARKERS SHALL BE MAINTAINED. WHERE MAY REDUCE MARKER SPACING OVER HILLS IN STEEP TERRAIN.

1 R-1 REHABILITATION AREA SIGN N.T.S.

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DATE: 4/3/2014

NO.	DESCRIPTION	DATE	APP'D
1	REVISED STRATEGY	5/1/14	DWD
2	ADDENDUM	7/15/14	DWD

DRAWN BY: MJM | DESIGNED BY: MJM | CHECKED BY: MJM | SCALE: AS SHOWN | DATE: APRIL 2014

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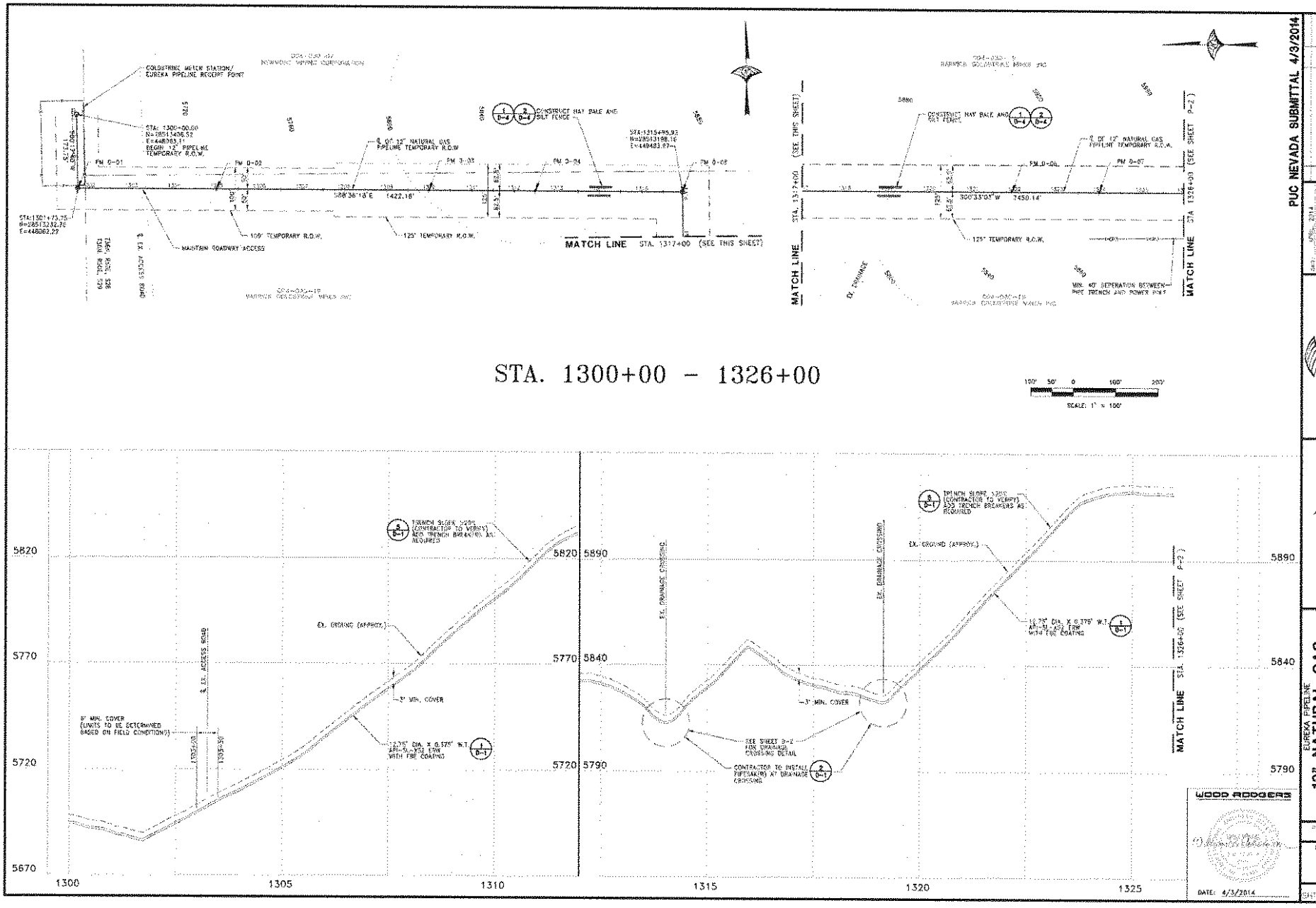
PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
RECLAMATION PLAN NOTES

PROJECT NO. 2811.006

DRAWING R-1

SHT 6 OF 47



STA. 1300+00 - 1326+00
MATCH LINE STA. 1317+00 (SEE THIS SHEET)
MATCH LINE STA. 1326+00 (SEE SHEET P-2)
SCALE: 1" = 100'
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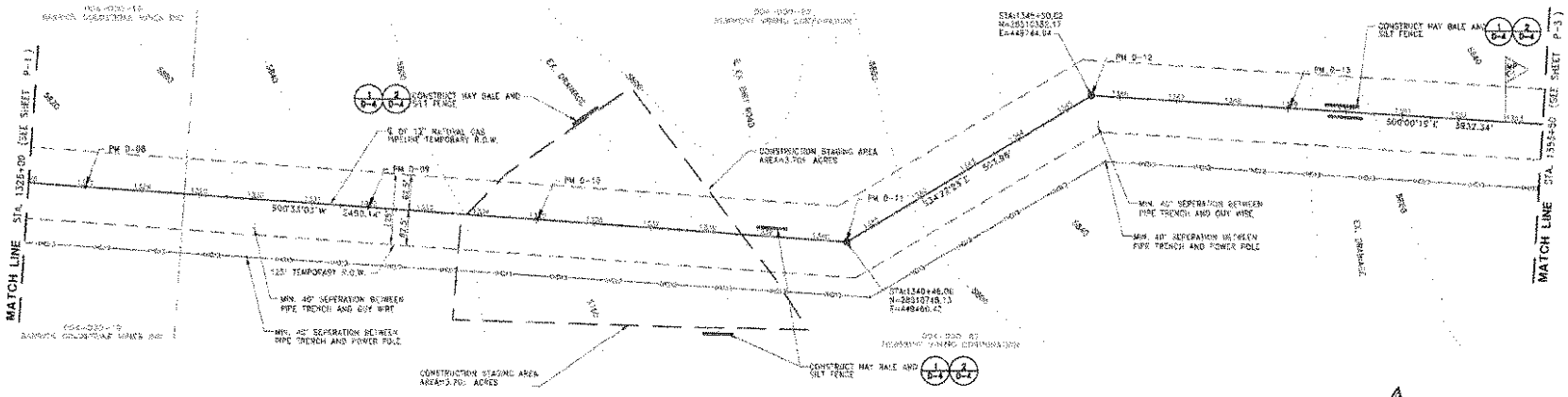
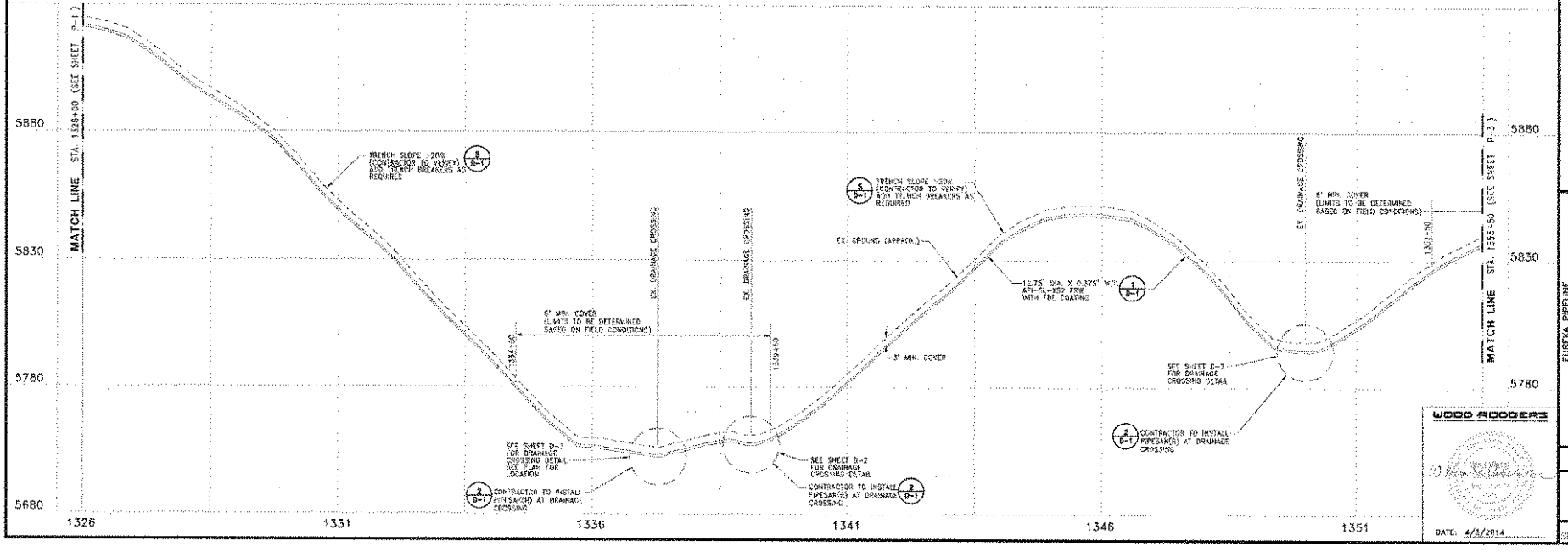
WOOD RODGERS
PROSPECTOR PIPELINE COMPANY
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET
PROJECT NO. 2811.008
DRAWING P-1
SHT 7 OF 47
DATE: 4/3/2014



STA. 1326+00 - 1353+50

SCALE: 1" = 100'



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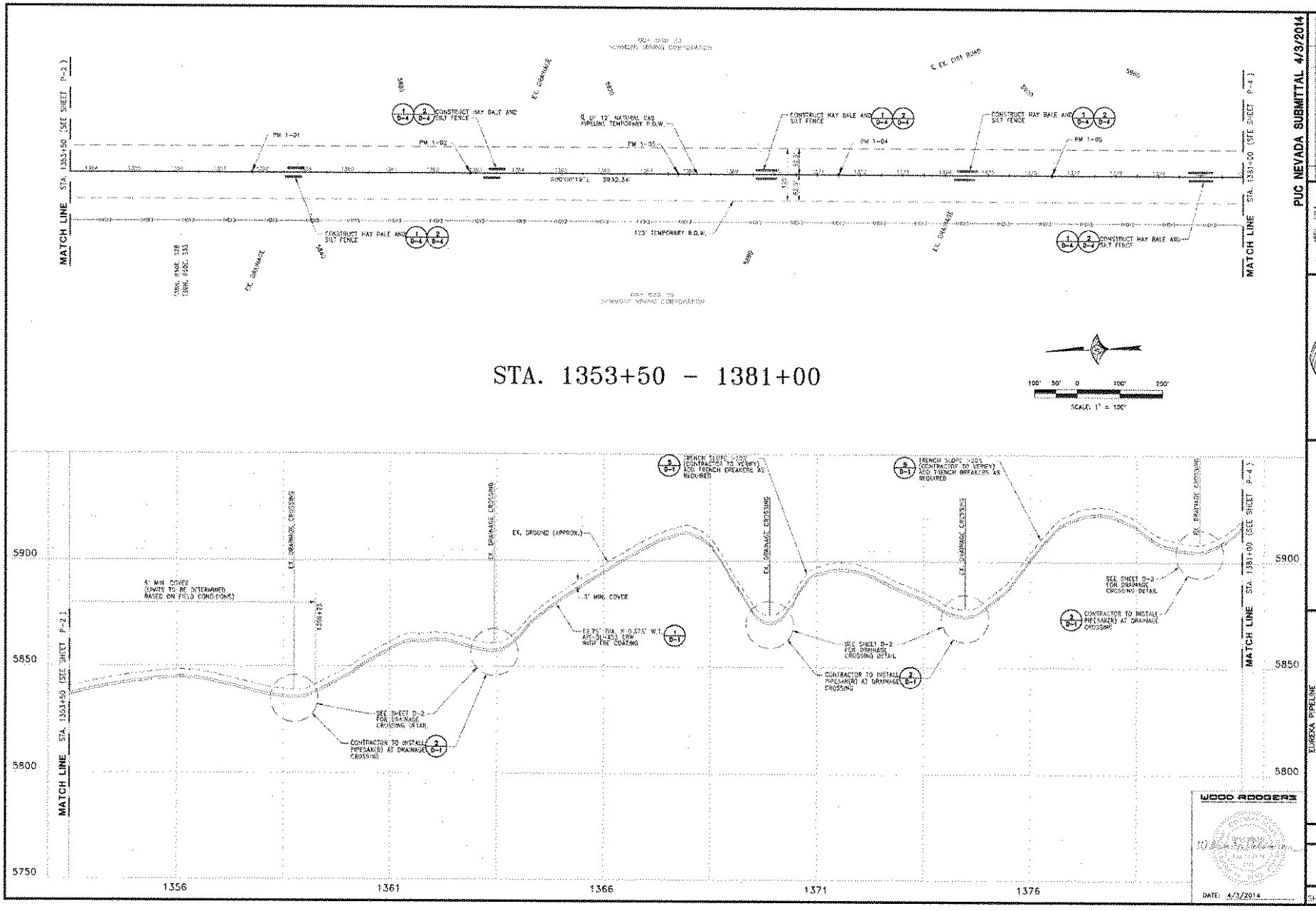
PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-2
SHT 8 OF 47

DATE: 4/3/2014



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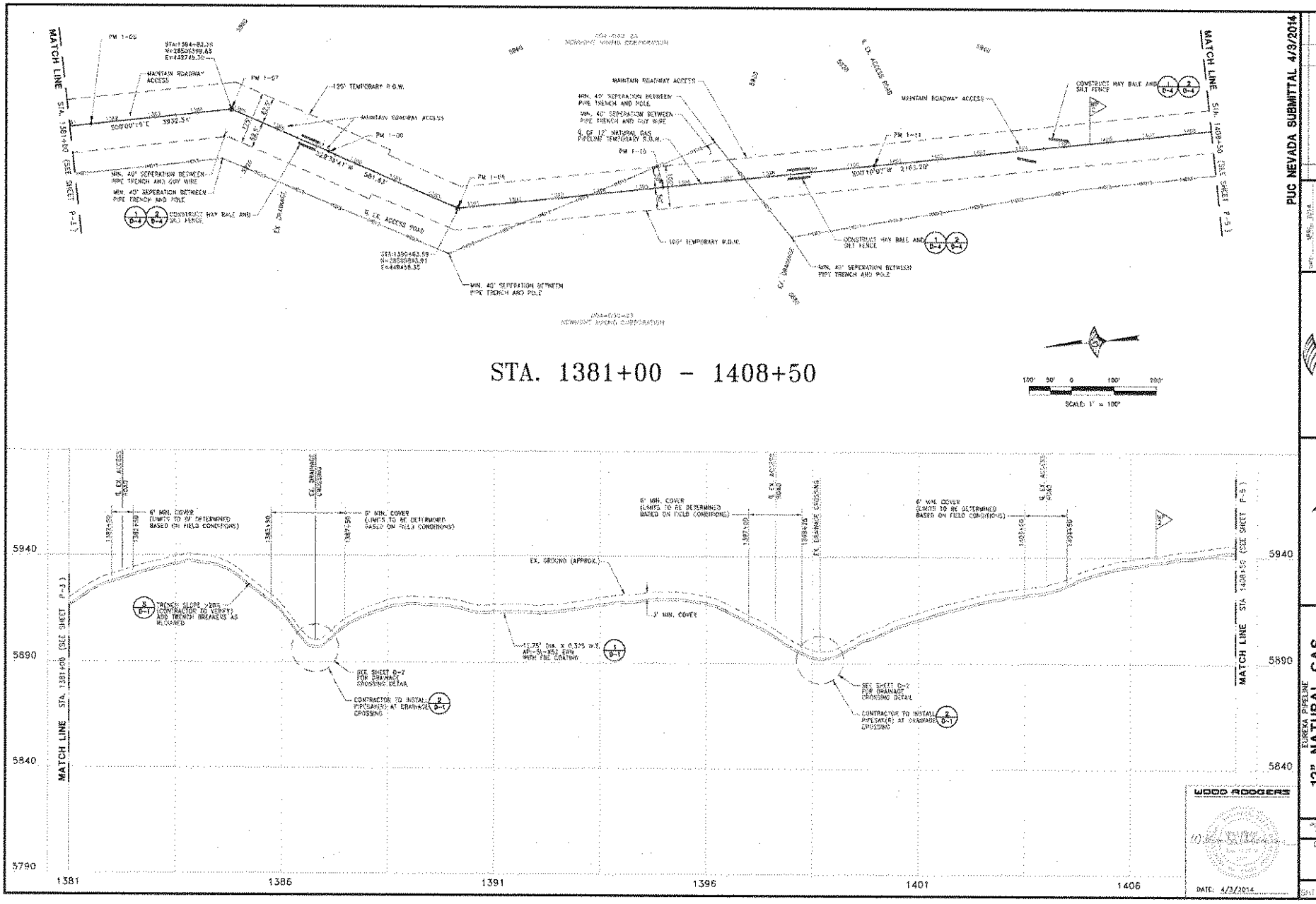
PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008

DRAWING P-3

SHT 9 OF 47



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EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2011.008
DRAWING P-4
SHT 10 OF 47

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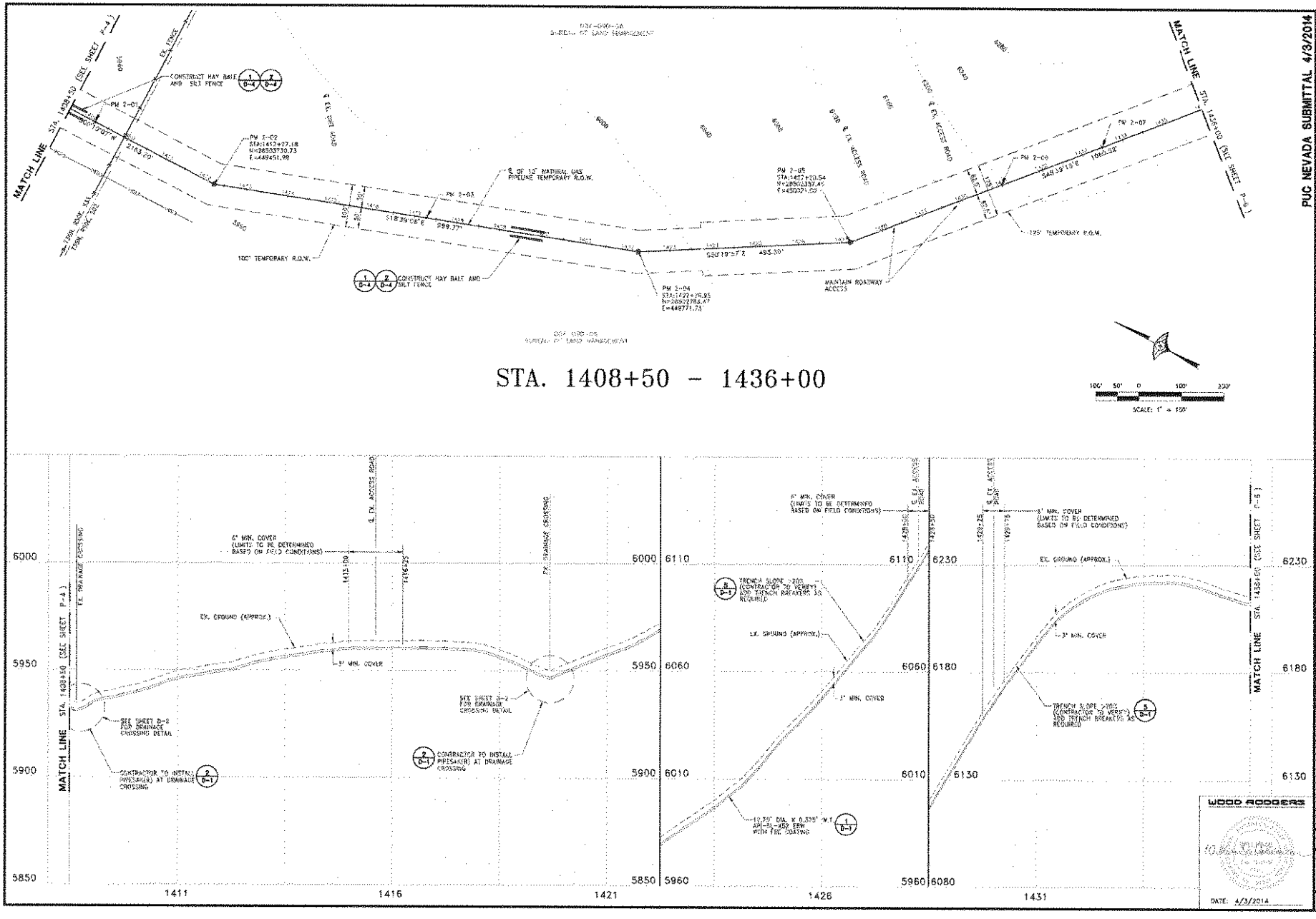
DATE: 4/3/2014



STA. 1408+50 - 1436+00

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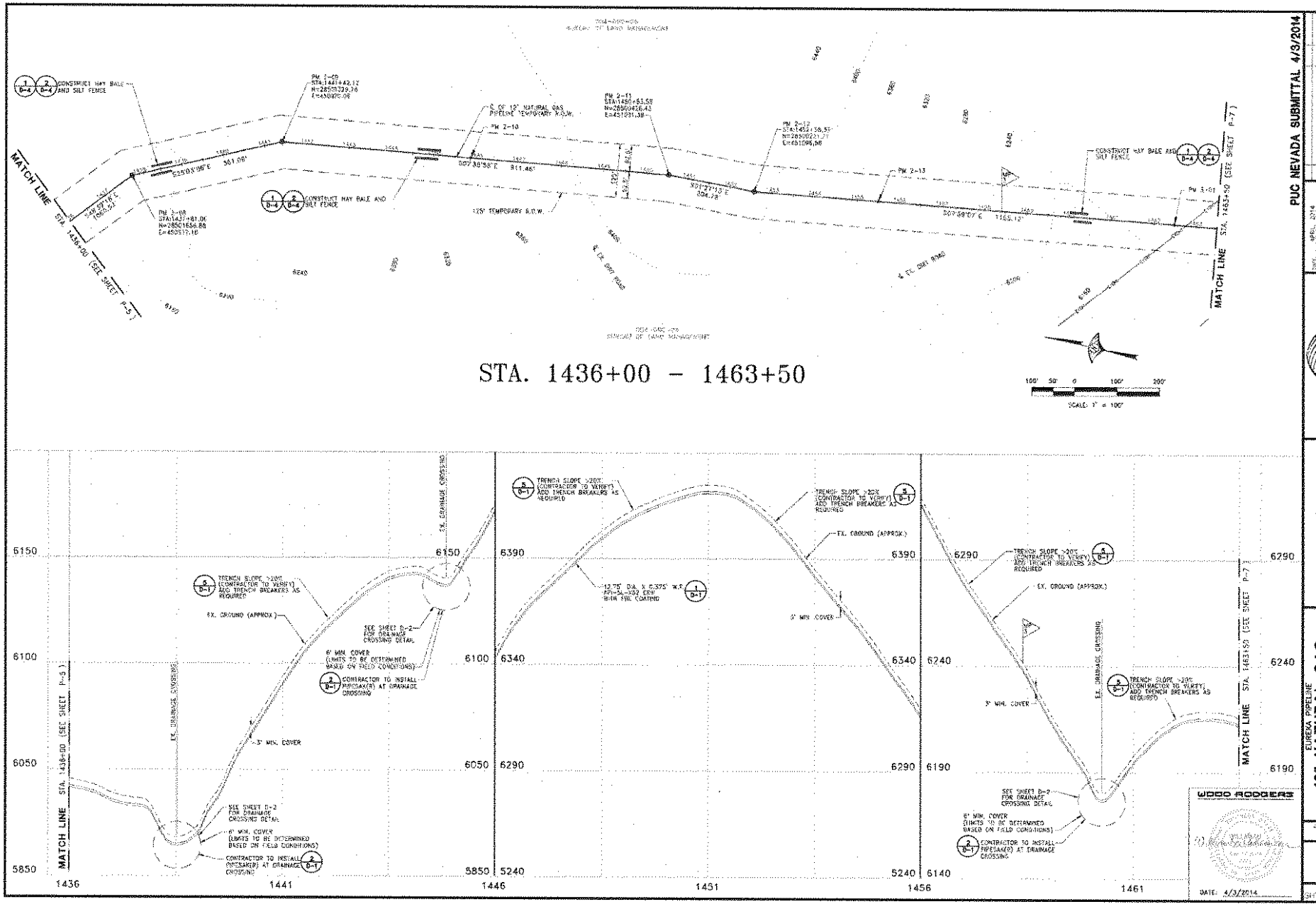
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-5
SHT 11 OF 47

WOOD RODGERS
DATE: 4/3/2014



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PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

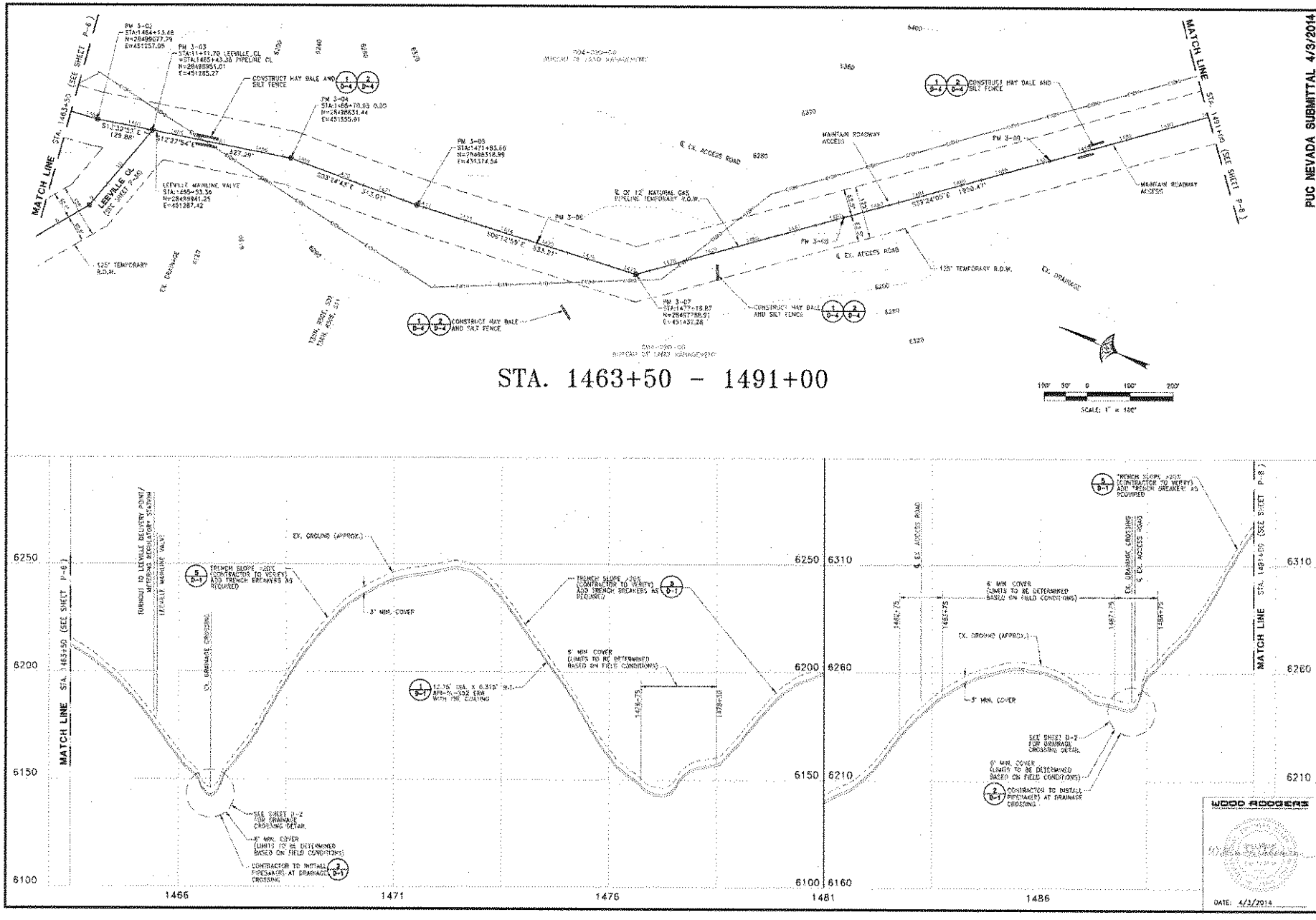
PROJECT NO. 2811.008

DRAWING P-6

SHT 12 OF 47

WOOD RODGERS

DATE: 4/3/2014



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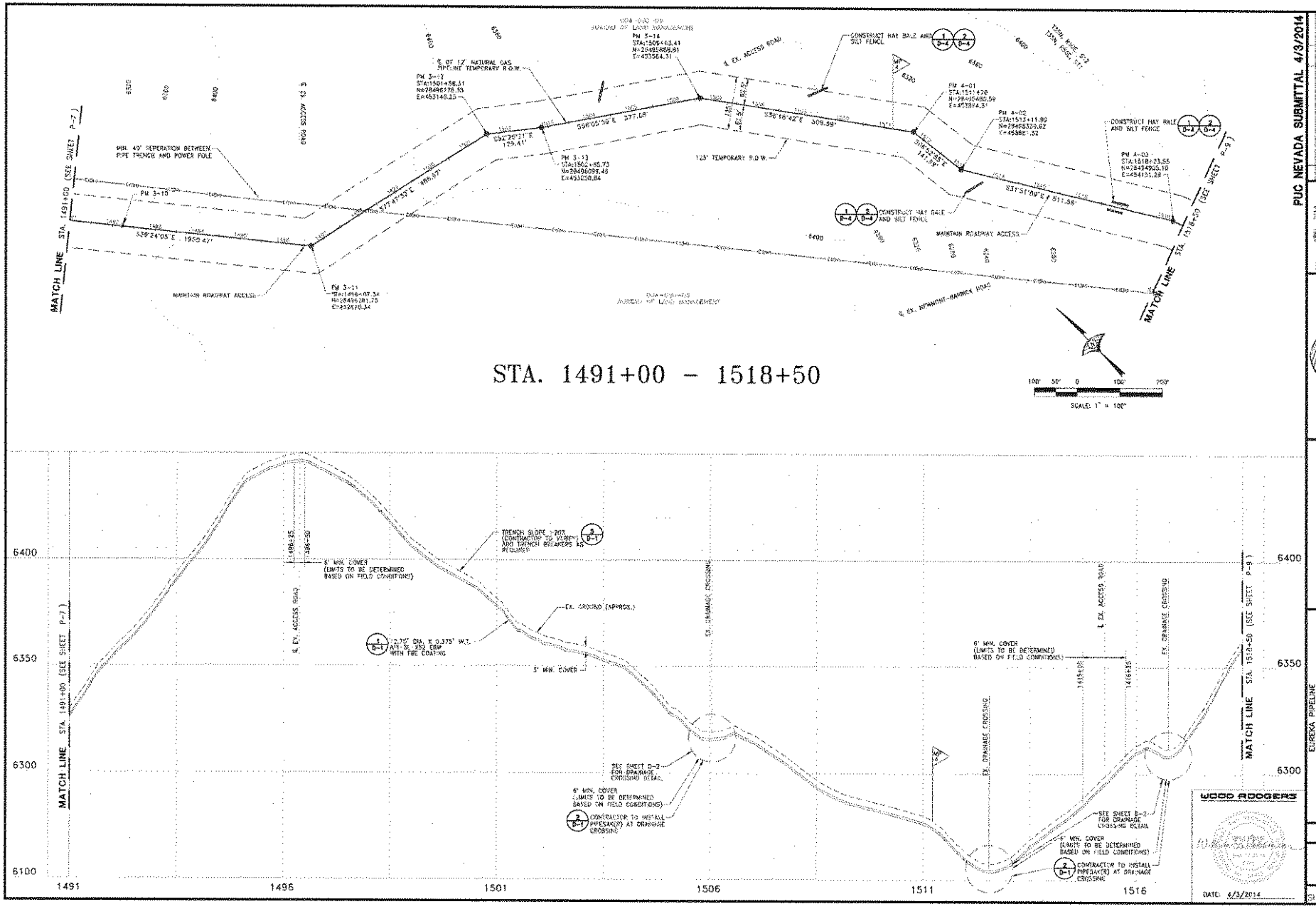
PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-7
SHT 13 OF 47

WOOD RODGERS
DATE: 4/3/2014



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PROSPECTOR PIPELINE COMPANY

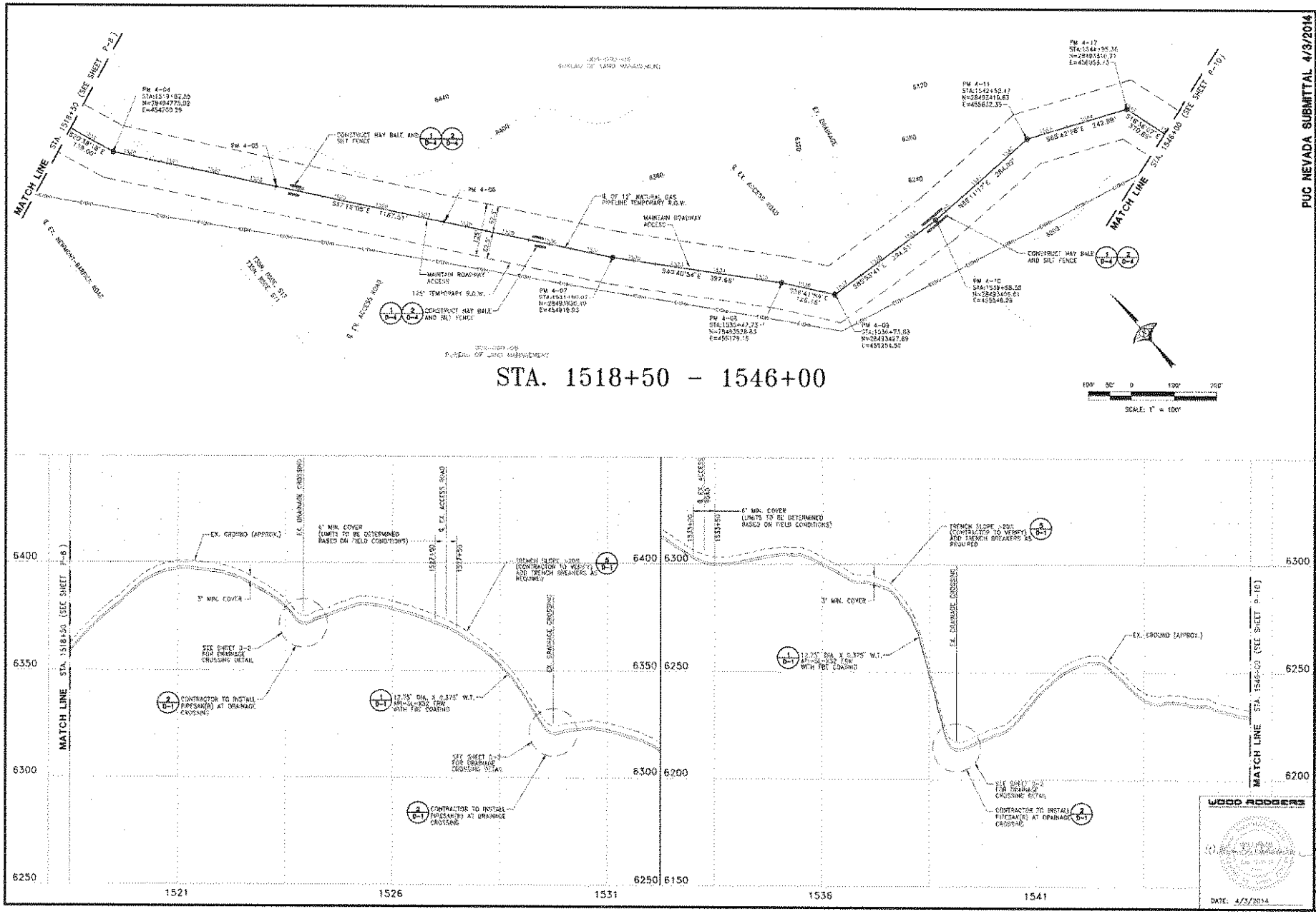
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.028
DRAWING P-8

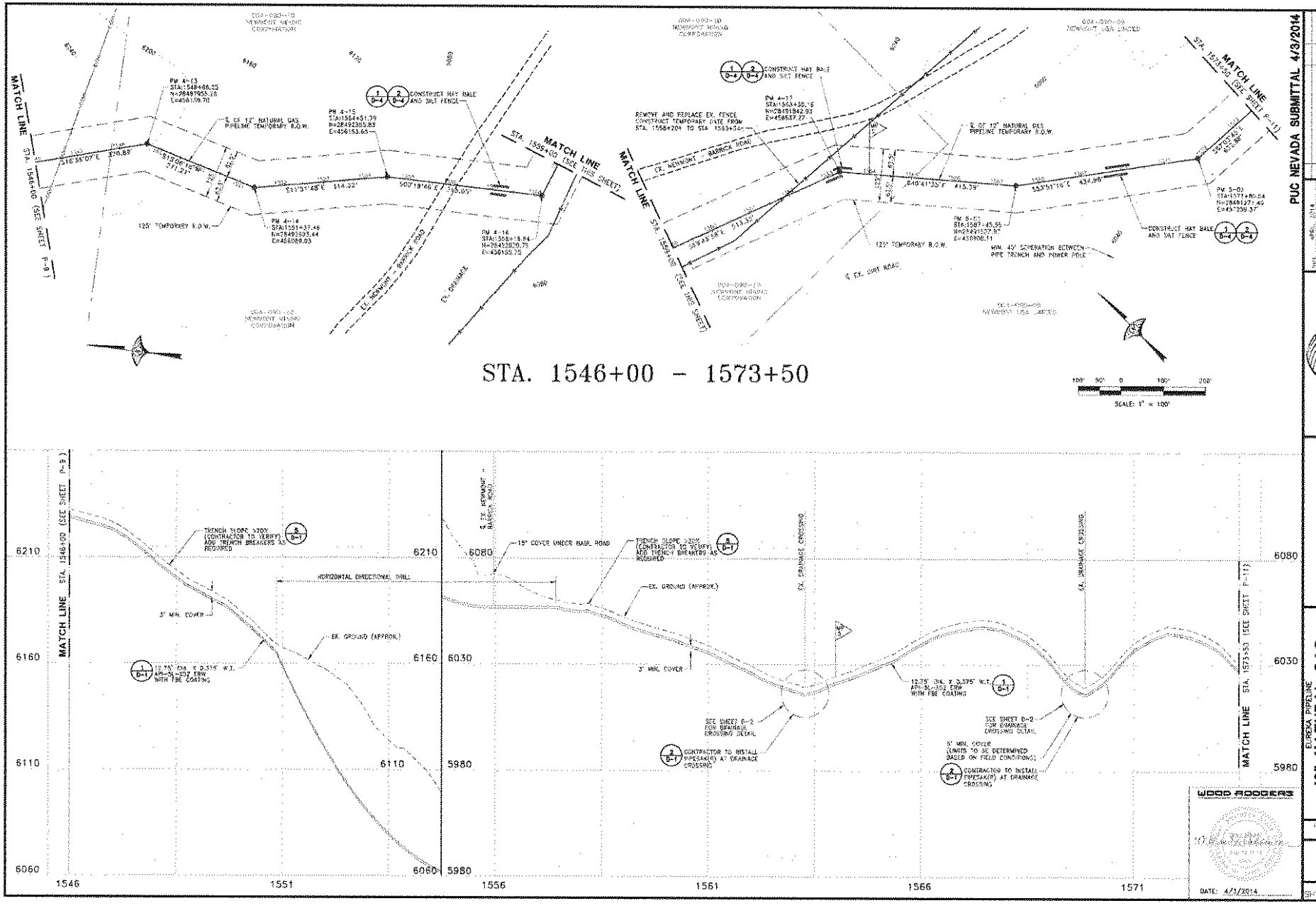
SHT 14 OF 47

WOOD RODGERS

DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014
STA. 1518+50 - 1546+00
MATCH LINE STA. 1518+50 (SEE SHEET P-8)
MATCH LINE STA. 1546+00 (SEE SHEET P-10)
CONSTRUCT HAY BALE AND SILT FENCE
MAINTAIN ROADWAY ACCESS
125' TEMPORARY R.O.W.
EX. ACCESS ROAD
EX. DRAINAGE
EX. NEWMONT-BARRICK ROAD
SCALE: 1" = 100'
EX. GROUND (APPROX.)
6' MIN. COVER (LIMITS TO BE DETERMINED BASED ON FIELD CONDITIONS)
3' MIN. COVER
TRENCH SLOPE >20% (CONTRACTOR TO VERIFY) ADD TRENCH BREAKERS AS REQUIRED
EX. DRAINAGE CROSSING
SEE SHEET D-3 FOR DRAINAGE CROSSING DETAIL
CONTRACTOR TO INSTALL PIPESAK(R) AT DRAINAGE CROSSING
12.75" DIA. X 0.375" W.T. API-5L-X52 FRW WITH FBE COATING
6400
6350
6300
6250
6200
6150
1521
1526
1531
1536
1541
WOOD RODGERS
DATE: 4/3/2014
WOOD RODGERS
PROSPECTOR PIPELINE COMPANY
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET
PROJECT NO. 2811.008
DRAWING P-9
SHT 16 OF 47



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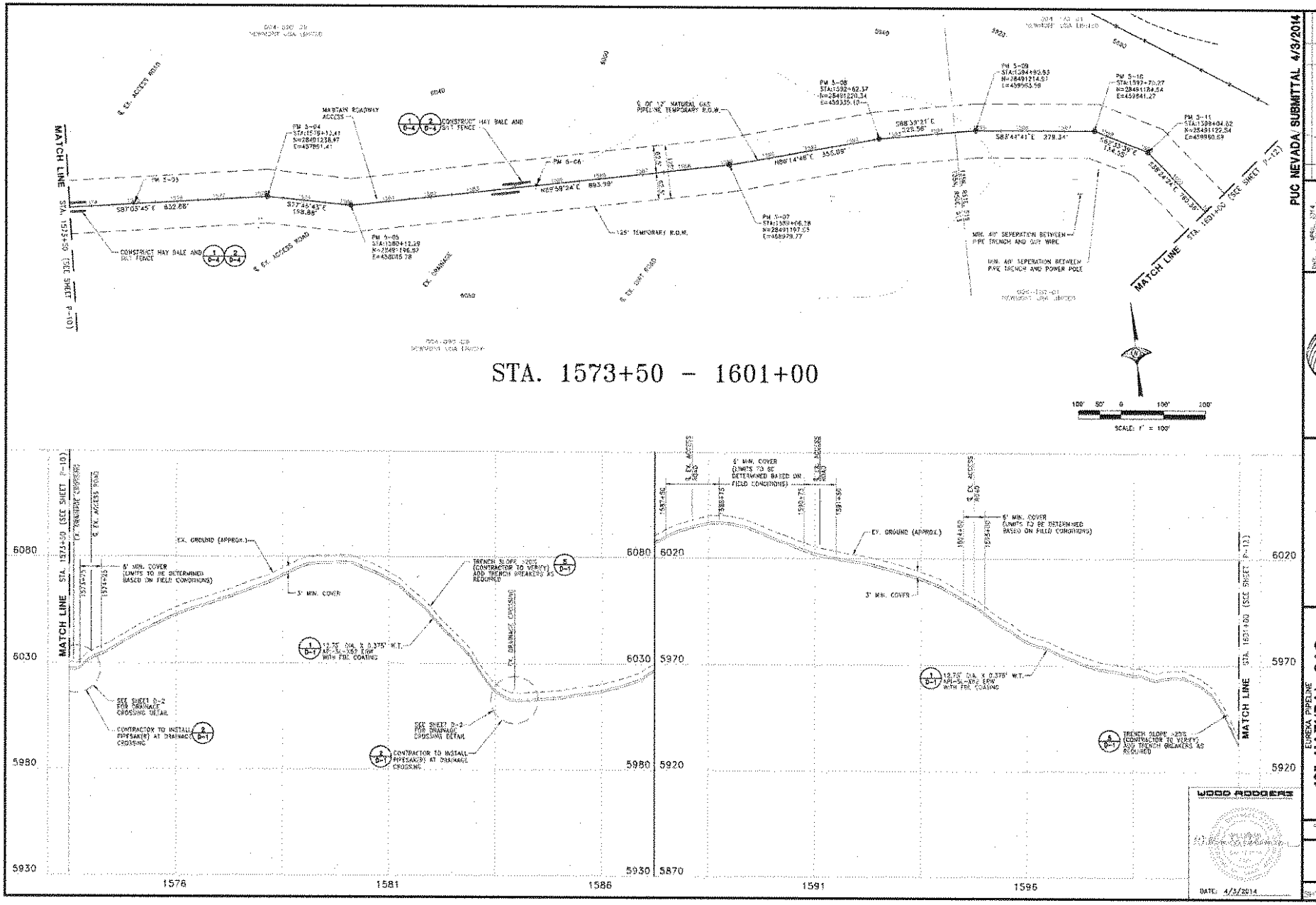
5440 Reno Corporate Drive Reno, NV 89511
Tel 775.823.4068 Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-10
SHT 16 OF 47

WOOD RODGERS
DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

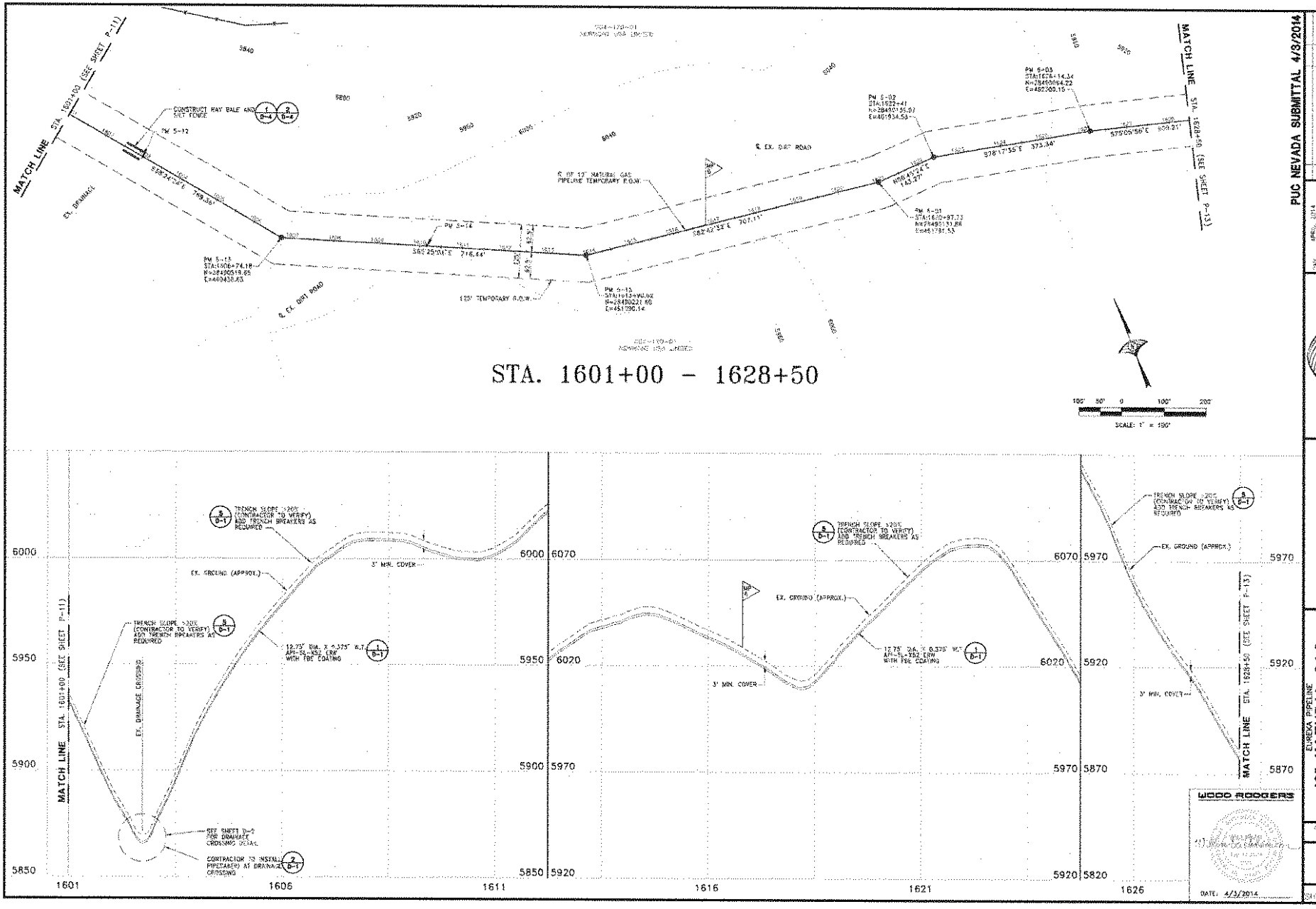
WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
4440 Ponto Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2011.008
DRAWING P-11
SHT 17 OF 47

WOOD RODGERS
DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/8/2014

WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Fax 775.853-4068

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

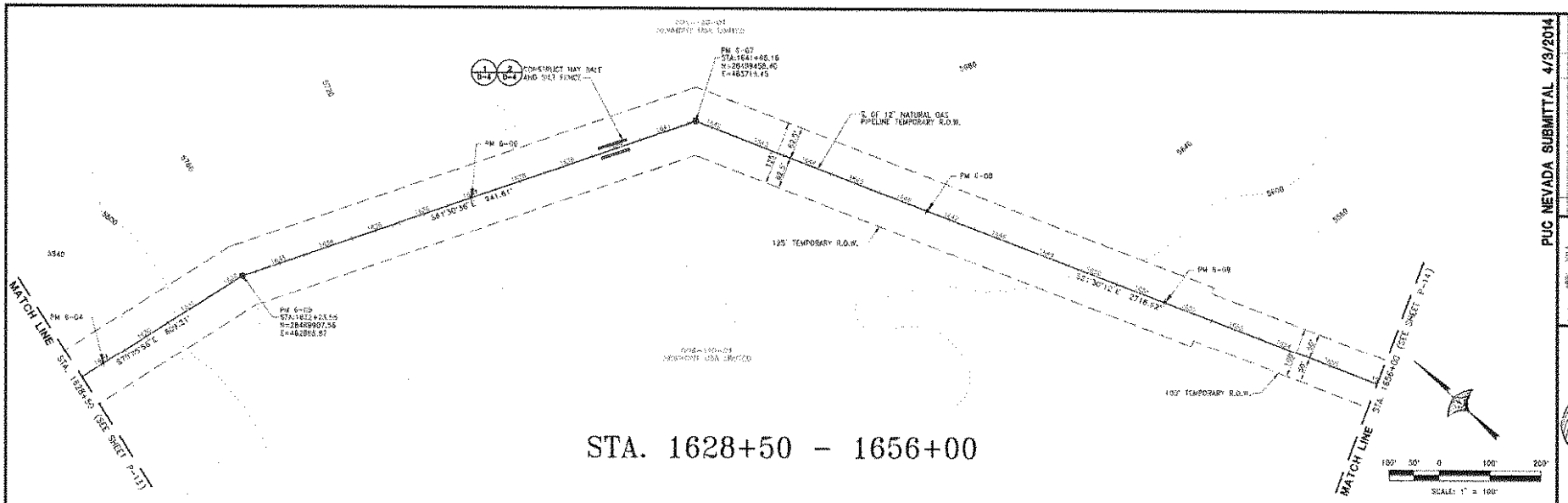
WOOD RODGERS

DATE: 4/3/2014

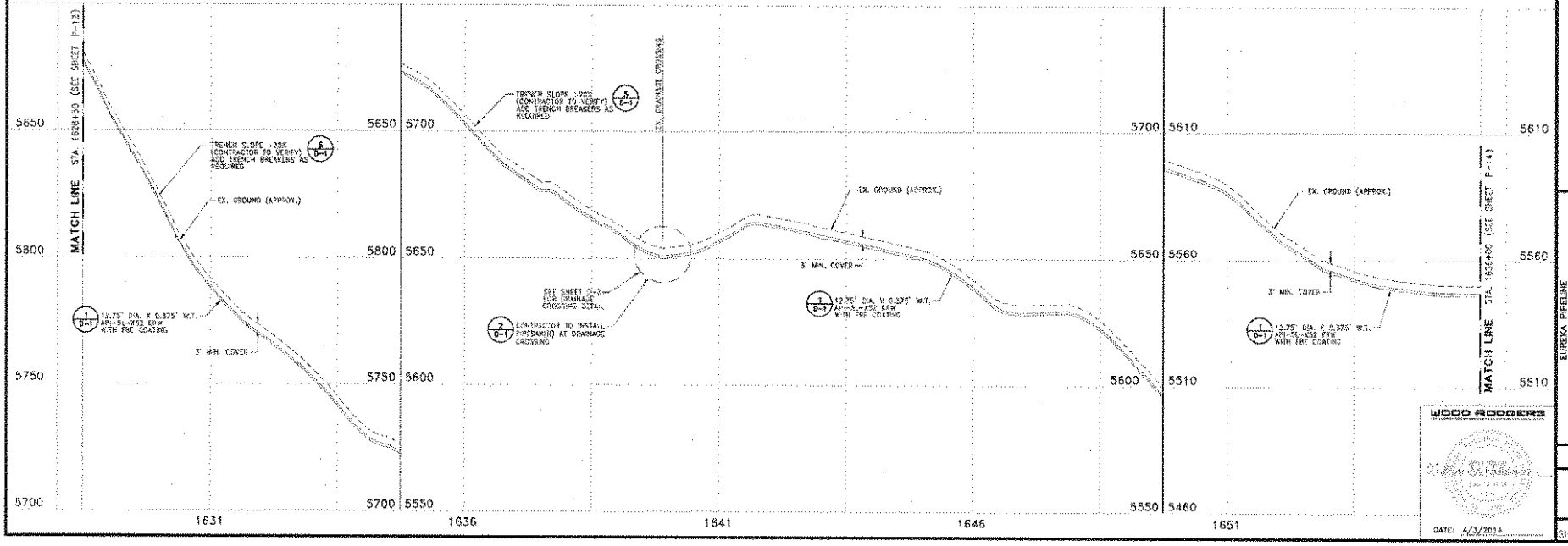
PROJECT NO. 2011.008

DRAWING P-12

SHT 18 OF 47



STA. 1628+50 - 1656+00



PUC NEVADA SUBMITTAL 4/3/2014

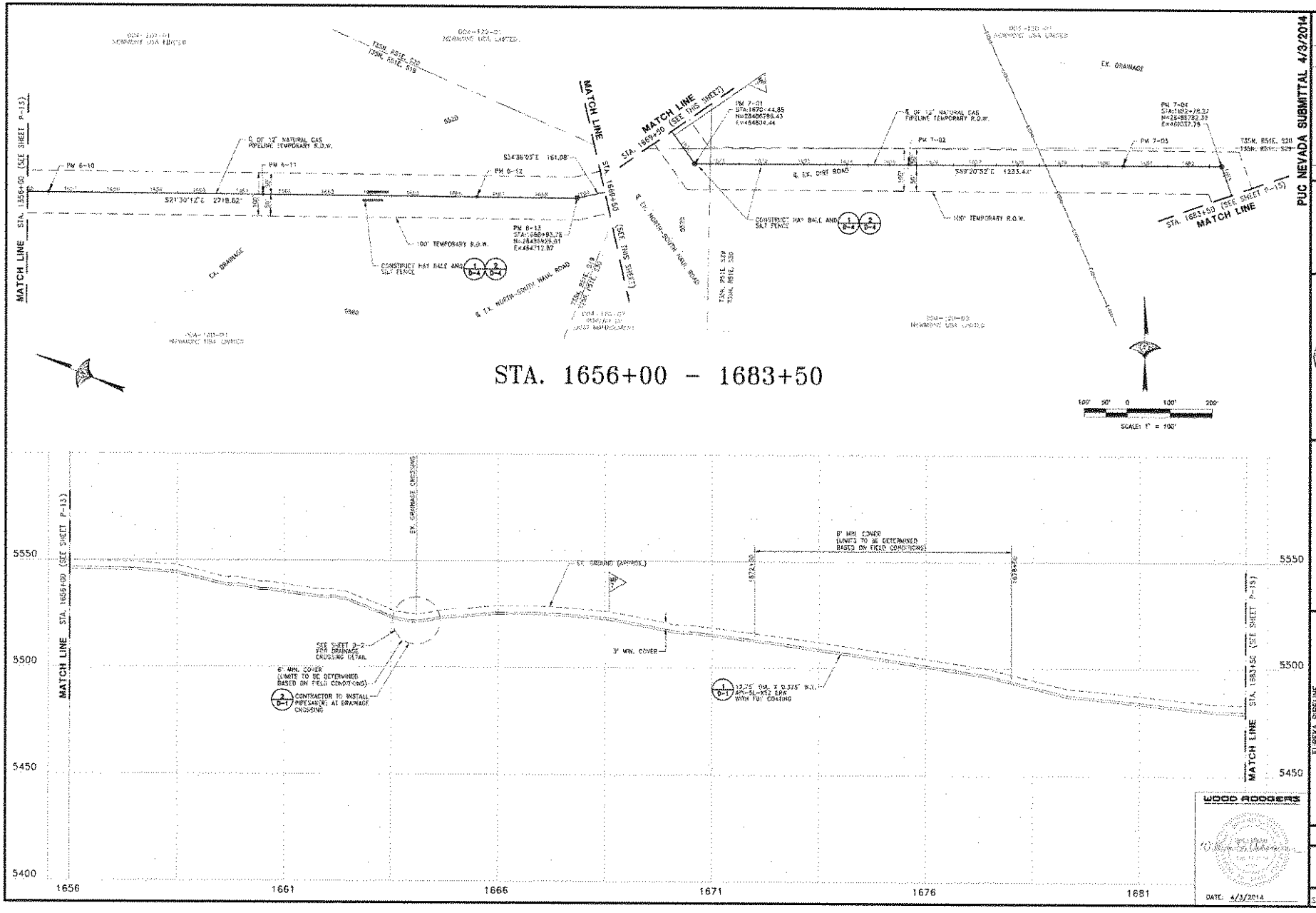
WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
PH 775.823.4068
FAX 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-13
SHT 19 OF 47

WOOD RODGERS
DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

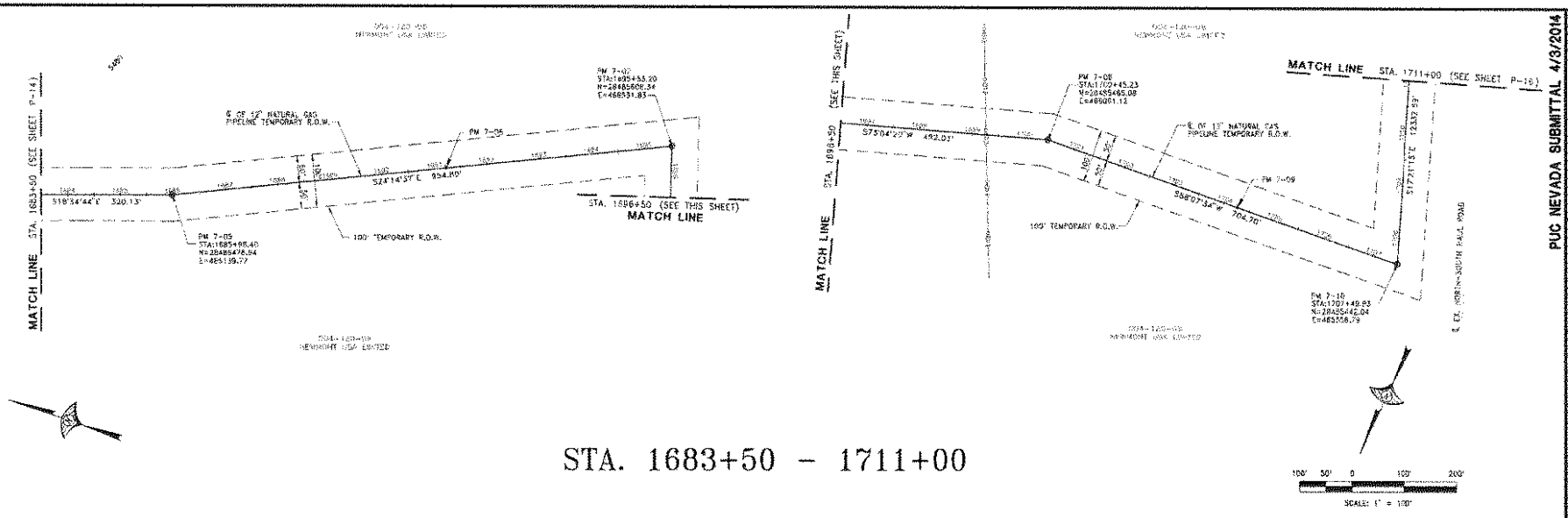
WOOD RODGERS
DESIGN INNOVATIONS
3440 Pana Corporate Drive
Reno, NV 89511
Tel 775.623.4068
Fax 775.623.4068

PROSPECTOR PIPELINE COMPANY

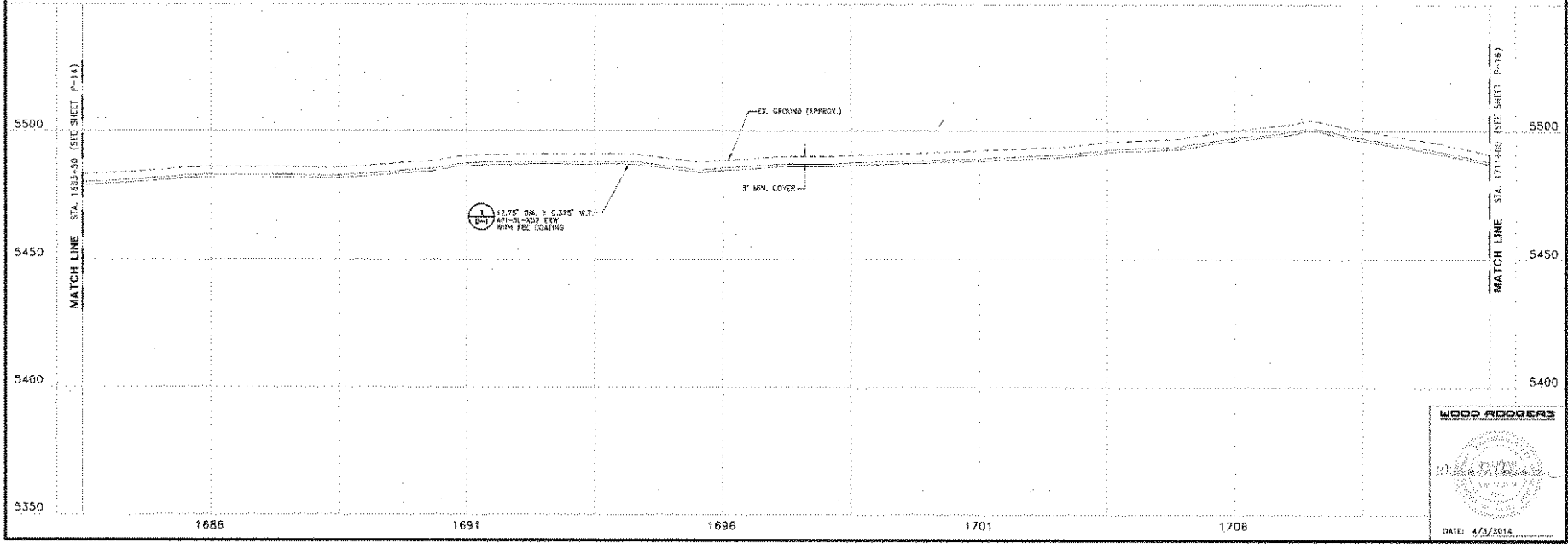
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-14
SHT 20 OF 47

WOOD RODGERS
DATE: 4/3/2014



STA. 1683+50 - 1711+00



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

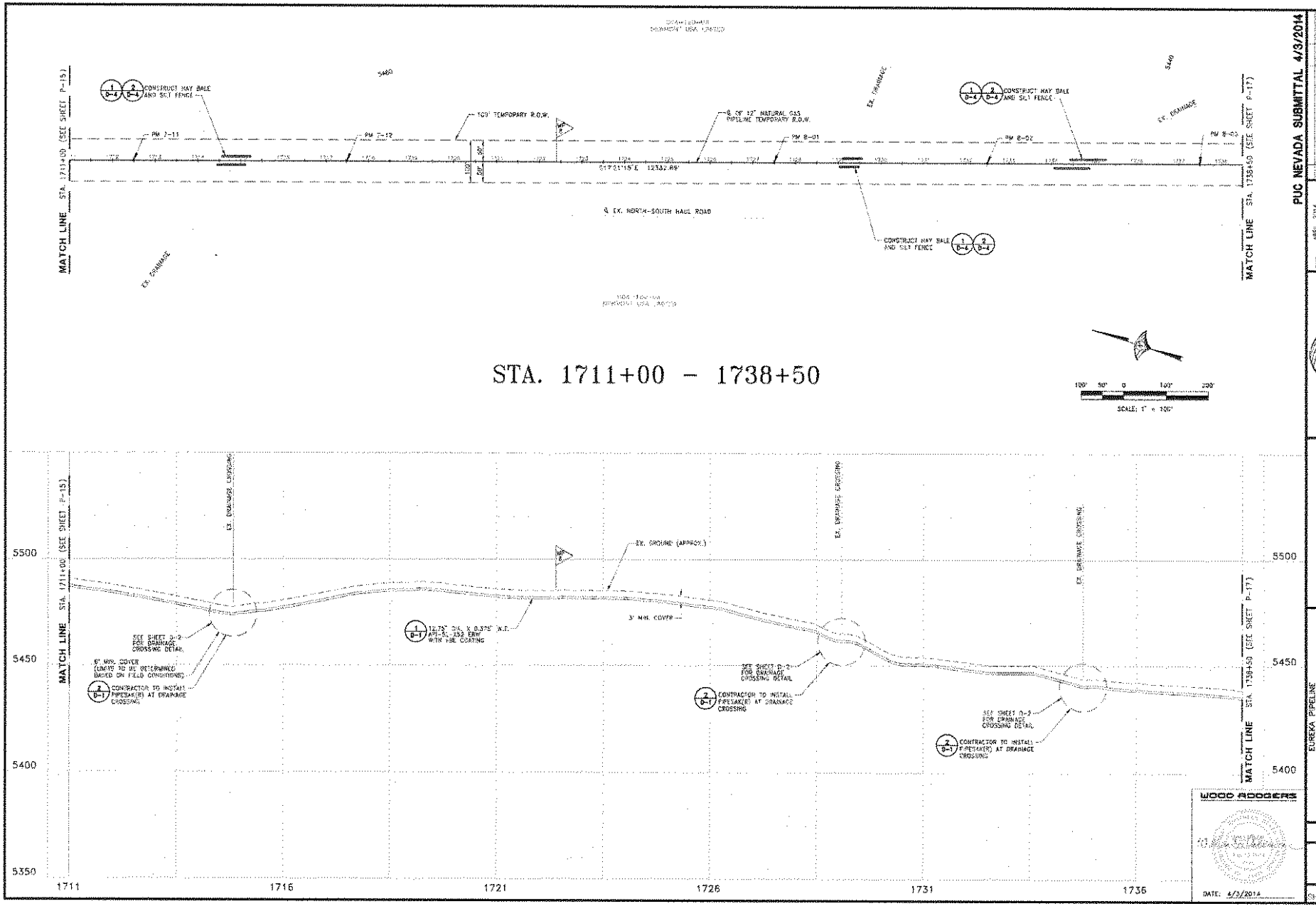
PROJECT NO. 2811.008

DRAWING P-15

SHT 21 OF 47

WOOD RODGERS

DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Tel: 775.823.4068
Fax: 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

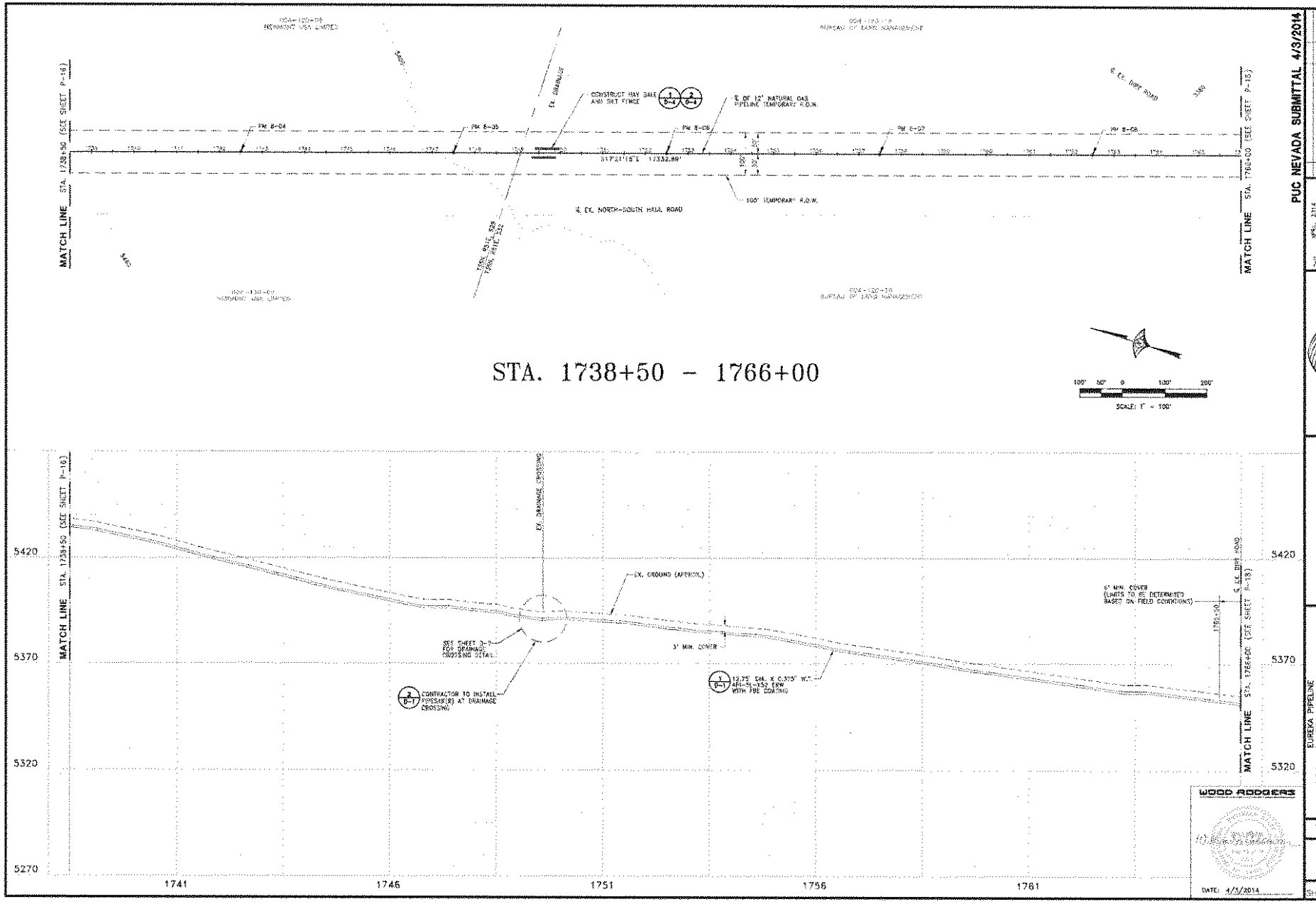
PROJECT NO. 2611.005

DRAWING P-16

SHEET 22 OF 47

WOOD RODGERS

DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS

PROSPECTOR PIPELINE COMPANY

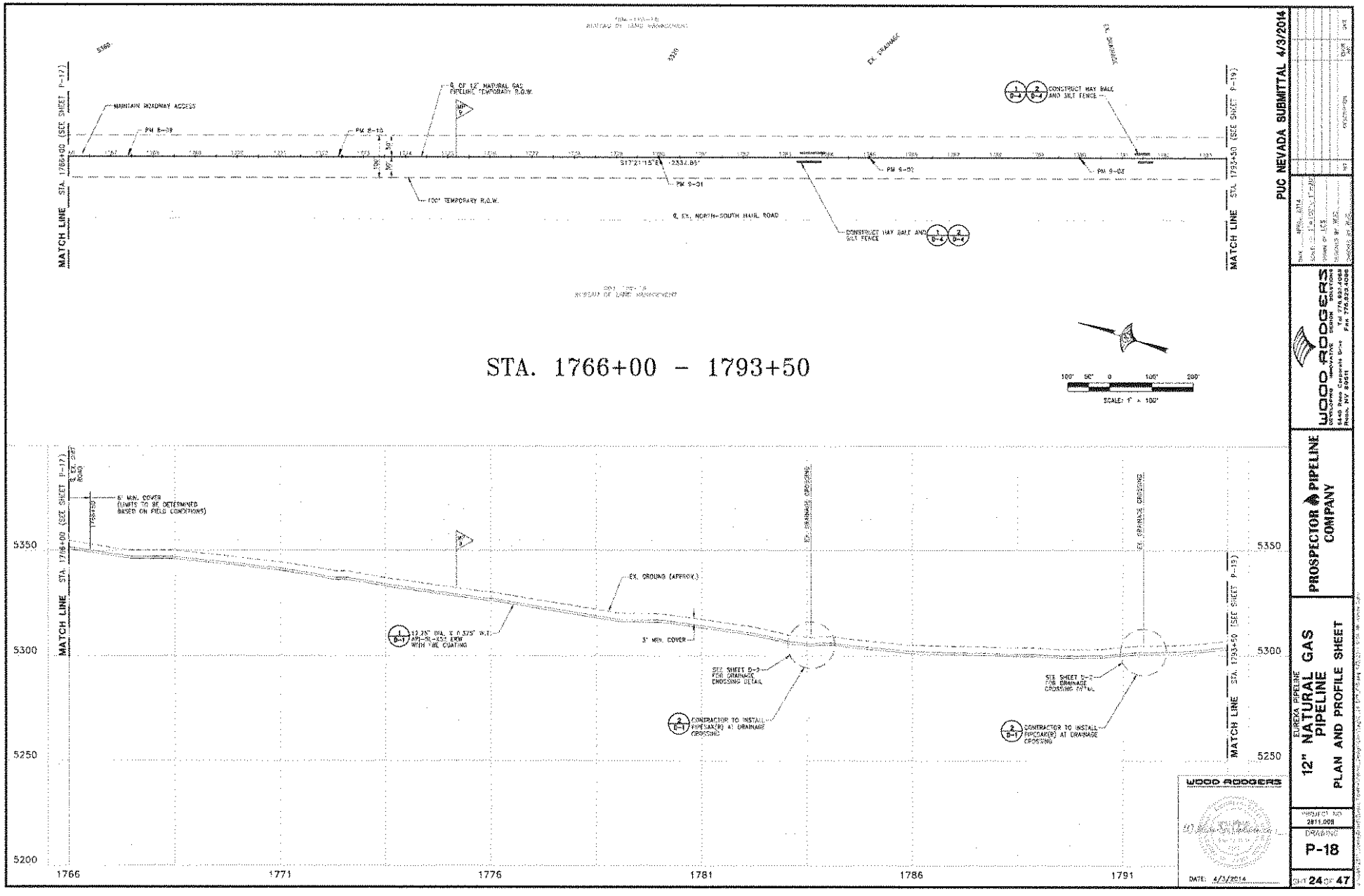
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2011.008

DRAWING P-17

SHT 23 OF 47

DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

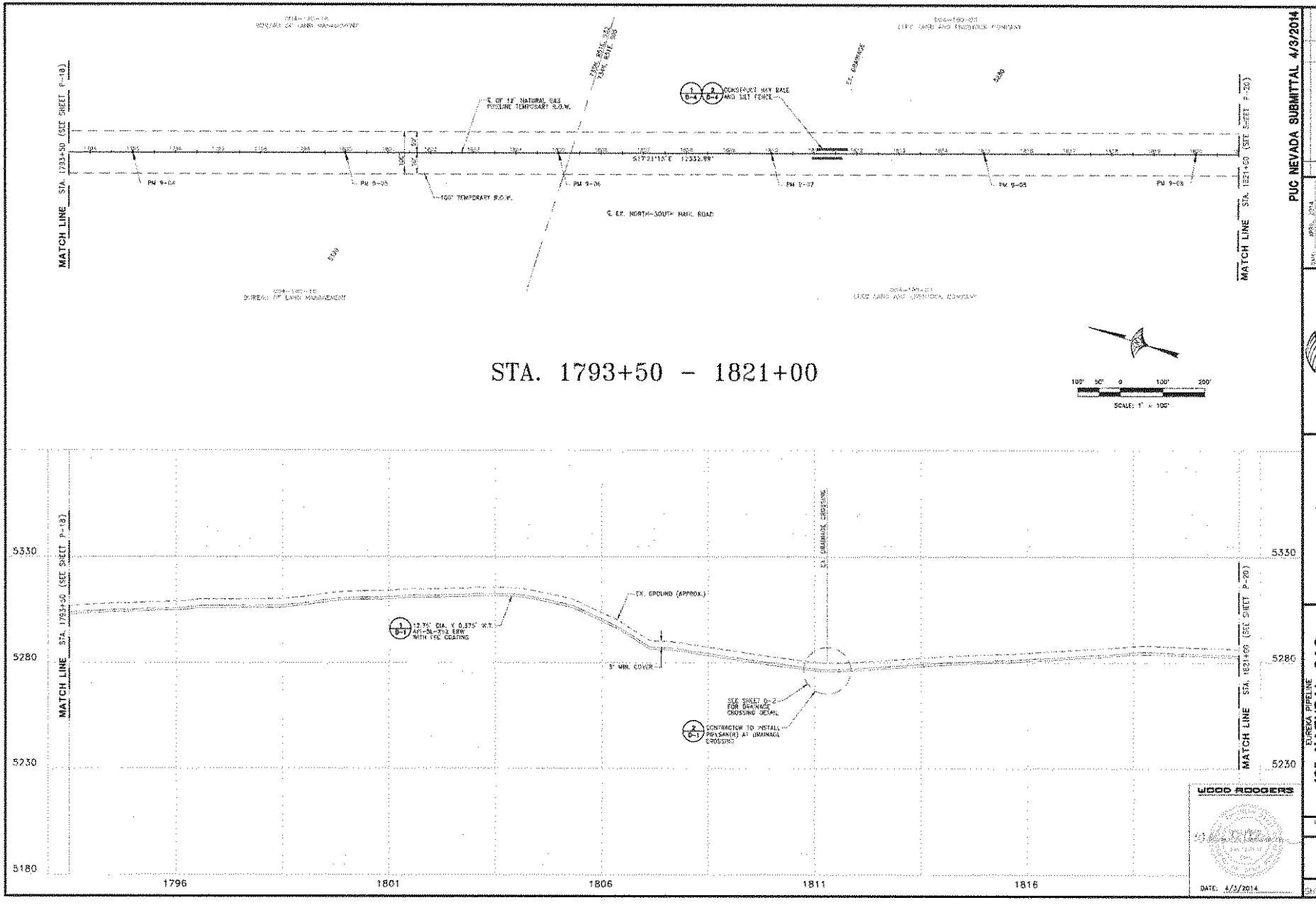
PROJECT NO. 2811.008

DRAWING P-18

SHT 24 OF 47

WOOD RODGERS

DATE: 4/3/2014



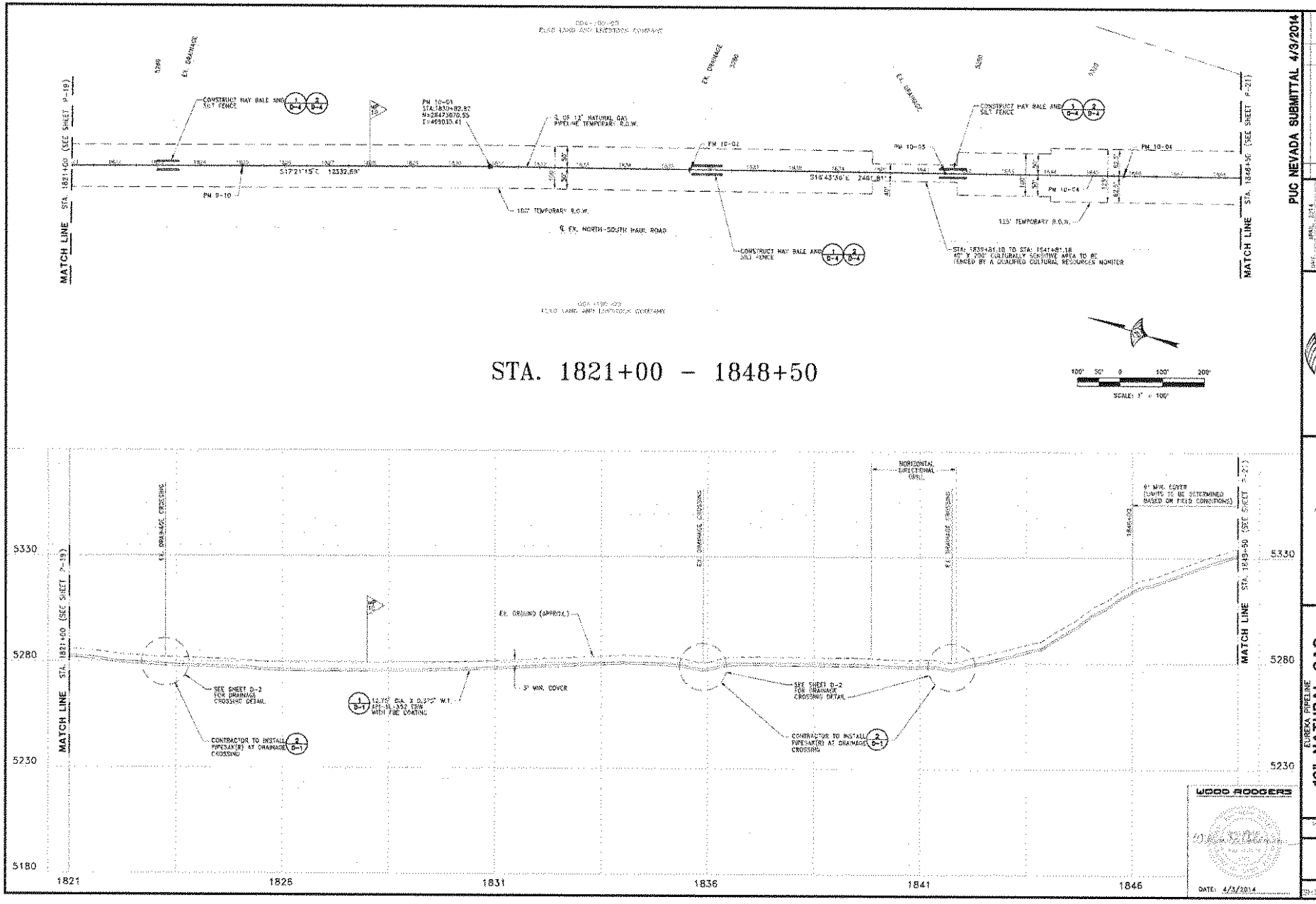
PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
DESIGN SOLUTIONS
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4069

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-19
SHT 25 OF 47



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

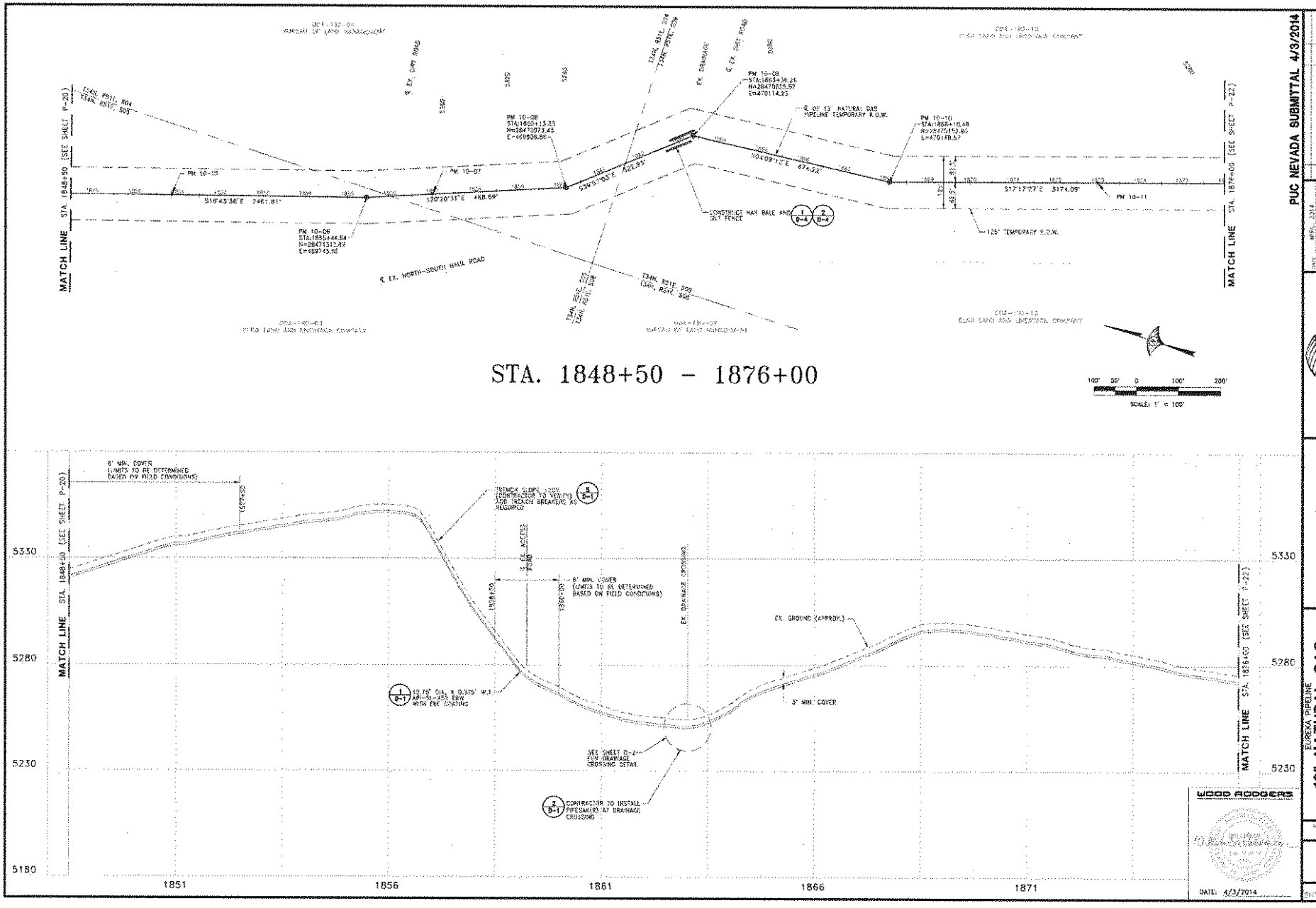
WOOD RODGERS

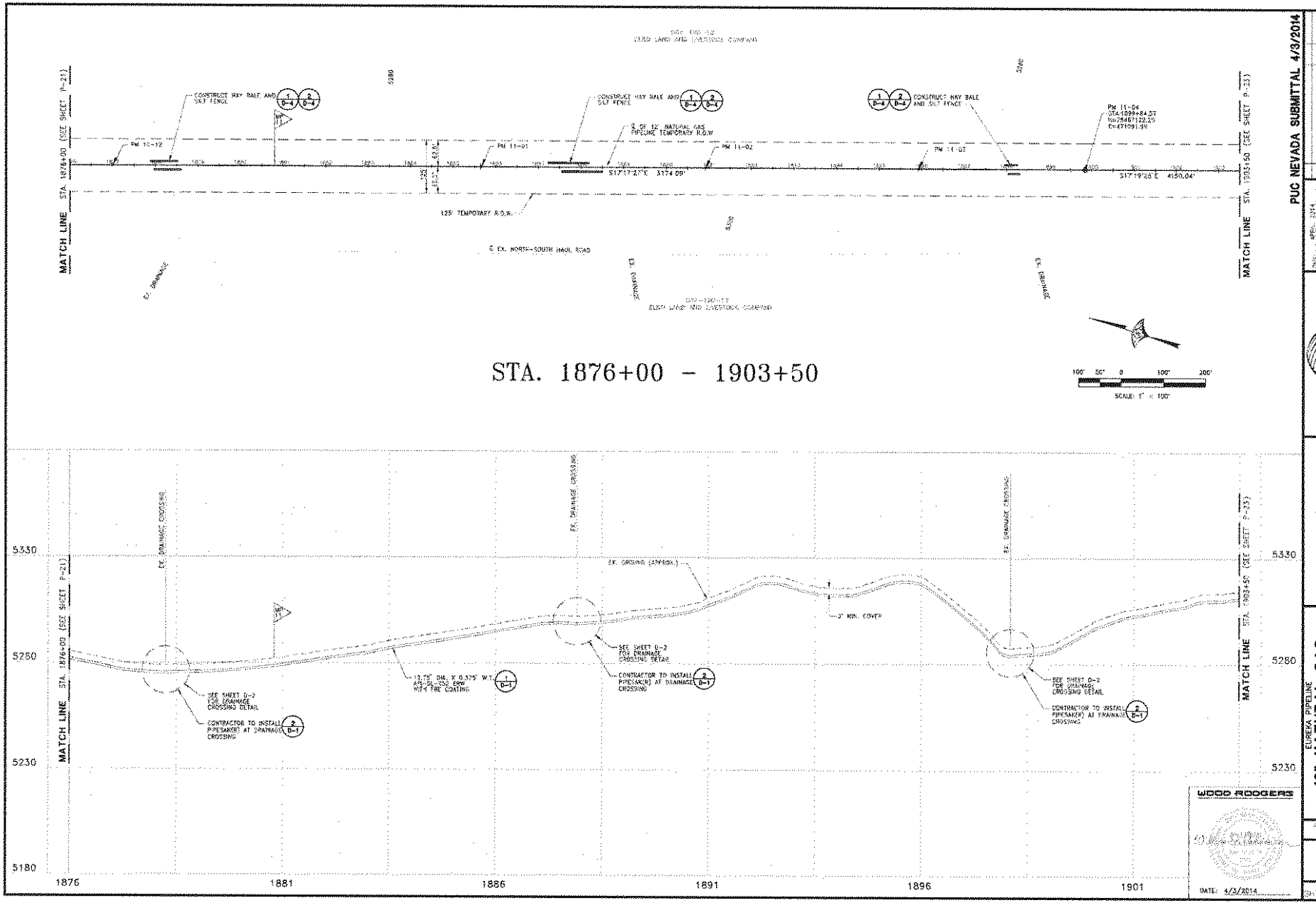
DATE: 4/3/2014

PROJECT No. 2811.008

DRAWING P-20

SHEET 26 OF 47


MATCH LINE STA. 1848+50 (SEE SHEET P-20)
MATCH LINE STA. 1876+00 (SEE SHEET P-22)
PM 10-05
PM 10-06
PM 10-07
PM 10-08
PM 10-09
PM 10-10
PM 10-11
S16°43'36"E 2467.81'
N30°30'31"E 468.69'
S34°57'05"E 422.83'
N34°09'12"E 674.22'
S17°17'27"E 3174.09'
CONSTRUCT HAY BALE AND SILT FENCE
125' TEMPORARY R.O.W.
S. EX. NORTH-SOUTH HAUL ROAD
EX. DRAINAGE
EX. DIRT ROAD
EX. DIRT ROAD
TEMP. 65'X 20' STOCK PILE
TEMP. 65'X 20' STOCK PILE
TEMP. 65'X 20' STOCK PILE
TEMP. 65'X 20' STOCK PILE
BUREAU OF LAND MANAGEMENT
ELKO LAND AND LIVESTOCK COMPANY
ELKO LAND AND LIVESTOCK COMPANY
BUREAU OF LAND MANAGEMENT
ELKO LAND AND LIVESTOCK COMPANY
100' 50' 0 100' 200'
SCALE: 1" = 100'
STA. 1848+50 - 1876+00
6' MIN. COVER (LIMITS TO BE DETERMINED BASED ON FIELD CONDITIONS)
TRENCH SLOPE -10% (CONTRACTOR TO VERIFY) 120 INCH-CM BREAKERS AS RECORDED
5330
5280
5230
5180
1851
1856
1861
1866
1871
EX. ACCESS ROAD
6' MIN. COVER (LIMITS TO BE DETERMINED BASED ON FIELD CONDITIONS)
EX. DRAINAGE CROSSING
EX. GROUND (APPROX.)
5' MIN. COVER
12.75" DIA. x 0.375" W.T. API-5L-X52 ERW WITH FBE COATING
SEE SHEET D-2 FOR DRAINAGE CROSSING DETAIL
CONTRACTOR TO INSTALL PIPESAVER(S) AT DRAINAGE CROSSING
DATE: 4/3/2014
PUC NEVADA SUBMITTAL 4/3/2014
WOOD RODGERS
3446 Pans Corporate Drive
Reno, NV 89511
Tel: 775.823.4068
Fax: 775.823.4066
PROSPECTOR PIPELINE COMPANY
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET
PROJECT NO. 2811.003
DRAWING P-21
SHT 27 OF 47



STA. 1876+00 - 1903+50

PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS

PROSPECTOR PIPELINE COMPANY

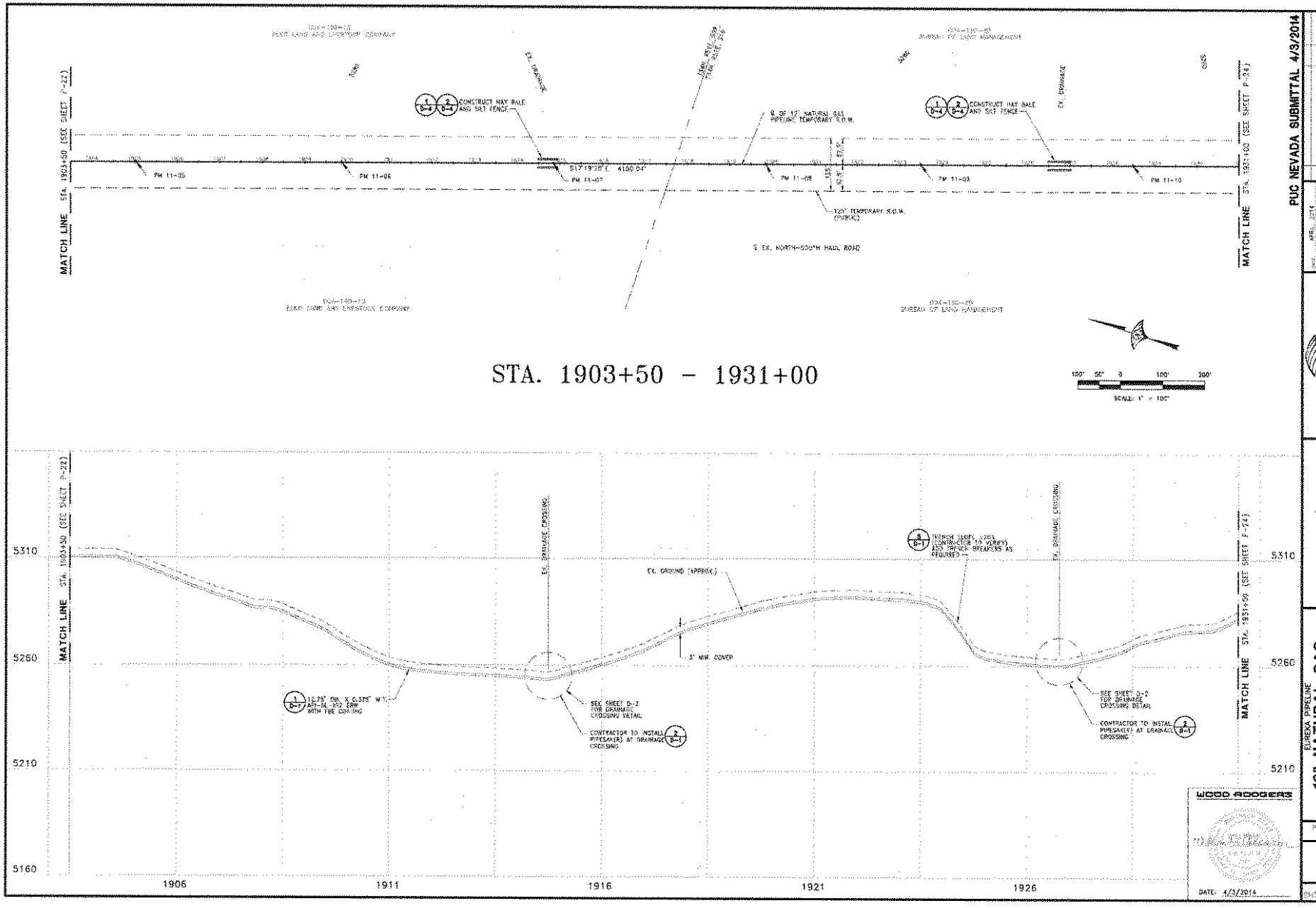
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008

DRAWING P-22

SHT 28 OF 47

DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS

PROSPECTOR PIPELINE COMPANY

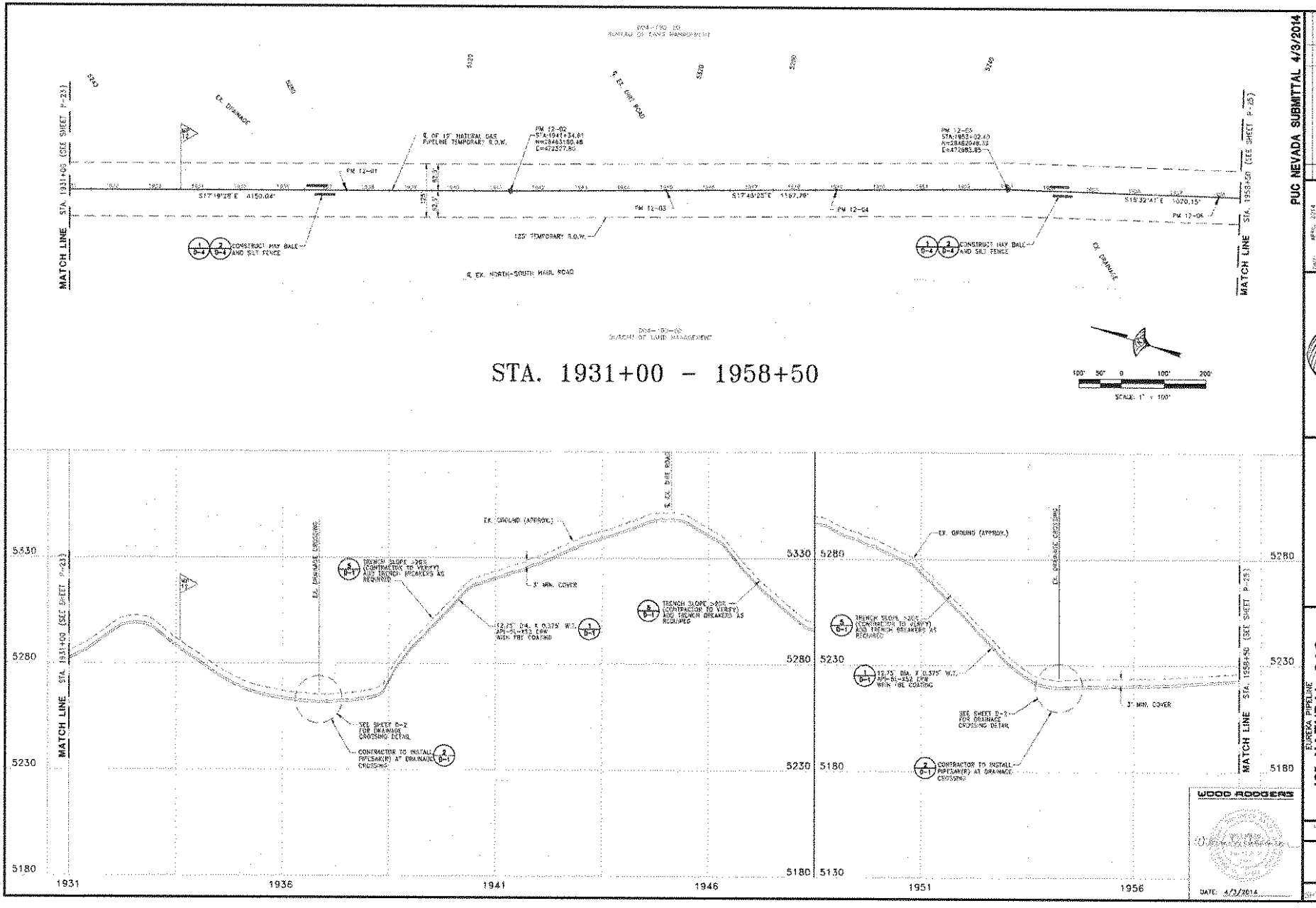
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008

DRAWING P-23

SHT 29 OF 47

DATE: 4/3/2014



STA. 1931+00 - 1958+50

PUC NEVADA SUBMITTAL 4/3/2014

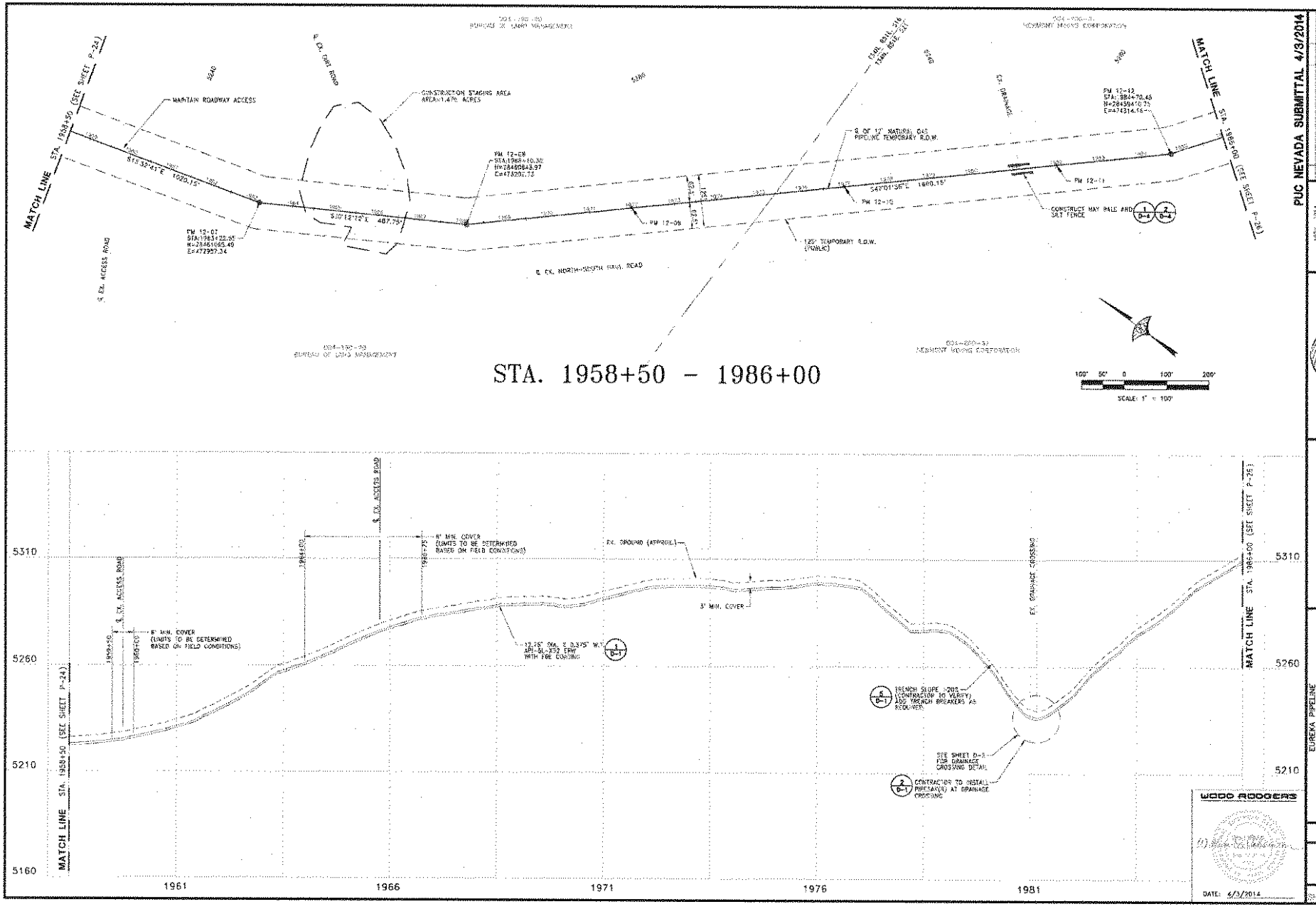
WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
6440 Pine Corporate Drive Tel 775.623.4088
Reno, NV 89511 Fax 775.623.4086

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2011.008
DRAWING P-24
SHT 30 OF 47

WOOD RODGERS
DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

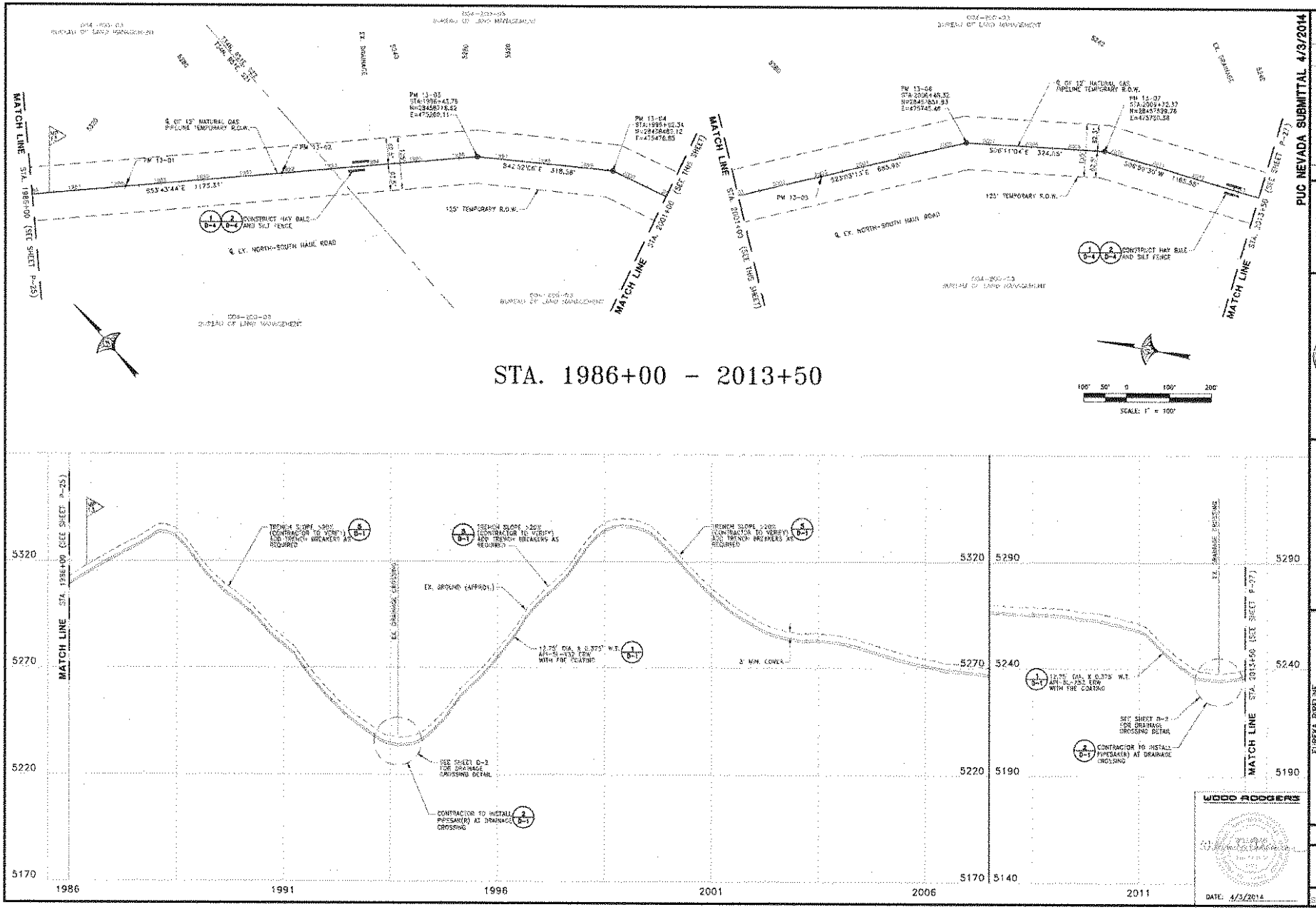
WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.058
DRAWING P-25
SHT 31 OF 47

WOOD RODGERS
DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Tel: 775.823.4068
Fax: 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE

12" NATURAL GAS PIPELINE

PLAN AND PROFILE SHEET

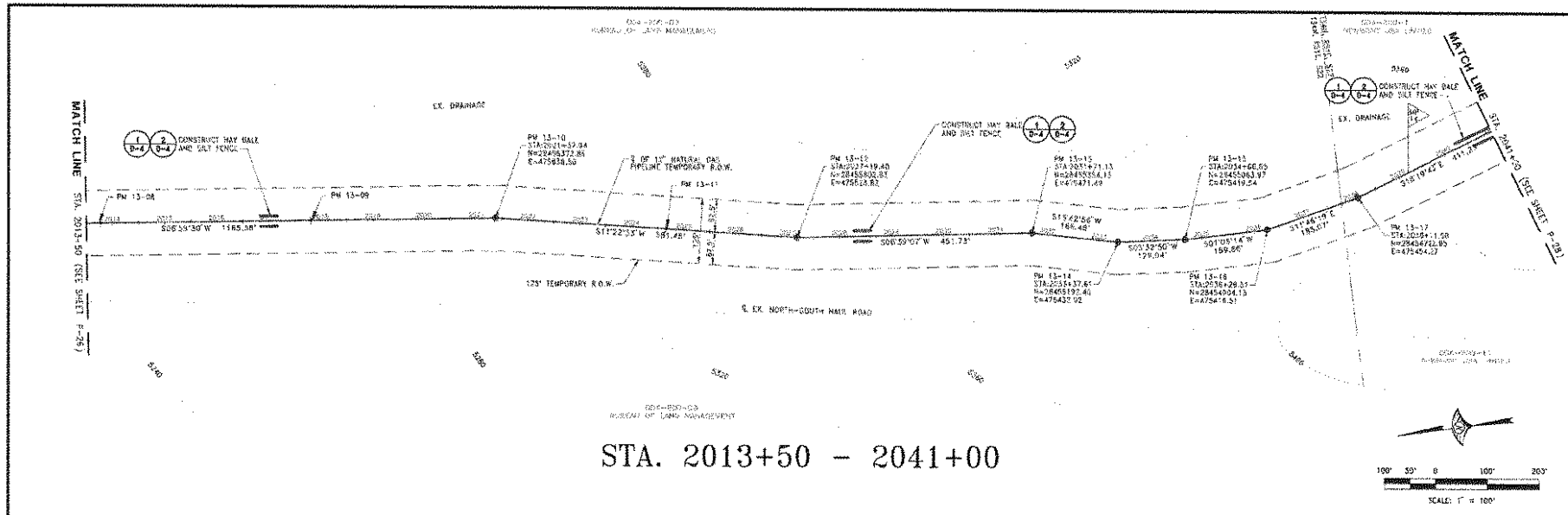
DRAWING NO. 2811.009

DRAWING P-26

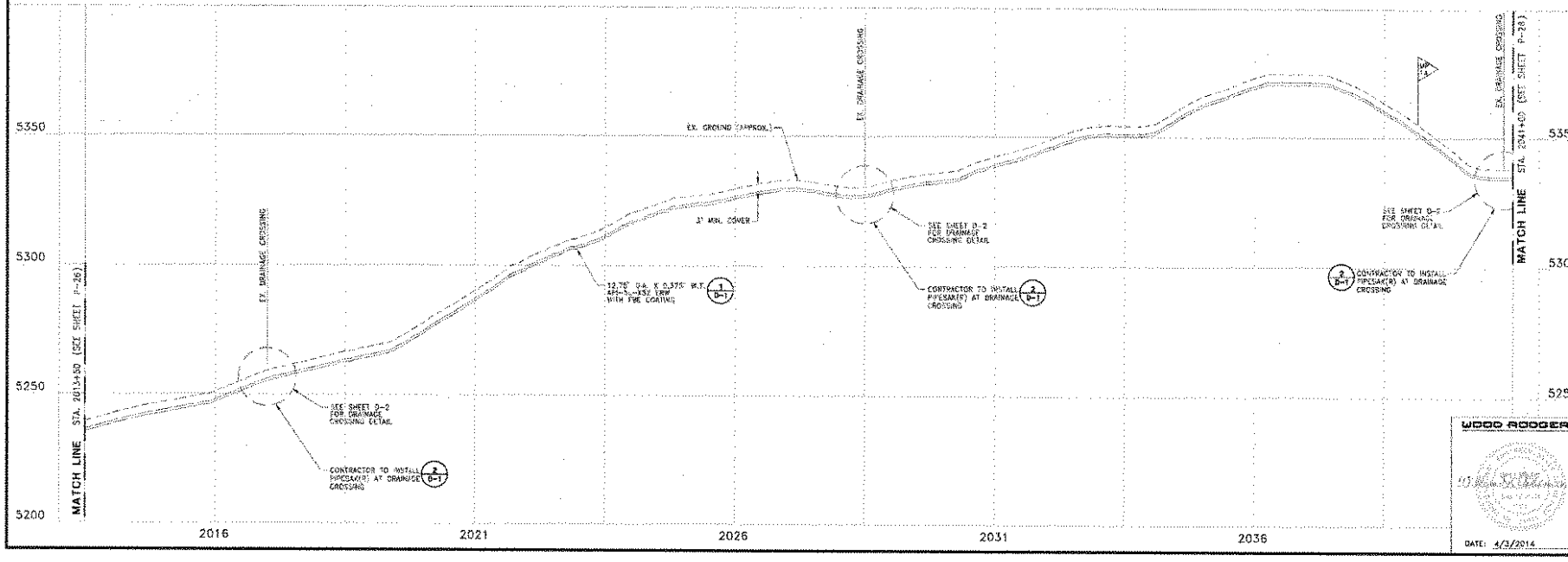
SHT 32 OF 47

WOOD RODGERS

DATE: 4/3/2014



STA. 2013+50 - 2041+00



PUC NEVADA SUBMITTAL 4/3/2014

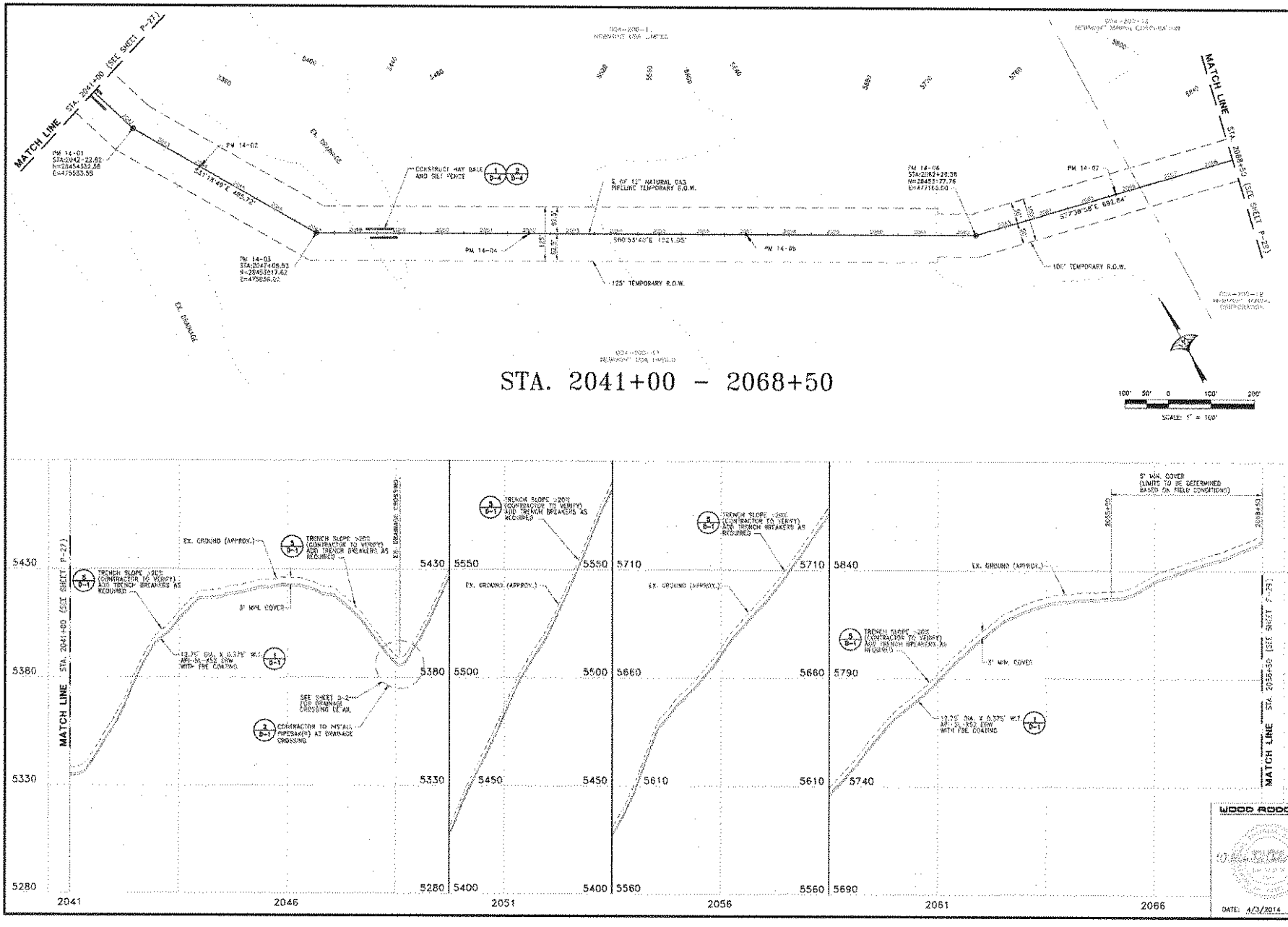
WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-27
SHEET 33 OF 47

WOOD RODGERS
DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

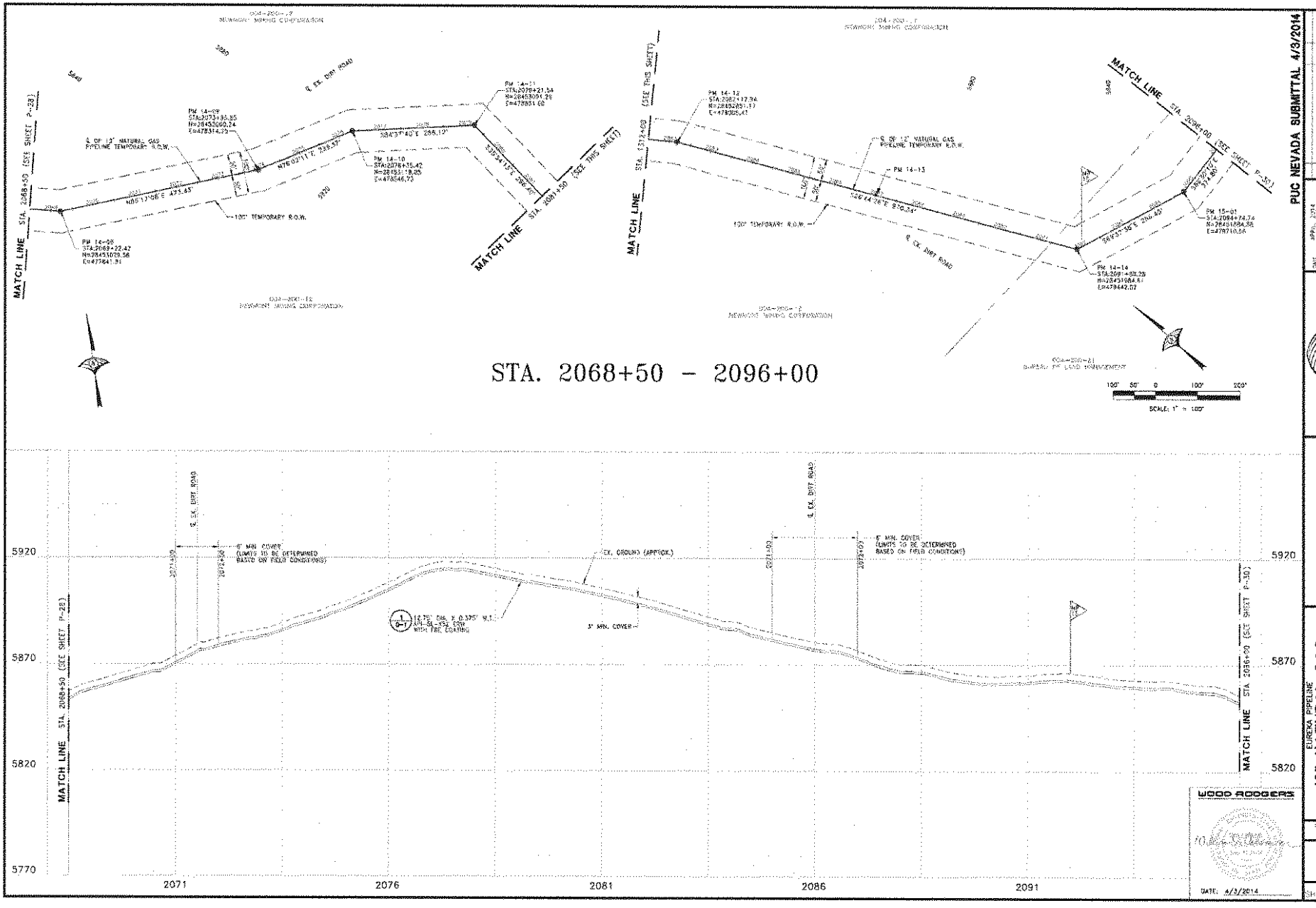
PROJECT NO. 2811.008

DRAWING P-28

SHT 34 OF 47

WOOD RODGERS

DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

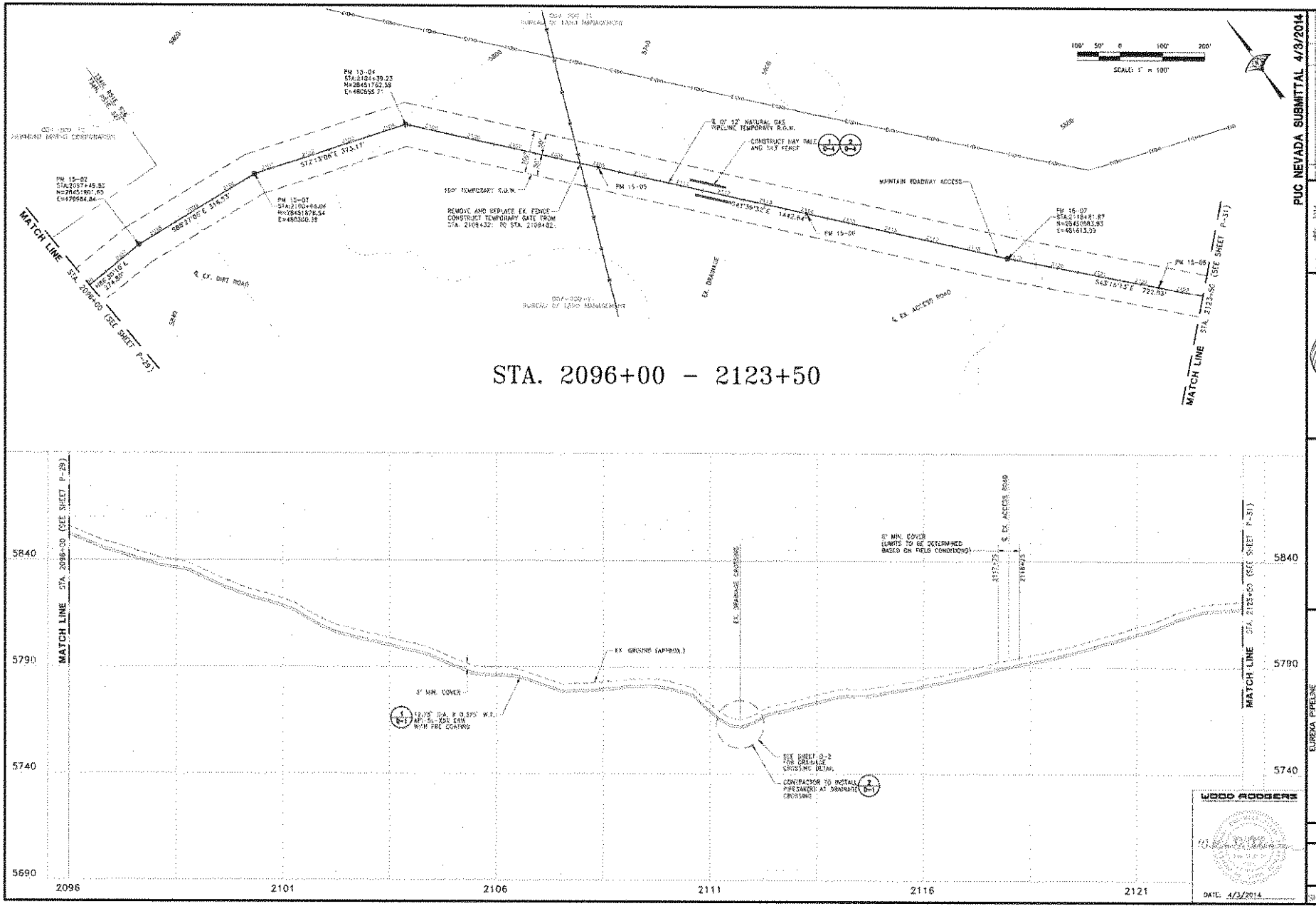
PROJECT NO. 2811.009

DRAWING P-29

SHT 35 OF 47

WOOD RODGERS

DATE: 4/3/2014



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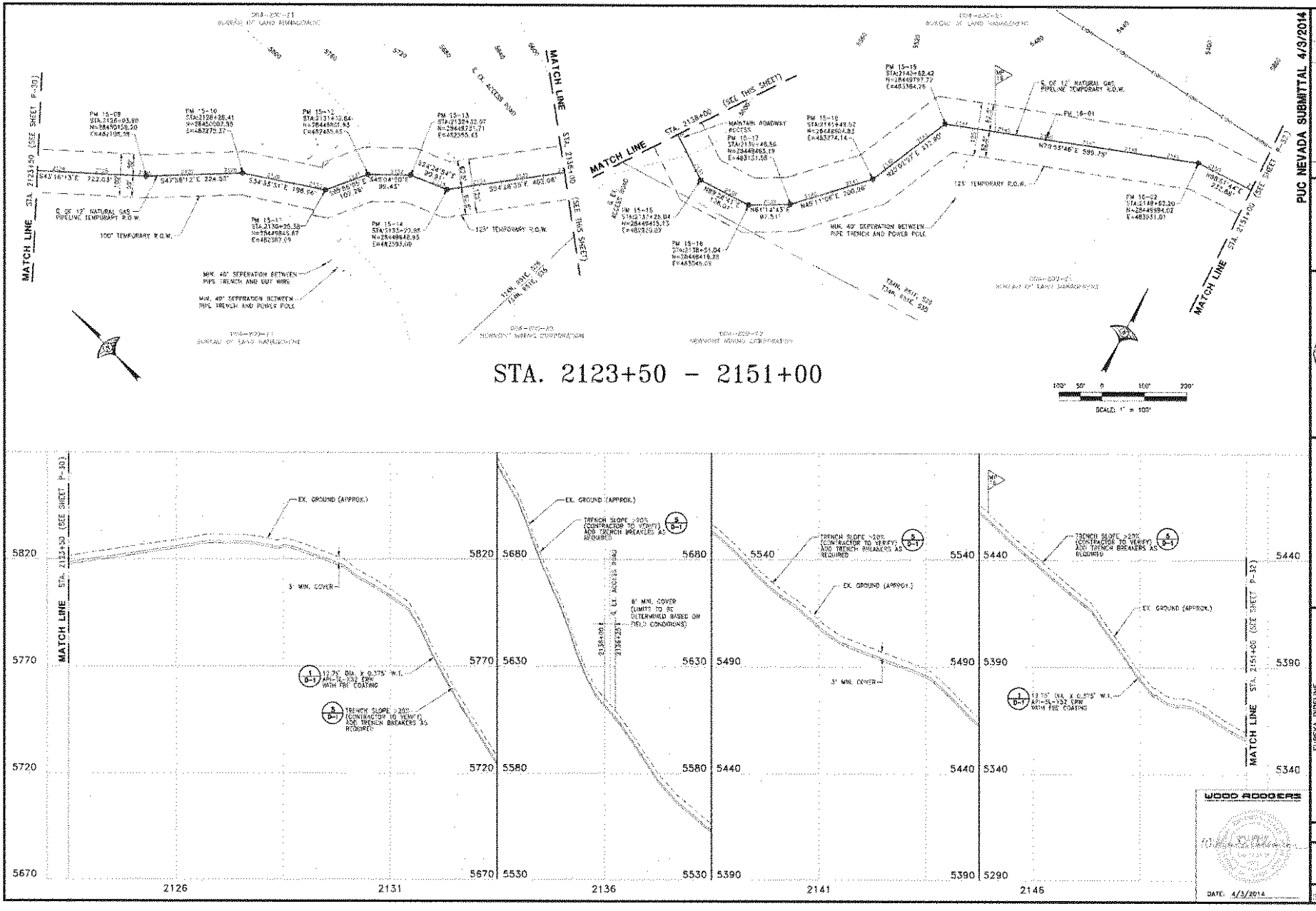
WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
Tel 775.823.4069
Fax 775.823.4066
Reno, NV 89511

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-30
SHT 36 OF 47

WOOD RODGERS
DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

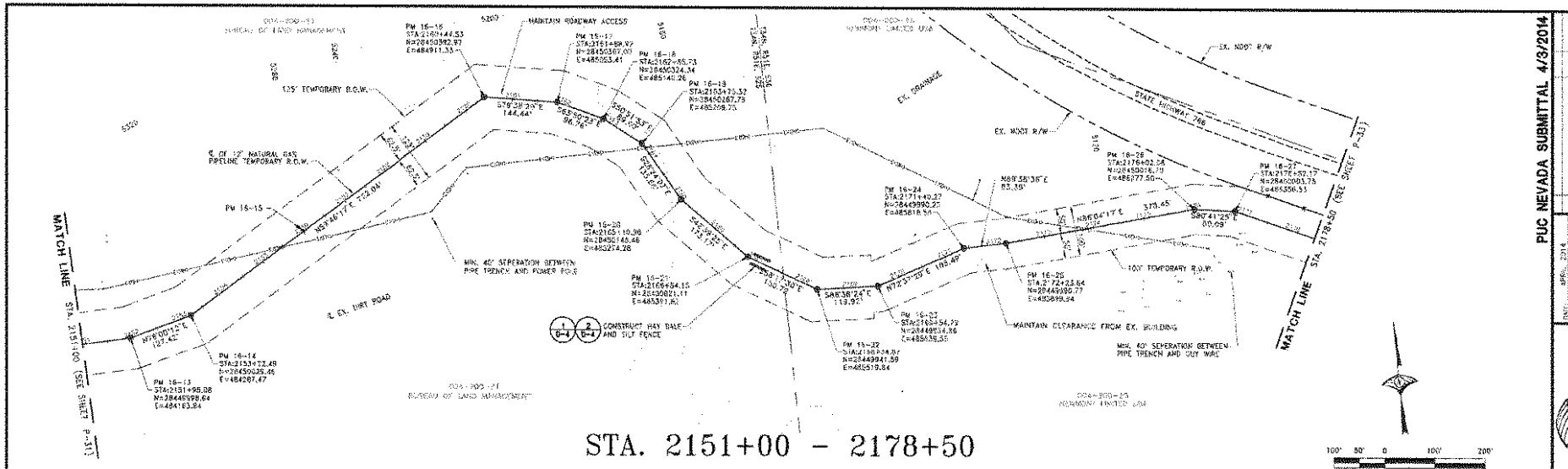
WOOD RODGERS
DESIGN ENGINEERING
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

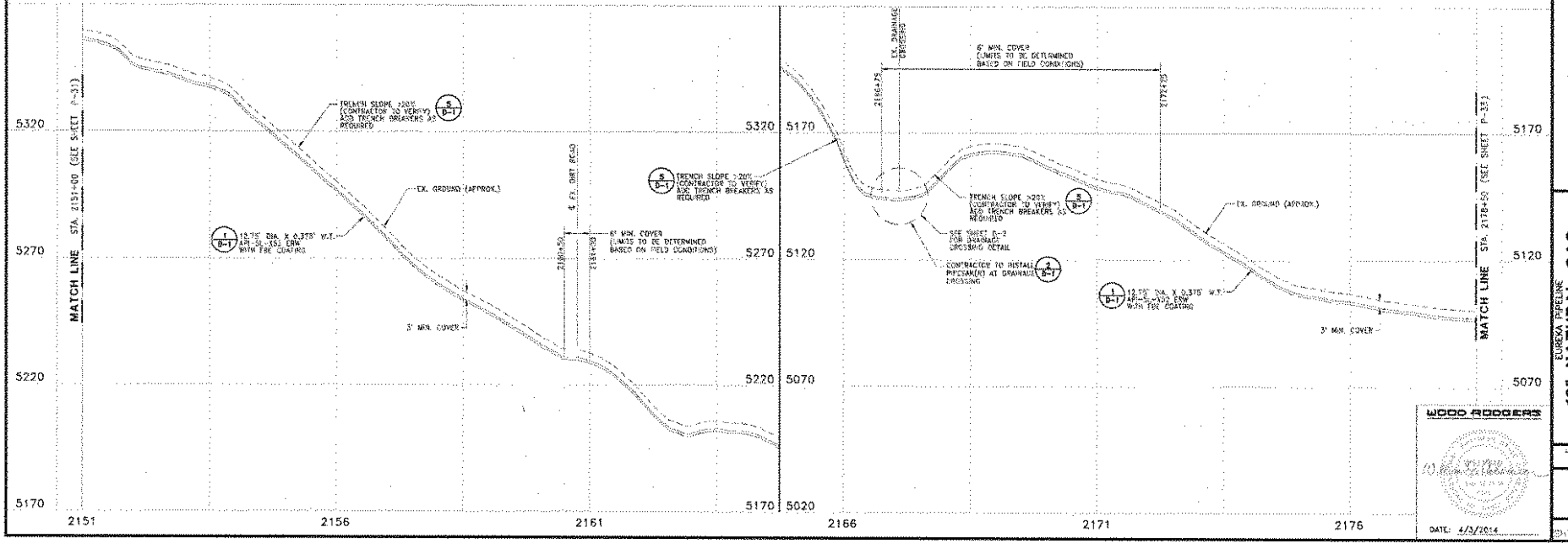
EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2811.008
DRAWING P-31
SHT 37 OF 47

WOOD RODGERS
DATE: 4/3/2014



STA. 2151+00 - 2178+50



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WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

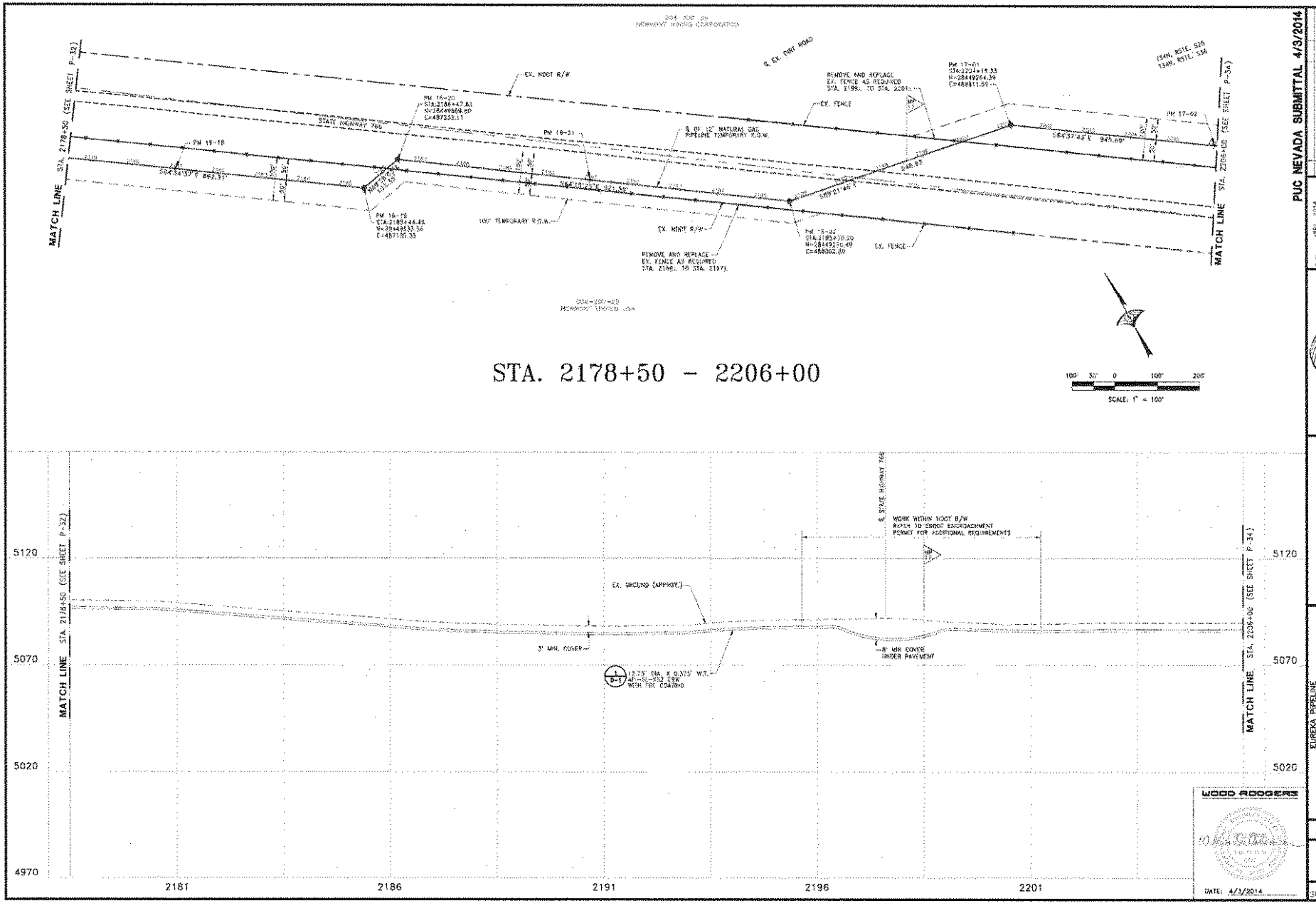
PROJECT NO. 2811.006

DRAWING P-32

SHT 38 OF 47

WOOD RODGERS

DATE: 4/3/2014



PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
5440 Reno Corporate Drive
Reno, NV 89511
Tel: 775.823.4068
Fax: 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

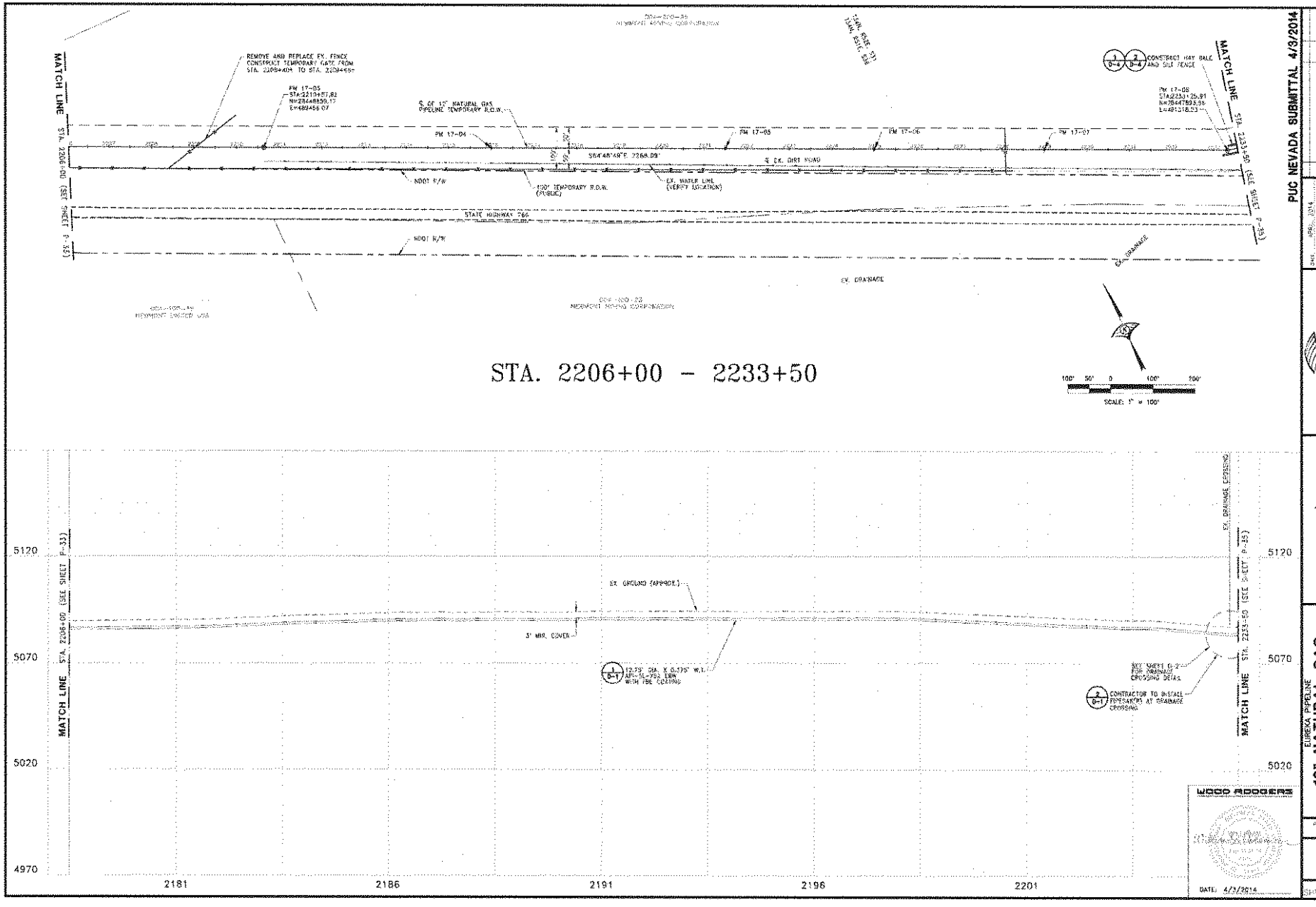
WOOD RODGERS

DATE: 4/3/2014

PROJECT NO. 2811.0008

DRAWING P-33

SHT 39 OF 47



STA. 2206+00 – 2233+50

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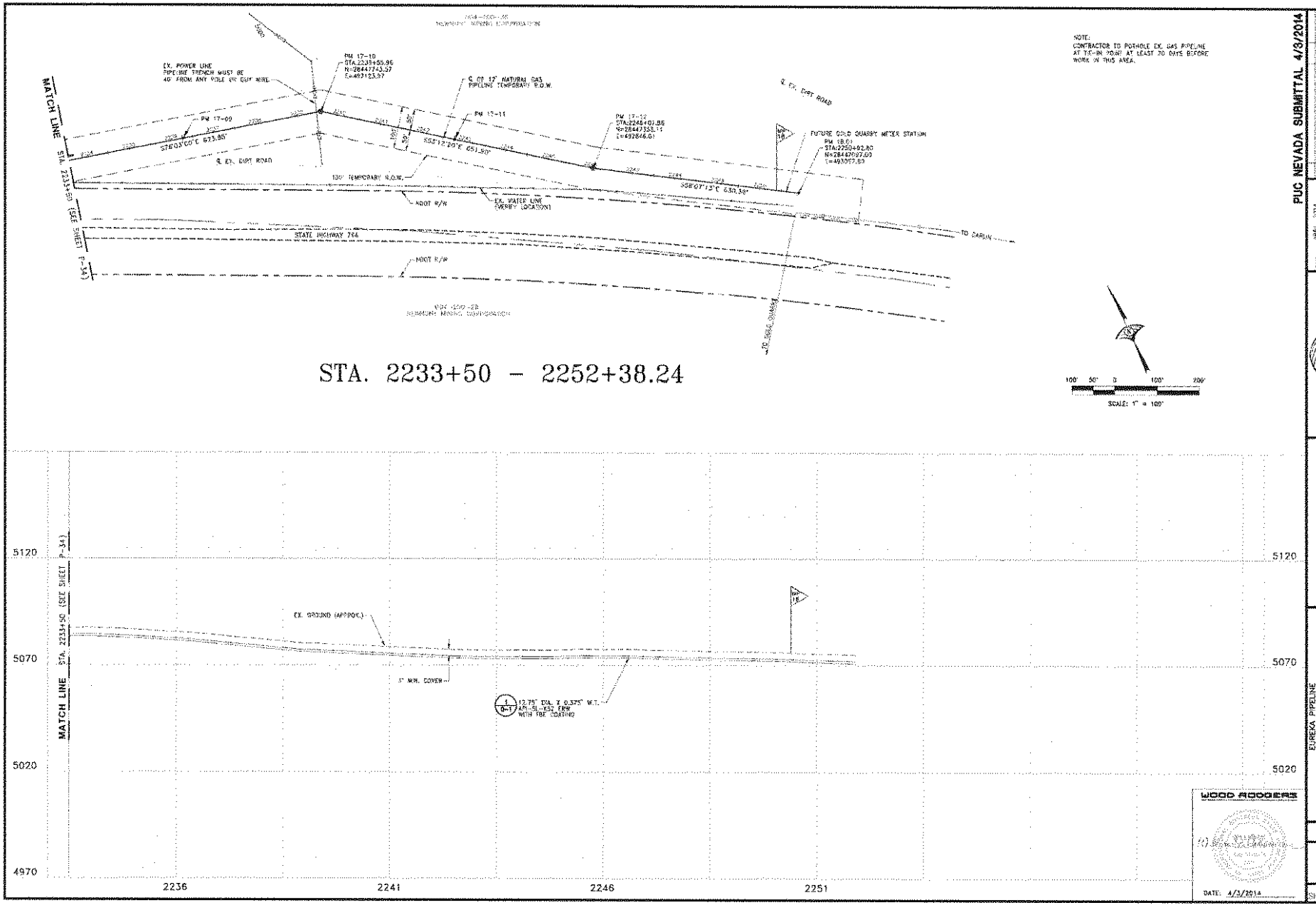
WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

PROJECT NO. 2611.008
DRAWING P-34
SHT 40 OF 47

WOOD RODGERS
DATE: 4/3/2014



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WOOD RODGERS
DESIGN DRIVE
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4066
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

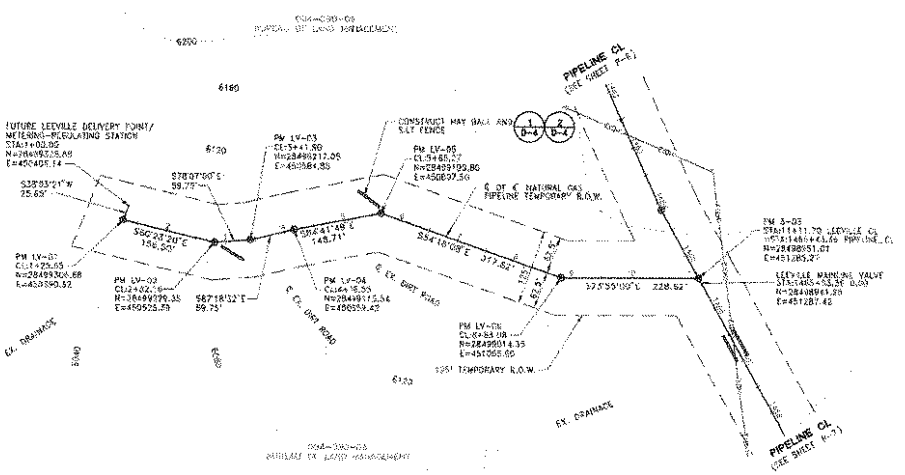
PROJECT NO. 2811.008

DRAWING P-35

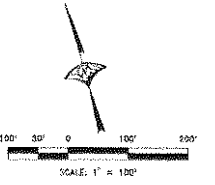
SHT 41 OF 47

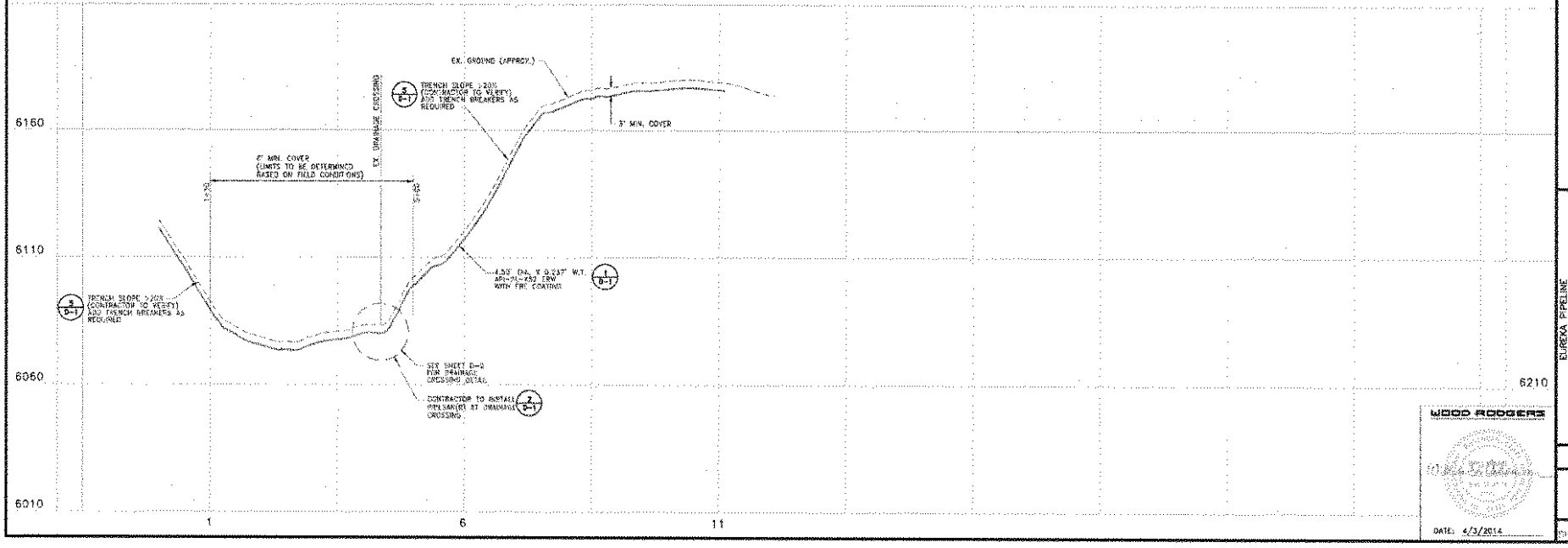
WOOD RODGERS

DATE: 4/3/2014



LEEVILLE CL





PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
PH 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
PLAN AND PROFILE SHEET

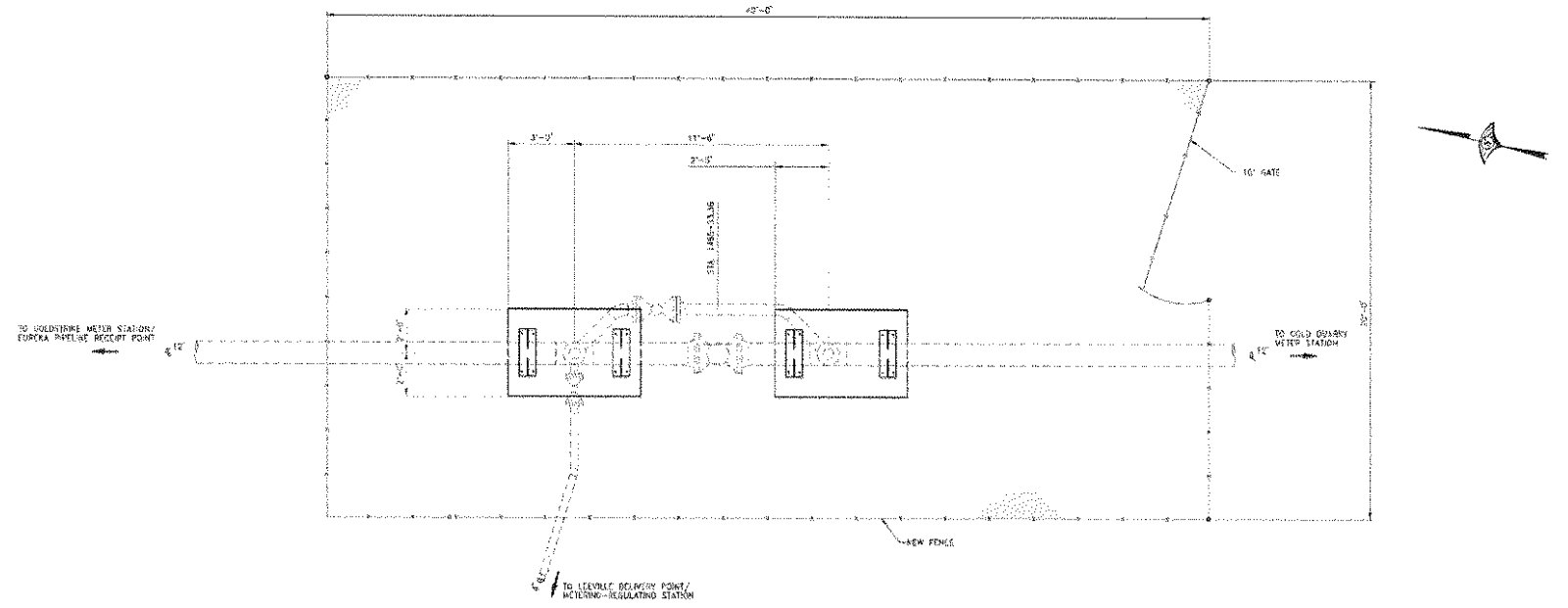
WOOD RODGERS

DATE: 4/3/2014

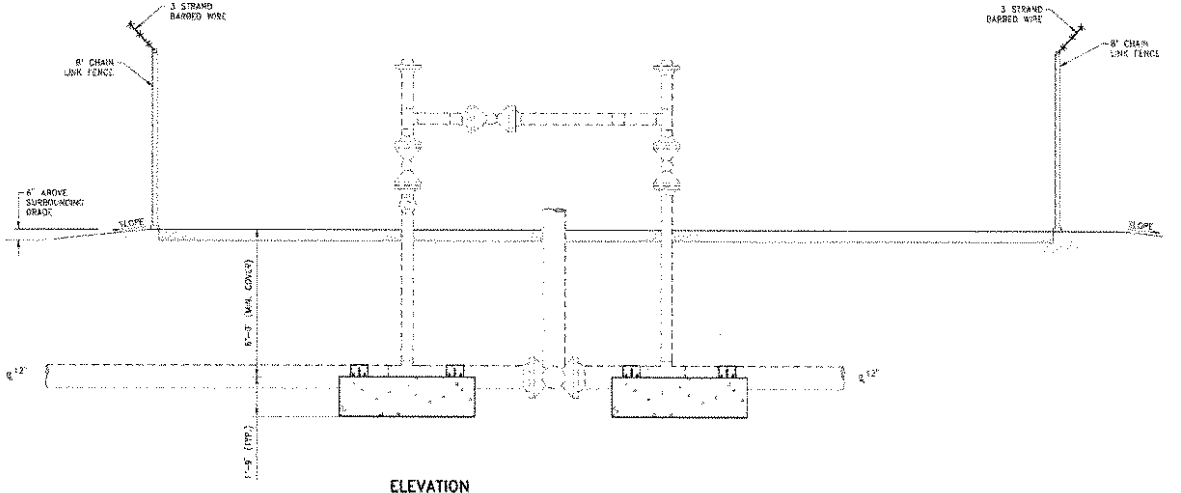
PROJECT NO. 2811.098

DRAWING P-36

SHEET 42 OF 47



PLAN
SCALE: 3/16"=1'-0"



ELEVATION
SCALE: 3/16"=1'-0"

PUC NEVADA SUBMITTAL 4/3/2014

WOOD RODGERS

DATE: 4/3/2014

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
LEEVILLE MAINLINE VALVE SECTIONS & DETAILS

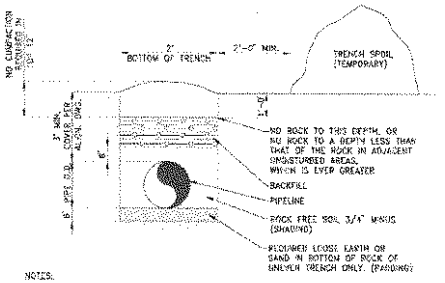
PROSPECTOR PIPELINE COMPANY

WOOD RODGERS
Wood Rodgers, Inc.
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROJECT NO.
2811.008

DRAWING
C-1

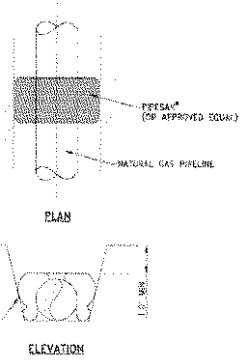
SHT 43 OF 47



NOTES:

1. EXCESS SPOIL RESULTING FROM EXCAVATION TO BE STOCKPILED AS DIRECTED BY ENGINEER OR THEIR REPRESENTATIVE.
2. PROVIDE ADDITIONAL COVER AND CLEARANCES WHEN SPECIFIED ON PLAN AND PROFILE SHEETS.
3. CONTRACTOR SHALL PLACE BACKFILL MATERIAL IN 12" MAX. LOOSE LIFTS AND COMPACT WITH SHEEPSFOOT, 3 PASSES EACH WAY.
4. ALL DISTURBED AREAS WITHIN THE LIMITS OF THE EASEMENT ARE TO BE SCARIFIED TO A DEPTH OF 12" PRIOR TO REVEGETATION WORK.
5. ALL CLEARED/GRUBBED VEGETATION IS TO BE WINDROWED, AND ALL UNEARTHED STONES AND BOULDERS NOT ACCEPTABLE FOR TRENCH PLACEMENT ARE TO BE LEFT ON THE EDGE OF THE TRENCH RIP WITHIN THE TEMPORARY CONSTRUCTION R.O.W. UPON COMPLETION OF THE BACKFILL OPERATION THE CONTRACTOR SHALL RIP THE TOP 12" OF THE DISTURBED AREA WITHIN THE TEMPORARY EASEMENT. FOLLOWING REVEGETATION, THE GENERAL CONTRACTOR IS TO MAKE ONE PASS IN EACH DIRECTION AND REDISTRIBUTE THE ROCK AND WINDROWED VEGETATION.

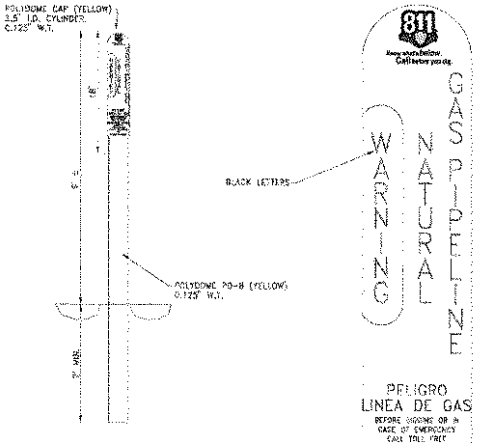
1 D-1 TRENCH AND BACKFILL REQUIREMENTS
N.T.S.



NOTES:

1. PIPESAK® QUALITY AND SPACING TO BE FIELD DETERMINED BY THE OWNER OR ITS REPRESENTATIVE. INSTALLATION SHALL BE PER MANUFACTURERS REQUIREMENTS.

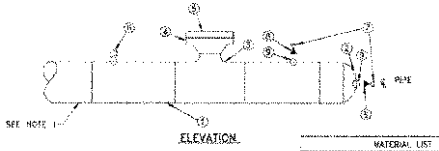
2 D-1 PIPESAK® GEOTEXTILE FABRIC WEIGHT OR APPROVED EQUAL
N.T.S.



NOTES:

1. LINE MARKERS SHALL COMPLY WITH SECTION 193.707 OF TITLE 49 PART 192 CFR.
2. LINE MARKERS SHALL BE POLYDOME PD-8 BY ADP INTERNATIONAL ARLINGTON, TX., OR APPROVED EQUAL.
3. SEE DETAIL FOR POLYDOME TEXT.
4. LINE MARKER SPACING SHALL BE 500 LF MAX AND AT ANGLE POINTS. LINE-OF-SIGHT BETWEEN MARKERS SHALL BE MAINTAINED, WHICH MAY REQUIRE MARKER SPACING OVER HILLS IN STEEP TERRAIN. LINE MARKERS SHALL BE LOCATED DIRECTLY OVER THE CENTERLINE OF THE PIPELINE.

3 D-1 PIPELINE MARKER
N.T.S.



ELEVATION

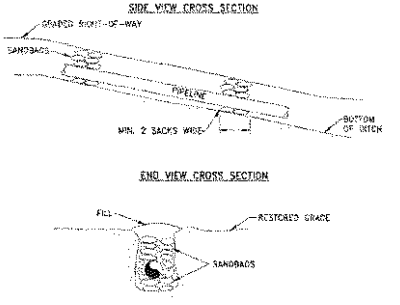
NOTES:

1. CONTRACTOR TO CUT TESTING SECTION HERE.
2. CONTRACTOR TO FURNISH VALVES, FITTINGS, BOLTS AND GASKETS AS REQ'D FOR HYDROSTATIC TESTING.
3. FILLING FLANGE TO HAVE CONNECTION FOR POSITIVE DISPLACEMENT TEST PUMP AND PRESSURE RECORDING DEVICES. (ITEM NO. 8)

MATERIAL LIST

ITEM	QTY.	DESCRIPTION
1	10 FT.	12" STD WT STEEL PIPE
2	1	12" STD WT WELD CAP
3	1	12"x6" STD WT WELD "TEE"
4	1	6" BLOW DOWN TEE
5	1	6" BLOW OFF BEND
6	1	PIG-SAF (NO-GAS ENDICATOR)
7	2	6" BORE, SOLID STEEL GATE VALVE
8	1	SCH. 80 NIPPLE, 6" LG. TOE
9	2	12"x6" COUPLING, WELDOLET

4 D-1 TESTING BULL PLUG
N.T.S.

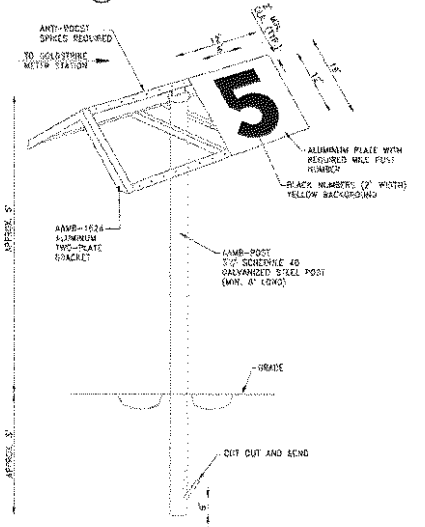


REQUIRED SPACING FOR TRENCH BREAKERS	
SLOPE PERCENT	SPACING (FT.)
20-30	300
30+	100

NOTES:

1. TRENCH BREAKERS LOCATION AND SPACING TO BE FIELD DETERMINED BY THE OWNER OR THEIR REPRESENTATIVE.
2. CONSTRUCTION ON SLOPING TERRAIN AND ADJACENT TO WATERCOURSES AND DRAINAGE AS REQUIRED/DETERMINED IN FIELD.
3. BREAKERS MAY BE COMPOSED OF SANDBAGS OR OTHER APPROVED MATERIAL (POLYURETHANE FOAM, ETC.).
4. MINIMUM 12 INCHES COVER OVER SANDBAGS IN ALL CASES AND MUST BE A MINIMUM OF 2 SACKS WIDE.
5. TOPSOIL SHALL NOT BE USED TO FILL SACKS.
6. CONTRACTOR IS ADVISED THAT ALL SLOPES GREATER THAN OR EQUAL TO 20% MAY NOT BE SHOWN ON THE DRAWINGS.

5 D-1 TYPICAL TRENCH BREAKERS
N.T.S.



NOTES:

1. MILEPOST MARKERS SHALL BE OFFSET 5' ± FROM ℄.
2. AERIAL MARKER PLATES SHALL BE 12" X 18" ALUMINUM BY ADP INTERNATIONAL ARLINGTON, TX., OR APPROVED EQUAL. SINGLE DIGIT MILE MARKERS SHALL BE PRECEDED AND FOLLOWED BY A BLANK HALF PLATE.
3. AERIAL MARKER MOUNTING BRACKETS SHALL BE AMMB-1624 BY ADP INTERNATIONAL ARLINGTON, TX., OR APPROVED EQUAL.

8 D-1 PIPELINE MILEPOST MARKER
N.T.S.

WOOD RODGERS

DATE: 4/3/2014

WOOD RODGERS
ENGINEERING INNOVATIVE DESIGN SOLUTIONS
3440 Roke Corporate Drive Tel 775.823.4068
Reno, NV 89511 Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
DETAILS

PROJECT NO. 2811.008

DRAWING D-1

SHEET 44 OF 47

PLAN
NOT TO SCALE

NOTES:

VEGETATION BUFFER WILL BE MAINTAINED BETWEEN THE BANK AND TWS. THE MINIMUM REQUIRED SETBACK FOR SPOIL PILE IS 10 FEET FROM THE TOP OF THE BANK.

WEED-FREE STRAW BALES, SAND BAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY AT THE EDGE OF EQUIPMENT BRIDGE.

TYPICAL DRY WATERBODY CROSSING

CROSS SECTION FOR TRENCH FLUMING

NOTES:

A 10' VEGETATION BUFFER WILL BE MAINTAINED BETWEEN THE BANK AND TWS. THE MINIMUM REQUIRED SETBACK FOR SPOIL PILE IS 10 FEET FROM THE TOP OF BANK.

EQUIPMENT BRIDGE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.

WEED-FREE STRAW BALES, SAND BAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY AT THE EDGE OF EQUIPMENT BRIDGE.

TYPICAL DRY WATERBODY CROSSING – FLUMED

TYPICAL HORIZONTAL DIRECTIONAL DRILLING (HDD) PROCESS

A = DRILL RIG
B = DRILLER'S CONSOLE
C = GENERATOR
D = DRILL PIPE
E = CRANE
F = PARTS VAN
G = MUD CLEANING UNIT
H = MUD MIXING TANK
I = MUD PUMPS
J = MUD PIT
K = FRAC TANKS
L = DRILLING MUD (PALLETS)
M = PARKING
N = OFFSET TRAILER

DETAIL "A"
N.T.S.

A = EXIT
B = LIFT
C = WELD
D = PIT
E = MUD
F = GENE
G = FRAC

DETAIL "B"
N.T.S.

NOTES:

EXACT CONFIGURATION OF ENTRY (RIGSIDE) AND EXIT (PIPESIDE) WORKSPACE LAYOUT TO BE DETERMINED IN FIELD BY HDD CONTRACTOR. SEE PLAN AND PROFILE SHEETS FOR LIMITS.

WORKSPACE AREA FOR ENTRY AND EXIT TO BE CONTAINED WITHIN THE TEMPORARY CONSTRUCTION R/W EASEMENT.

TYPICAL WORKSPACE LAYOUT HORIZONTAL DIRECTIONAL DRILLING (HDD) METHOD

WOOD RODGERS

DATE: 4/3/2014

NO.	DESCRIPTION	APPR.	DATE
	ISSUED FOR CONSTRUCTION		

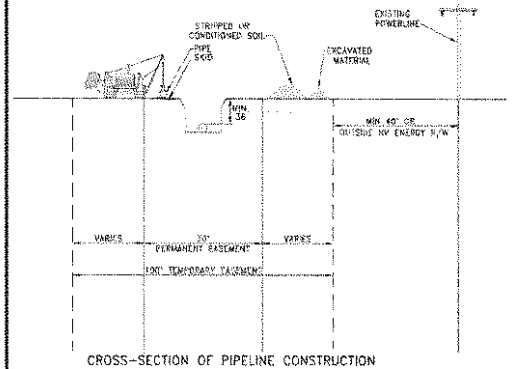
DATE: APRIL 2014
SCALE: AS SHOWN
DRAWN BY:
DESIGNED BY:
CHECKED BY:

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
5440 Reno Corporate Drive, Reno, NV 89511
Tel 775.823.4068 Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE DETAILS

PROJECT NO. 2811.008
DRAWING D-2
SH 45 OF 47



CROSS-SECTION OF PIPELINE CONSTRUCTION
PUBLIC LANDS RIGHT-OF-WAY
WORKING SIDE ADJACENT TO EXISTING POWERLINE

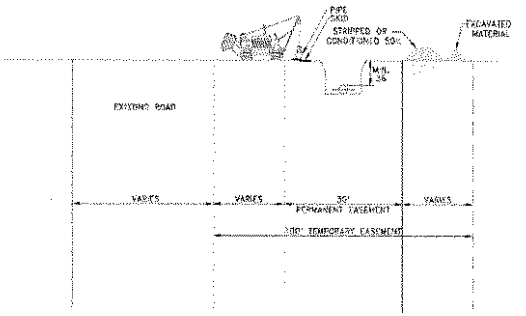
NOTES:

PIPELINE WILL BE INSTALLED UNDER DOT-TITLE 49 CFR PART 192, BLM ENVIRONMENT ASSESSMENT, NEVADA ADMINISTRATIVE CODE (PUC NEVADA).

PERMANENT PIPELINE R/W EASEMENT WIDTH IS 30'. PLACEMENT OF THE PERMANENT EASEMENT WITHIN THE TEMPORARY CONSTRUCTION R/W EASEMENT TO BE FIELD DETERMINED.

TEMPORARY CONSTRUCTION R/W EASEMENT WIDTH IS 100'. TEMPORARY CONSTRUCTION EASEMENT TO BE FIELD DETERMINED.

STRIPPED OR CONDITIONED TOPSOIL IS TO BE SEGREGATED AND STOCKPILED WITHIN THE TEMPORARY R/W EASEMENT. ALL LAND SURFACES DISTURBED DURING CONSTRUCTION WOULD BE RECLAIMED AND SEEDED IN ACCORDANCE WITH THE RECLAMATION PLAN.



CROSS-SECTION OF PIPELINE CONSTRUCTION
PUBLIC LANDS RIGHT-OF-WAY
WORKING SIDE ADJACENT TO EXISTING ROAD

NOTES:

PIPELINE WILL BE INSTALLED UNDER DOT-TITLE 49 CFR PART 192, BLM ENVIRONMENT ASSESSMENT, NEVADA ADMINISTRATIVE CODE (PUC NEVADA).

PERMANENT PIPELINE R/W EASEMENT WIDTH IS 100'. PLACEMENT OF THE PERMANENT EASEMENT WITHIN THE TEMPORARY CONSTRUCTION R/W EASEMENT TO BE FIELD DETERMINED.

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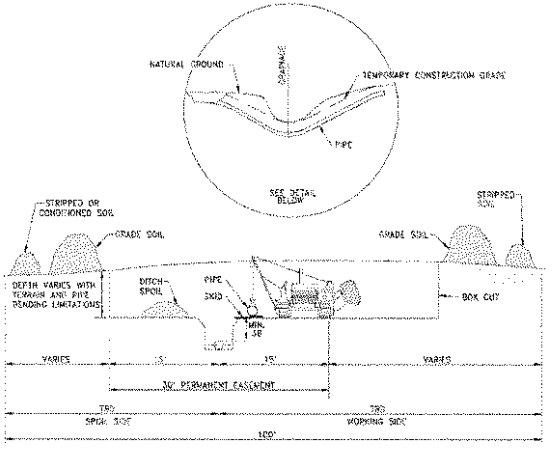
TYPICAL PIPELINE CONSTRUCTION PUBLIC LANDS ADJACENT TO POWERLINE



NOTES:

PIPELINE WILL BE INSTALLED UNDER DOT-TITLE 49 CFR PART 192, BLM ENVIRONMENT ASSESSMENT, NEVADA ADMINISTRATIVE CODE (PUC NEVADA).

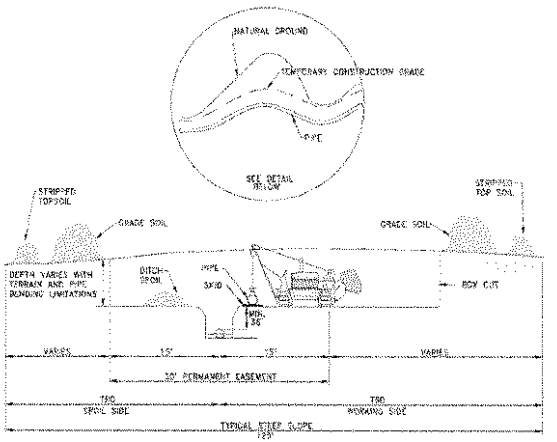
PERMANENT PIPELINE R/W EASEMENT WIDTH IS 100'. PLACEMENT OF THE PERMANENT EASEMENT WITHIN THE TEMPORARY CONSTRUCTION R/W EASEMENT TO BE FIELD DETERMINED.

TEMPORARY CONSTRUCTION R/W EASEMENT WIDTH IS 100'. TEMPORARY CONSTRUCTION EASEMENT TO BE FIELD DETERMINED.

STRIPPED OR CONDITIONED TOPSOIL IS TO BE SEGREGATED AND STOCKPILED WITHIN THE TEMPORARY R/W EASEMENT. ALL LAND SURFACES DISTURBED DURING CONSTRUCTION WOULD BE RECLAIMED AND SEEDED IN ACCORDANCE WITH THE RECLAMATION PLAN.

CROSS SECTION OF PIPELINE CONSTRUCTION RIGHT-OF-WAY BANKS OF TYPICAL DRAINAGE

TYPICAL PIPELINE CONSTRUCTION PUBLIC LANDS ADJACENT TO EXISTING ROAD



NOTES:

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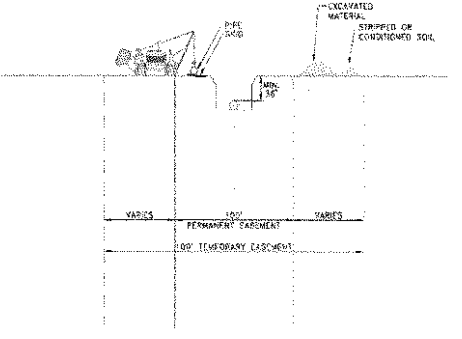
PERMANENT PIPELINE R/W EASEMENT WIDTH IS 100'. PLACEMENT OF THE PERMANENT EASEMENT WITHIN THE TEMPORARY CONSTRUCTION R/W EASEMENT TO BE FIELD DETERMINED.

TEMPORARY CONSTRUCTION R/W EASEMENT WIDTH IS 100'. TEMPORARY CONSTRUCTION EASEMENT TO BE FIELD DETERMINED.

STRIPPED OR CONDITIONED TOPSOIL IS TO BE SEGREGATED AND STOCKPILED WITHIN THE TEMPORARY R/W EASEMENT. ALL LAND SURFACES DISTURBED DURING CONSTRUCTION WOULD BE RECLAIMED AND SEEDED IN ACCORDANCE WITH THE RECLAMATION PLAN

CROSS SECTION OF PIPELINE CONSTRUCTION RIGHT-OF-WAY STEEP SLOPE (>20%)



NOTES:

PIPELINE WILL BE INSTALLED UNDER DOT-TITLE 49 CFR PART 192, BLM ENVIRONMENT ASSESSMENT, NEVADA ADMINISTRATIVE CODE (PUC NEVADA).

PERMANENT PIPELINE R/W EASEMENT WIDTH IS 100'. PLACEMENT OF THE PERMANENT EASEMENT WITHIN THE TEMPORARY CONSTRUCTION R/W EASEMENT TO BE FIELD DETERMINED.

TEMPORARY CONSTRUCTION R/W EASEMENT WIDTH IS 100' TEMPORARY CONSTRUCTION EASEMENT TO BE FIELD DETERMINED.

STRIPPED OR CONDITIONED TOPSOIL IS TO BE SEGREGATED AND STOCKPILED WITHIN THE TEMPORARY R/W EASEMENT. ALL LAND SURFACES DISTURBED DURING CONSTRUCTION WOULD BE RECLAIMED AND SEEDED IN ACCORDANCE WITH THE RECLAMATION PLAN.

TYPICAL PIPELINE CONSTRUCTION PUBLIC LANDS OPEN FLAT COUNTRY

WOOD RODGERS

DATE: 4/3/2014

DATE: APRIL, 2014
SCALE: AS SHOWN
DRAWN BY:
DESIGNED BY:
CHECKED BY:

WOOD RODGERS
DESIGNING INNOVATIVE SOLUTIONS
5440 Reno Corporate Drive
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

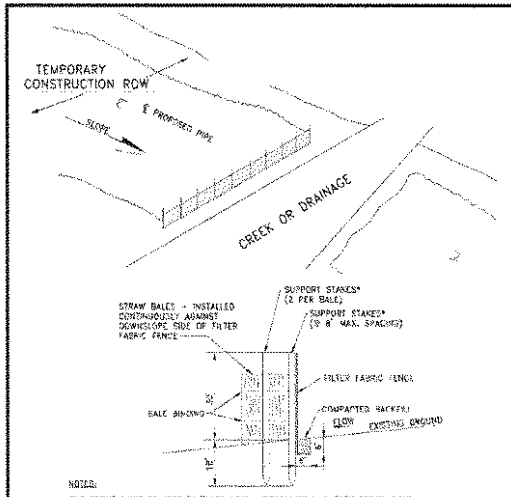
PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
DETAILS

PROJECT NO.
2011.008

DRAWING
D-3

SHEET 46 OF 47



NOTES:

SILT FENCE MUST BE LEFT IN PLACE UNTIL VEGETATION HAS BEEN ESTABLISHED.

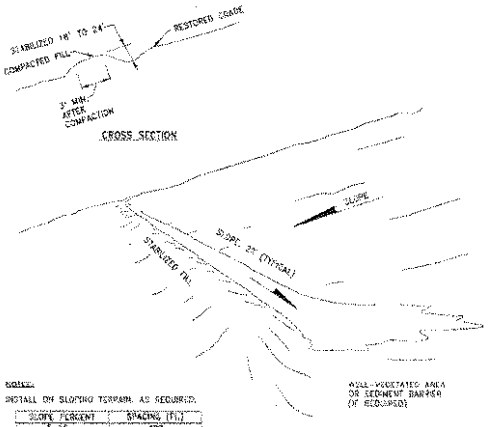
INSTALL PERMANENT WATERBARS UPSLOPE AS REQUIRED.

INSTALL PERMANENT TRENCH BREAKERS AS REQUIRED.

FILTER FABRIC FENCE MUST BE INSTALLED AT EXISTING LEVEL GRADE.

SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.

TYPICAL SILT FENCE INSTALLATION



NOTES:

INSTALL ON SLOPING TERRAIN AS REQUIRED.

SLOPE PERCENT	SPACING (FT.)
2 - 5	300
5 - 10	200
10 - 20	100
20+	100

MAINTAIN THROUGHOUT CONSTRUCTION AND REPAIR AT THE END OF EACH DAY.

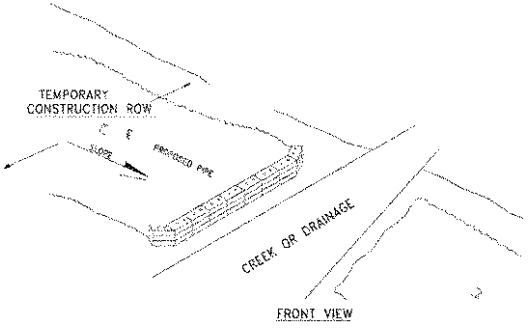
OUTLET INTO AREAS STABILIZED BY EXISTING VEGETATION OR INSTALL STAKED STRAW BALES/SILT FENCE.

CONTOUR TO ALLOW PASSAGE OF CONSTRUCTION EQUIPMENT.

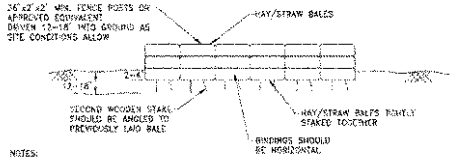
MINIMUM 2% LATERAL SLOPE.

TEMPORARY WATER BARS/TERRACES MUST BE DESIGNED TO PREVENT WATER FROM ENTERING THE TRENCH. A SOFT/HARD PLUG MAY BE USED TO ALLOW A CONTINUOUS WATER BAR/TERRACE TO CROSS THE TRENCHLINE.

TYPICAL PERMANENT WATER BARS OR TERRACES



FRONT VIEW



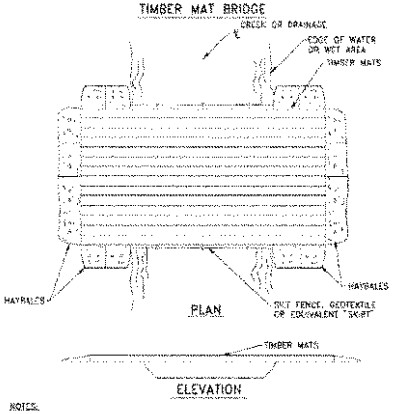
NOTES:

HAY/STRAW BALES TO BE EMBEDDED 2" MIN. INTO GROUND AS SITE CONDITIONS ALLOW.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVEGROUND HEIGHT OF THE BARRIER.

HAY/STRAW BALES REMOVED FOR ACCESS PURPOSES DURING THE DAY MUST BE REINSTALLED AFTER THE CONSTRUCTION ACTIVITY HAS PASSED THROUGH OR BY THE END OF THE DAY.

TYPICAL HAY/STRAW BALE INSTALLATION



NOTES:

BRIDGE WILL BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE FOR CROSSING.

BRIDGE TO REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.

SILT FENCE, WEED FREE STRAW BALES, SAND BAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EXCLUSION CONTROL MAY BE USED INTERCHANGEABLY.

A "SKIRT" FORMED OF SILT FENCE, GEOTEXTILE FABRIC OR EQUIVALENT SHALL BE PLACED ON THE SIDES AND BOTTOM OF THE BRIDGES TO TRAP SEDIMENT AS NECESSARY.

INDIVIDUAL MATS SHALL BE ANCHORED AND BUTTED TIGHTLY TO MINIMIZE THE INTRODUCTION OF SEDIMENT TO THE WATERBODY.

STRAW BALES OR APPROPRIATE BARRIER WILL BE PLACED AT THE EDGE.

TYPICAL MAT BRIDGE EQUIPMENT CROSSING

WOOD RODGERS

DATE: 4/3/2014

DATE: APRIL 2014
SCALE: AS SHOWN
DRAWN BY:
DESIGNED BY:
CHECKED BY:

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
5440 Kietzke Lane Suite 200
Reno, NV 89511
Tel 775.823.4068
Fax 775.823.4066

PROSPECTOR PIPELINE COMPANY

EUREKA PIPELINE
12" NATURAL GAS PIPELINE
DETAILS

PROJECT NO.
2811.008

DRAWING
D-4

SHEET 47 OF 47

EXHIBIT E

ALTERNATIVE ALIGNMENTS

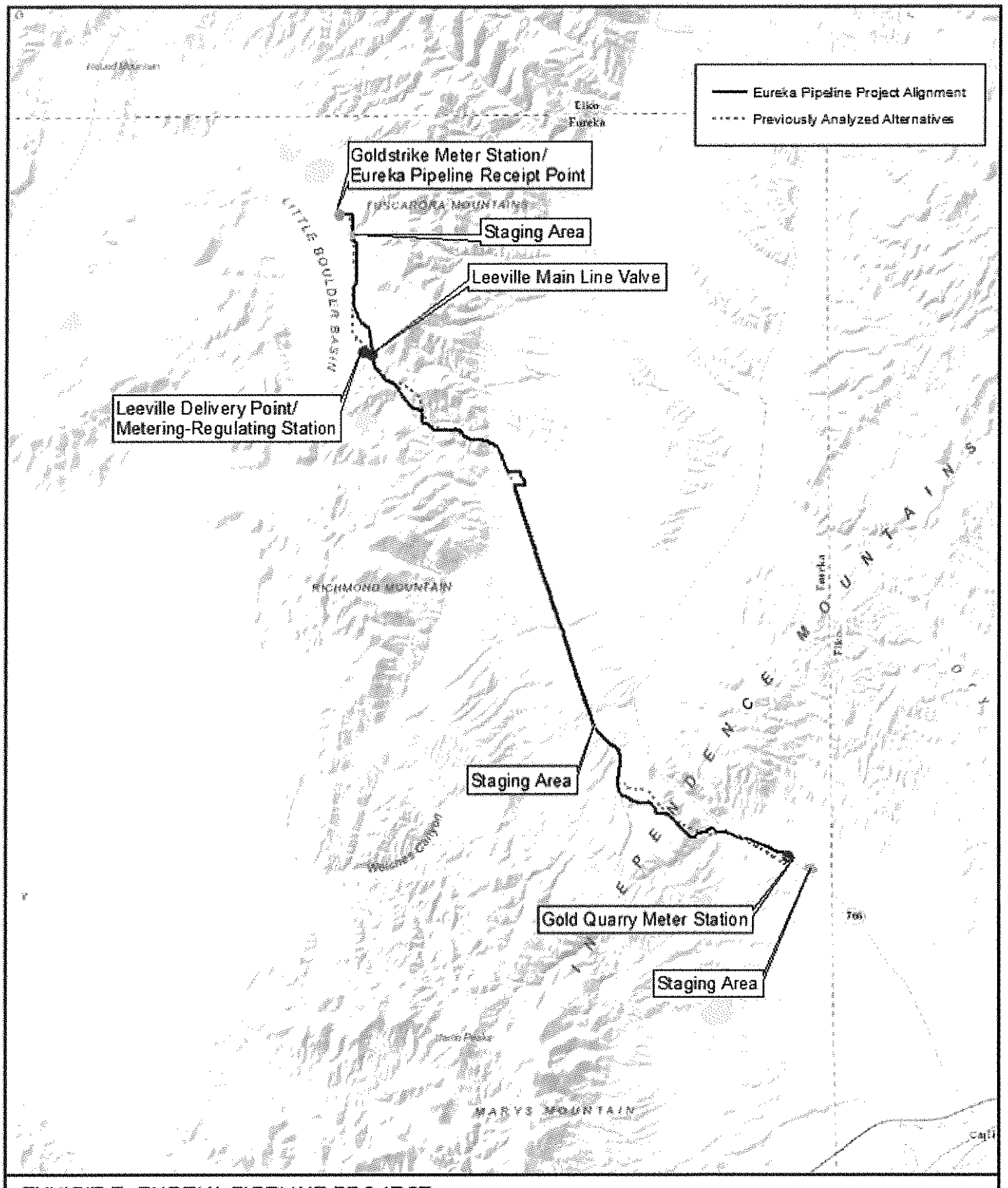


EXHIBIT E- EUREKA PIPELINE PROJECT
ALTERNATIVE ALIGNMENTS
NAC 703.423(2)(d)
APRIL, 2014

NORTH

0 1 2
Miles

NOTES:
OWNERSHIP: BLM
BACKGROUND SOURCES:
ESRI, DELORME, USGS,
NPS
SOURCES: ESRI, USGS,
NOAA

EXHIBIT F

BLM ENVIRONMENTAL ASSESSMENT,

BLM DRAFT FINDING OF NO SIGNIFICANT IMPACT, AND

CLASS III CULTURAL RESOURCES INVENTORY REPORT

United States Department of the Interior
Bureau of Land Management

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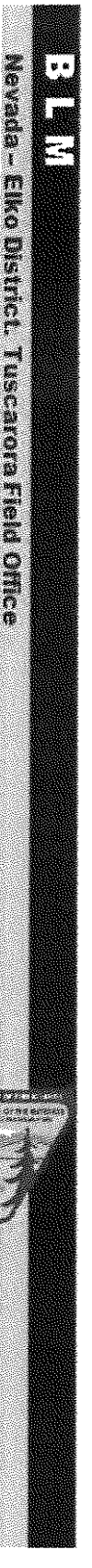

Eureka Pipeline Project
ENVIRONMENTAL ASSESSMENT

File Number: NVN-092048

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BLM Mission Statement

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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1.0 INTRODUCTION

The Tuscarora Field Office (Elko District) of the U.S. Department of Interior, Bureau of Land Management (BLM) received an application in April 2013 for a grant of Rights-of-Way (ROW) on public land to accommodate a proposed natural gas pipeline. Prospector Pipeline Company (PPC) proposes to construct and operate an approximate 18± mile underground natural gas pipeline, to supply natural gas from the North Elko Pipeline for delivery to the Newmont Leeville (3.1 miles) and Gold Quarry (14.8 miles) Mines. The pipeline, referred to as the Eureka Pipeline Project (EPP), would be located on BLM and private lands in Eureka County, Nevada. The proposed route of the pipeline is shown in Figure 1-1.

1.1 Purpose and Need

PPC's purpose would be to convey natural gas from the North Elko Pipeline Goldstrike Meter Station for delivery to the Newmont Leeville Mine to replace current propane usage, and to the Newmont Gold Quarry Mine to provide a reliable supply of natural gas and to eliminate the need for current seasonal propane usage. The project would improve energy efficiency, reduce emissions, enhance safety, and provide substantial operational cost savings for the Leeville and Gold Quarry mining operations.

The BLM's purpose and need would be to process, review, and respond to PPC's proposed pipeline under applicable laws and regulations including the Federal Land Management Policy Act of 1976, the Mineral Leasing Act of 1920, the National Environmental Policy Act (signed January 1, 1970), and the BLM's regulations concerning Rights-of-Way at 43 CFR 2800 and 43 CFR 2880. Should BLM determine that a grant authorization would be appropriate in these circumstances, the BLM must also determine what, if any, stipulations, conditions of approval, and performance bonds should be attached to the grant. Should a grant be authorized then the BLM's purpose and need becomes an obligation to ensure compliance with applicable laws and requirements during construction and operation, avoidance of undue and unnecessary degradation of the public lands during and following the project lifespan, and to ensure adequate stabilization of the public lands for future productivity.

The decision to be made by the BLM's Tuscarora Field Office would be whether or not to authorize a Rights-of-Way grant on public lands for the proposed pipeline and, if authorized, what, if any, stipulations and conditions of approval should be attached to the grant.

1.2 Relationship to Laws, Policies, and Land Use Plans

1.2.1 Federal Laws and Regulations, Federal Land Use Plan Conformance

This EA has been prepared in compliance with the following statutes and implementing regulations, policies, and procedures:

- The National Environmental Policy Act of 1969, as amended (Public Law [PL] 91-190, 42 U.S.C. 4321 (et seq.);
- BLM NEPA Handbook (H-1790-1, 2008);
- The Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.);

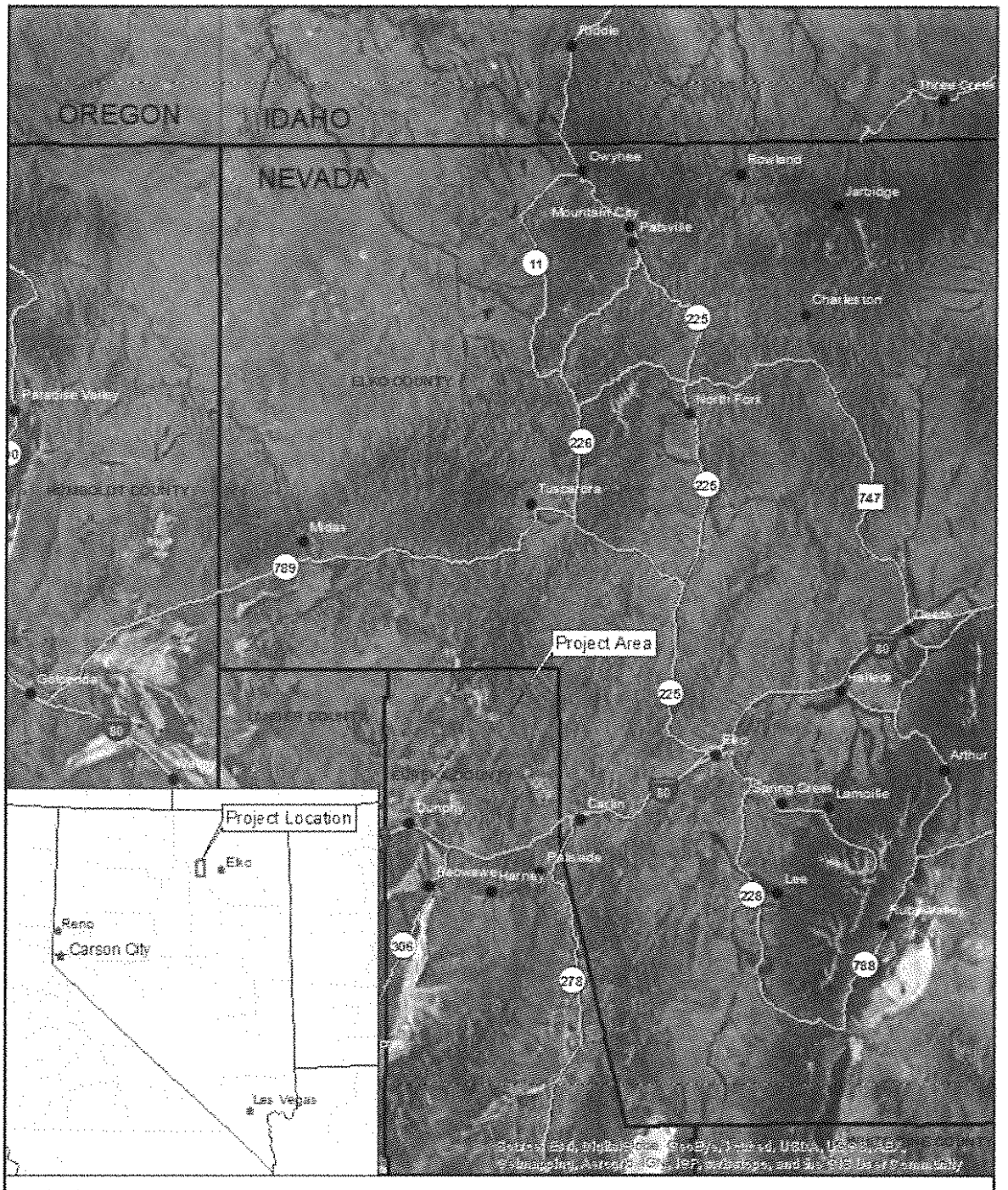

FIGURE 1-1. PROJECT LOCATION
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- The Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761 et seq.);
- 43 CFR 2800, Rights-of-Way under the Federal Land Policy and Management Act, and 43 CFR 2880, Rights-of-Way under the Mineral Leasing Act; and
- Guidelines contained in the Elko Resource Management Plan (RMP).

1.2.2 State and Local Government Plans and Policies

Specific approvals, permits, and regulatory requirements from state and local agencies would be required for constructing and maintaining the proposed EPP. Table 1 - Potential Regulatory Permits Required lists federal, state, and local permits, policies, and actions that may be required for the EPP. PPC would also comply with the applicable provisions of Nevada Revised Statutes, Chapter 533, regarding water use.

Table 1 - Potential Regulatory Permits Required

Permit Required	Agency	Status
ROW Grant SF 299 Application for Transportation and Utility Systems and Facilities on Federal Lands NEPA	Bureau of Land Management	Application filed: April 29, 2013 Accepted: June 18, 2013 Initiated June 12, 2013 BLM ID Team Scoping Meeting
Utility Environmental Protection Act Permit (UEPA)- Permit to Construct	Public Utilities Commission of Nevada	Initial application filed April 29, 2013
Encroachment Permit	Nevada Department of Transportation District 3	Issued December 9, 2013
Bureau of Air Pollution Control Permit	Nevada Department of Environmental Protection (NDEP)	To be secured by the Prime Contractor as required in the bid documents
National Pollution Discharge Elimination System (NPDES) Permit Notice of Intent (NOI) Application and Stormwater Pollution Prevention Plan (SWPPP)	NDEP Bureau of Water Pollution Control (BWPC)	To be secured by the Prime Contractor as required in the bid documents

1.3 Issues

In response to receipt of a Standard Form 299 Application for Transportation and Utility Systems and Facilities on Federal Lands, the BLM Elko District Tuscarora Field Office hosted an Inter Disciplinary Team Meeting (BLM ID Team) to identify resources and resource uses to be analyzed in accordance with NEPA. Those issues identified included wildlife and wildlife habitat, cultural resources, methods to minimize disturbance to soils and vegetation along the proposed route, access routes, and the expected benefits of the pipeline.

Resources and resource uses that the BLM ID Team determined would not require in-depth analysis included:

Areas of Critical Environmental Concern (ACEC), Environmental Justice, Floodplains (designated by FEMA), Forestry, Grazing and Range Improvements, Noise, Noxious and Invasive Nonnative Plant Species, Prime or Unique Farm Lands, Riparian Habitat, Sensitive Species – Vegetation, Wastes – Hazardous or Solid, Wild and Scenic Rivers, Land with Wilderness Characteristics, Wild Horses and Burros, and Woodland Products.

2. PROPOSED ACTION AND ALTERNATIVES

This chapter describes the proposed action and existing facilities located within the proposed action study area, and presents the alternatives analyzed in this EA (Proposed Action, No Action Alternative as well as Alternative Considered But Eliminated From Further Analysis).

2.1 Proposed Action

2.1.1 Existing Facilities

This section describes the existing facilities relevant to the EPP (Figure 2-1).

North Elko Pipeline Goldstrike Meter Station

The proposed EPP would connect to the North Elko Pipeline at the Goldstrike Meter Station. This facility is located on private property within the Goldstrike Mine complex (Betze/Post and Meikle Mines) and includes a spare parts storage container and an office trailer. Equipment at this existing Meter Station includes above and below ground piping, valves, meters, heaters, instruments, regulators, controls, odorizer, computerized Remote Terminal Units (RTU's), master telemetry via satellite and AT&T broadband backup, a device for the receiving of pipeline pigs, and equipment for the cathodic protection of the pipeline from external corrosion. Power for the equipment at this station is provided through a grid connection at the Goldstrike Mine.

Newmont North Operations

Newmont's North Operations Area lies on the western flank of the Tuscarora Mountains within the Little Boulder Basin. Newmont initiated its mining activities in the North Operations Area at the Carlin open-pit mine in 1965. Newmont's North Operations Area includes all of Newmont's mining operations located between the Carlin and Bootstrap Mines. Operations include Bootstrap, Blue Star, Genesis, and Leeville Mine. The Leeville Mine is located approximately 3.1 miles south of the Goldstrike Meter Station where the EPP would provide a turnout and small regulating/metering station to supply natural gas replacing current propane usage at Leeville Mine.

Newmont South Operations

The South Operations Area is located at the eastern edge of the Tuscarora Mountains in the Maggie Creek Basin northwest of Carlin. Mining activities in the South Operations Area have been ongoing since the Maggie Creek deposit was discovered in 1978. Development of the Gold Quarry Mine and related support facilities was initiated in 1981. The EPP would terminate on the east side of the Gold Quarry Mine, approximately 14.8 miles south of the Leeville Mine, to provide a reliable supply of natural gas and to eliminate the need for current seasonal propane usage.

Nevada Department of Transportation State Route 766

State Route 766 begins in Carlin, Nevada at its intersection with State Route 221. It trends in a northwesterly direction to the Newmont Gold Quarry mine where it then trends in a northeasterly direction within Eureka County. State Route 766 is maintained by the Nevada Department of Transportation District III.

Newmont – Barrick Mine Road

The Newmont-Barrick Mine Road is a private road maintained by Newmont Mining Corporation and Barrick Gold Corporation. It is identified by Eureka County Road Department as a non-County maintained Road 237A and provides access to the Newmont North Operations Area and Barrick's Goldstrike Mine from State Route 766.

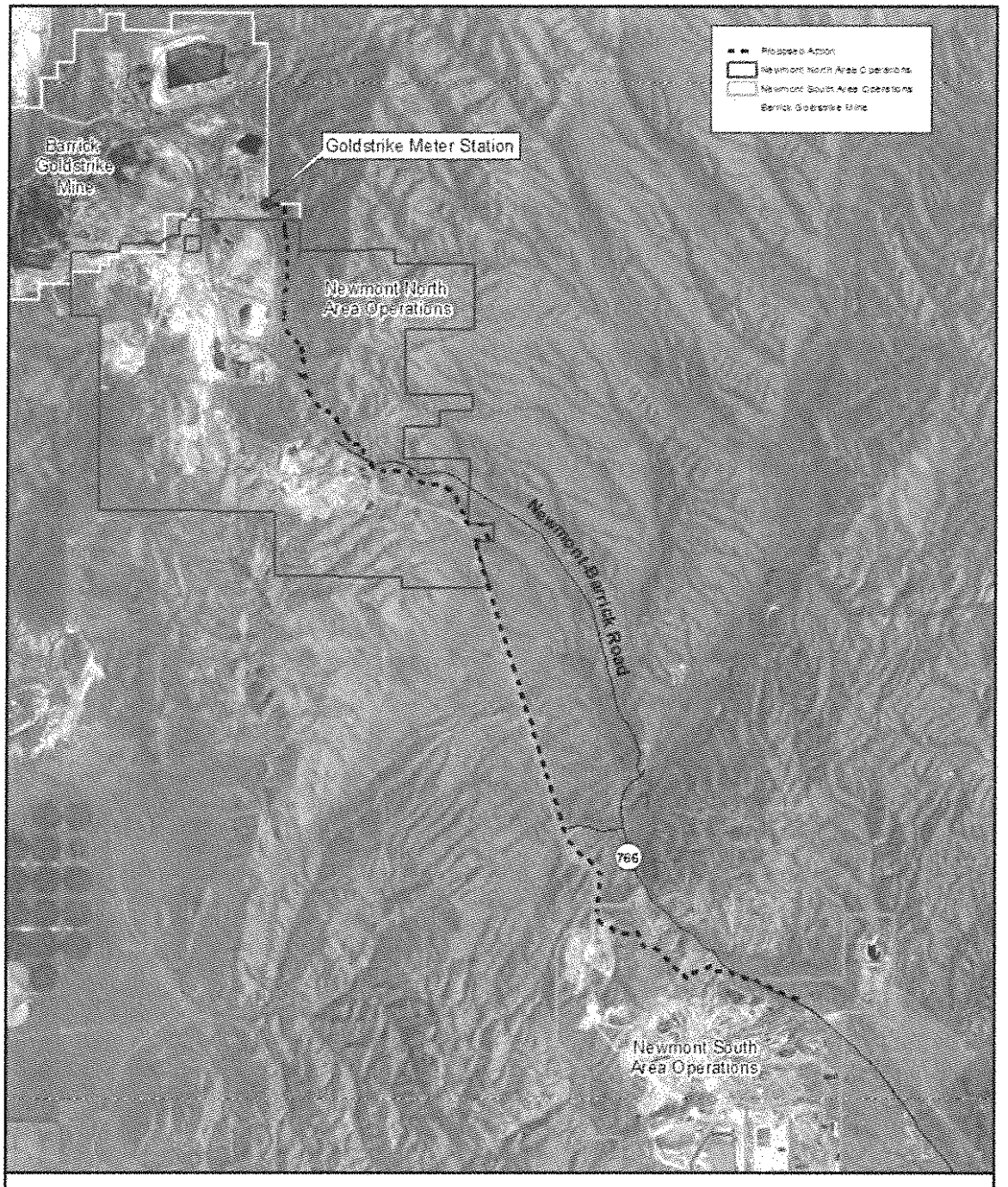

FIGURE 2-1: EXISTING FACILITIES
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NOTES:
PIPELINE: PROSPECTOR PIPELINE
BACKGROUND SOURCE: ESRI, DIGITALGLOBE GEOEYE, I-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

2.1.2 Description of Proposed Action

PPC would design, construct, test, and operate the EPP in accordance with U.S. Department of Transportation (DOT) regulations specified in the Code of Federal Regulations (CFR), at 49 CFR 191, 192, and 199 "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" adopted by the Public Utilities Commission of Nevada pursuant to Nevada Administrative Code 704.460, and administered by the Public Utilities Commission of Nevada. 49 CFR 192 specifies pipeline material and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion, in addition to other design standards. PPC would also be subject to other applicable federal and state regulations, including U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) requirements. These regulations are intended to ensure adequate protection for the public, pipeline workers, contractors, and employees and to prevent natural gas pipeline accidents and failures.

The BLM would require that PPC prepare a Plan of Development (POD) as part of the ROW grant process in accordance with the regulations found at 43 CFR 2884.11. PPC's various construction and stabilization methods described in this EA also would be part of the POD.

Proposed Action:

The EPP is an approximately 18 mile, 12 inch diameter underground natural gas transmission pipeline, located in Eureka County, Nevada, designed and constructed of welded steel, externally-coated, high-pressure line pipe. The EPP would be designed for a Maximum Allowable Operating Pressure (MAOP) of 1440 psig (Pounds per Square Inch Gauge) for consistency with the North Elko Pipeline and the Ruby Pipeline, although the routine operating pressure would be anticipated to range between 400 and 1,250 psig. The EPP operating pressure would be maintained due to pressures on the North Elko Pipeline and the Ruby Pipeline, so no compressor stations would be needed for the operation of the EPP.

The EPP would begin at the existing Goldstrike Meter Station which is located on private property within the Barrick Goldstrike Mine operations boundary. The pipeline alignment would be established within existing disturbance areas to the furthest extent possible (primarily mining activity disturbance) to the Newmont Leeville and Gold Quarry Mines north of Carlin. Please refer to Figure 3-1.1 in Section 3, and Figures 3-1.2 through 3-1.11 in Appendix 1. About 3 miles southeast of the Goldstrike Meter Station is the Leeville Mine. A 4 inch turnout and above ground regulating/metering station would be constructed at the Leeville Mine in order to supply natural gas to that mine. At this same point a 12 inch Main Line Valve (MLV) would be installed in the 12 inch transmission pipeline. From this point the transmission pipeline would extend to the Gold Quarry Mine where a second above ground regulating/metering station would be constructed to supply natural gas to the Gold Quarry Mine. The regulated gas from the Gold Quarry Meter Station would be introduced into the existing Newmont-owned 6 inch pipeline to the millworks at the Gold Quarry Mine.

To protect against external corrosion, in addition to the external coating, the pipeline would be equipped with cathodic protection equipment consisting of buried anodes, test stations, and one or more DC current rectifiers (to be sited at the facilities where a power source would be available). The pipeline would also be equipped with a buried, zinc-ribbon AC mitigation system

where collocated adjacent to existing power lines. The pipeline location would be adequately identified with surface pipeline markers post-construction in accordance with US DOT CFR Title 49, Part 192.707.

The three above-ground facilities would receive natural gas from the EPP, provide safety and maintenance isolation, and deliver natural gas to the Leeville Mine and the Gold Quarry Mine. The three facilities, shown on Figure 2-2, are described below.

Leeville Regulating/Metering Station:
The Leeville Regulating/Metering Station would be similar to, but substantially smaller than, the existing Goldstrike Meter Station. It will be located on public land just off the main line using remotely controlled and monitored equipment to control the flow of gas through the station. Equipment may include, but not necessarily be limited to, valves, meters, heaters, instruments, regulators, controls, computerized RTU's, master telemetry via either satellite or other commercial means, and any equipment for the cathodic protection of the station from external corrosion. The metering station and its appurtenances would be within an area approximately 10,000 square feet in size (100 feet wide by 100 feet long for a total of approximately 0.23 acre). Power for the equipment at this station would either be from the Leeville Mine's existing electrical infrastructure or generated onsite using natural gas through thermoelectric, thermoelectric/solar hybrid, or fuel cell technology. Newmont will determine if additional fencing of the station is necessary.

Leeville Main Line Valve (MLV):
The Leeville MLV would be located on public land several hundred feet downstream of the Leeville Regulating/Metering Station. The MLV and its appurtenances would be within a fenced enclosure approximately 800 square feet in size (20 feet wide by 40 feet long for a total of approximately 0.02 acres) and would be equipped to remotely monitor the pressure of gas through the pipeline and enable the automatic, rapid shutdown and isolation of the upstream and downstream portions of the EPP in the unlikely event of an emergency. This isolation valve would also be activated during the course of normal maintenance activity. Solar panels and/or thermoelectric generation would be used as the power source at this location. The station would be fenced for security.

Gold Quarry Meter Station:
This facility would be located within Newmont's Gold Quarry Mine property on private land, and would be equipped with gas conditioning, regulating and measurement equipment. This station and its appurtenances would be within a fenced enclosure approximately 20,000 square feet in size (100 feet by 200 feet for a total of approximately 0.46 acres) to accommodate the station piping equipment and appurtenances needed for the safe, efficient delivery of natural gas to the Gold Quarry Mine. Such equipment may include, but not necessarily be limited to, valves, meters, heaters, instruments, regulators, controls, computerized RTU's, master telemetry via either satellite or other commercial means, a device for the receiving of pipeline pigs, and any equipment for the cathodic protection of the pipeline from external corrosion. Power for the equipment at this station would either be from the Gold Quarry Mine's existing electrical infrastructure or generated onsite using natural gas through thermoelectric, thermoelectric/solar hybrid, or fuel cell technology. The station would be fenced for security.

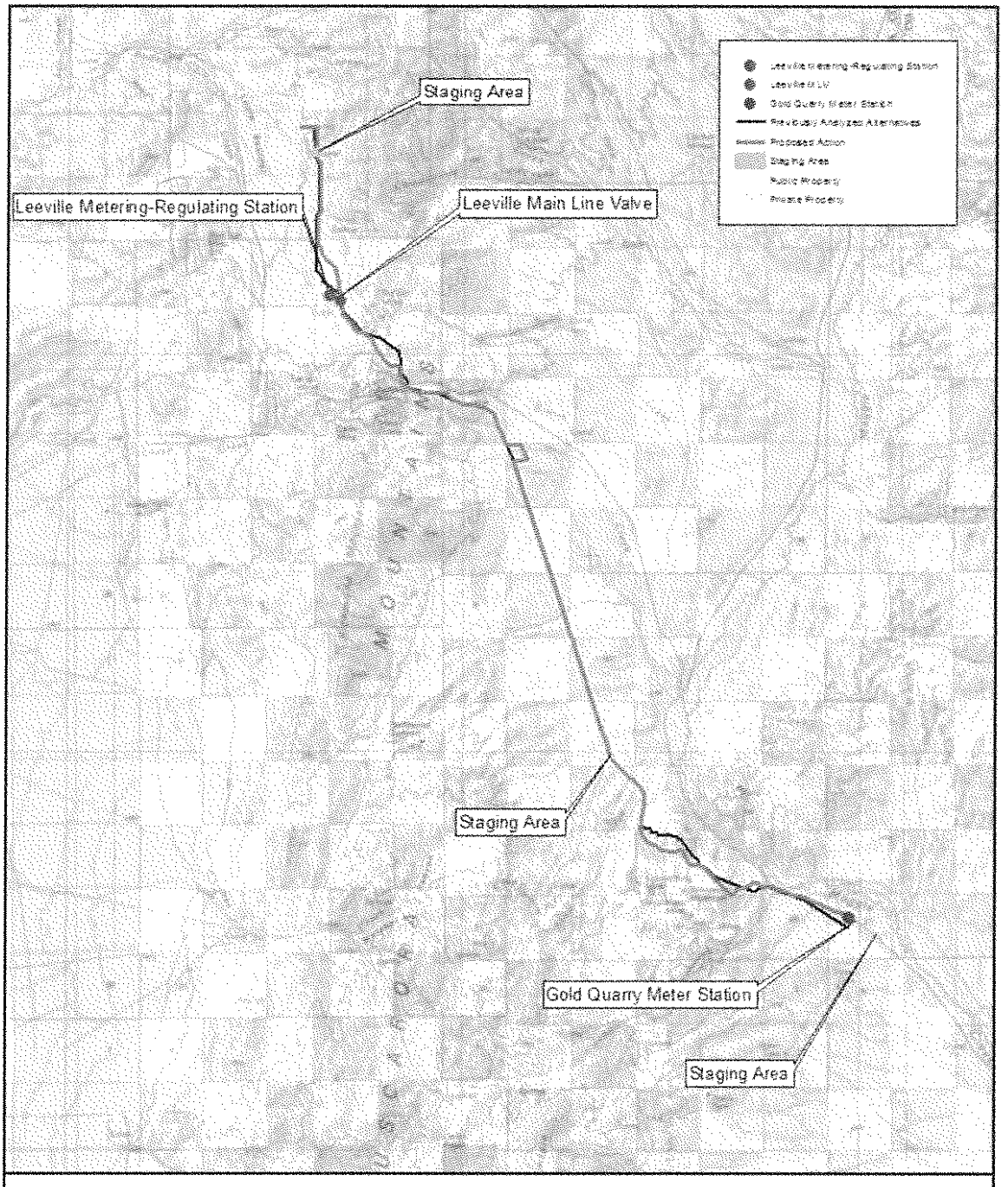

FIGURE 2-2: ALIGNMENT ALTERNATIVES
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Installation of the Pipeline:

Pipeline installation would be much like a moving assembly line process, with sections of the pipeline being completed in stages. First, the entire width of temporary ROW for the pipeline would be cleared and bladed smooth as needed to provide a safe working surface for the installation crew. After blading is completed, 40-foot, externally-coated lengths of pipe would be laid out end-to-end along the intended route within the permitted ROW boundary, a process referred to as "stringing" the pipe. The next step in the process would be for the 40-foot long pipe sections to be welded together to form longer continuous lines of pipe that are prepared for underground installation. Welds are inspected for integrity. Coating would be then applied to the welded pipe ends to complete the external coating for corrosion prevention. Specific sections of the pipe may be bent, if needed, using specialized equipment to fit the contour of the pipeline's path. Once these continuous lines of pipe are readied, commercial trenching and excavating equipment remove the surface and subsurface soil alongside the staged pipe. These trenches are typically four to six feet deep, as the regulations require the pipe to be at least 36 inches below the surface. In certain areas, however, including road crossings and where water features are present, the pipe could be buried deeper as needed to provide additional protection for the pipe or to allow for the trajectory required by alternative pipeline methods such as horizontal drilling. Road crossings may be cased (the carrier pipe placed within a larger diameter protective pipe) or pipe with a slightly thicker wall would be utilized. When the pipeline crosses State Route 766, construction would use the horizontal directional drill technique to avoid interference with highway traffic. Thicker walled, more heavily coated pipe may be used where water features are present. Given the soil conditions and the standards for construction, the pipe and coating must be protected against damage during and after installation. This would be accomplished by segregating the rocks from the native soil, "bedding" the excavated trench with the fines, laying the pipe in the trench then covering the pipe with more fines to keep rocks away from the coating. After that, the remaining native soil containing the rocks would fill the trench to grade. This carefully controlled process ensures against damage to the pipe and coating during installation and afterward. Keeping the rocks at a safe distance away from the pipe during installation would help prevent any rocks from contacting the pipe during settlement. Where suitable growth medium occurs, soils would be segregated simultaneously with trenching activities to allow growth medium to be placed back at the surface of the trench backfill.

Once the pipe is welded, bent, coated, and inspected it would be lowered into the previously-excavated trenches. This would be accomplished with specialized construction equipment known as side-booms acting to lift the pipe in a level manner and lower it into the trench. Once lowered into the ground, the trench would be filled in carefully to ensure that the pipe and its coating retain their integrity. The last step in pipeline construction would be the hydrostatic test. This consists of filling the pipeline with water and pressurizing to a pre-determined, engineered pressure greater than the MAOP to check for leaks. Water for the hydrostatic test and for dust abatement during construction would be obtained from the Goldstrike, Gold Quarry or Leeville Mine sources, or agricultural sources.

The study area for archaeological resources is defined as 150 feet on each side of the EPP alignment centerline for the proposed action. For biological resources the study area and temporary right-of-way are the same and are defined as follows: 100 feet wide (50 feet on each

side of the centerline) except in areas where the slope is 20 percent or greater. For safety and construction purposes, where the slope is 20 percent or greater, construction would require a temporary right-of-way of 125 feet (62.5 feet on each side of the centerline). The archaeological and biological study areas include the staging areas and station locations that are not contained within the temporary construction right-of-way (Figure 2-2). Installation of the EPP under the proposed action would result in approximately 270 acres of disturbance in the study area of which 59 acres are existing roads and other mining activities that would remain in a disturbed condition. Approximately 17 acres would be for staging and storage within existing disturbed land, and 0.71 acre would be permanent disturbance on public and private land attributed to above ground facilities. Temporary disturbance would be approximately 94 acres on public land and 117 acres on private land. The Proposed Action would reclaim 211 acres including that previously damaged by wildfire. Existing and proposed disturbance within the study area is summarized in Table 2 below by existing land surface type.

Within the study area the following land surface type definitions have been applied; undisturbed land surface when viewed from an aerial photograph (Microsoft Virtual Earth) that currently supports sufficient vegetation cover to assign a natural vegetation community type; disturbed – land surface when viewed from an aerial photograph (Microsoft Virtual Earth) that is currently graded and lacks sufficient vegetation cover to assign a natural vegetation community type; burned – land areas that have been damaged by wildfire including those that have been seeded and are at some level of restoration from 2001 through 2013 (BLM 2013a).

Table 2. Disturbance Associated with the Proposed Action within the Study Area

Activity	Private Land (Acres)			Public Land (Acres)		
	Upland Undisturbed*	Upland Disturbed* (roads/mining activity)	Upland Burned**	Upland Undisturbed*	Upland Disturbed* (roads/mining activity)	Upland Burned**
Existing/ Proposed Clearing/ Trenching & Backfill of pipe alignment (Study Area)	104	31	12	92	12	2
Proposed Clearing of vegetation on staging areas (Study Area)	1	15	0	0	1	0
Total Proposed Disturbance – 270 acres (Study Area)	105	46	12	92	13	2
Total Proposed Disturbance Private/Public 270 acres (Study Area)	163			107		

Sources:
*Disturbed, undisturbed upland or riparian habitat digitized using: Bing Maps: @ Harris Corp, Earthstar Geographics LLC © Microsoft Corporation.
**Burned in 2011. Bureau of Land Management 2013a. Tuscarora Field Office GIS. 2011 Fires, Fire History, Received January 2012 & August 2013

A list of equipment and operators/employees required to construct the EPP is summarized in Table 3. Construction activities would be expected for a minimum of 12 weeks up to a maximum of 20 weeks.

Table 3. EPP Proposed Construction Equipment/Operators

Equipment Quantity	Equipment Description	Operators /Employees
6	Semi-Truck - Pipe Delivery	4
2	Vacuum Lifter or Crane	2
2	D8, D9 or D10 Dozer - Blade and/or Loader	1
1	Trencher - Track Unit	1
2	Excavator - Track Unit	2
2	Backhoe	2
6	Side-Boom Tractor	4
2	Super Padder - Track Unit	1
1	HDD Unit	4
1	Pipe Bender - Track Unit	1
4	Dump Truck	4
2	Stakebed Truck - w/Stinger	2
6	Welding Truck	12
4	Water Truck (w/cannon)	4
2	Fuel/Lube Truck	2
9	Pickup	9
1	55HP New Holland Ford Tractor	1
1	Great Plains 8' wide no-till drill seeder	
1	185HP John Deere 4760 Tractor	1
2	10` wide side-by side Haybuster Drill Seeder	
1	Polaris 6 wheeler ATV with broadcast seed and harrow	1
58	**Subtotal**	**58**
	Other Non-Craft Employees	
	Construction Foreman	1
	Construction Inspector	2
	Site Engineer	1
	Surveyor	2
	Compliance Specialist	1
	Construction Laborers	10
	Subtotal	**17**
58	**Total**	**75**

2.1.3 Long Term Sustainability/Reclamation

Properly designed, installed, inspected, and maintained natural gas pipelines, such as the EPP, have an expected operating life well in excess of 50 years. As the EPP ages, the frequency of inspections and maintenance may be increased to ensure that the long-term integrity of the pipeline would be sustained. In the event no other uses for the EPP were developed, the EPP would be abandoned in place per industry standards and pipeline markers could be removed at that time. Abandoning in place would result in no further disturbance to the environment except for removal of the above-surface facilities at Leeville Regulating/Meter Station and Main Line Valve, and Gold Quarry Meter Station. Project disturbance would be reclaimed as described in Section 3.3.7.

2.1.4 Construction Measures/Design Features

This section describes the environmental protection measures and design features that would be included in the proposed action to minimize impacts from the construction and operation of the EPP.

General:

Prior to mobilization for construction, PPC would facilitate a preconstruction meeting for all construction field personnel. At this meeting, PPC resource specialists would provide Resource Sensitivity Training to PPC construction personnel. Resource Sensitivity Training would address resources that have potential to occur within the EPP temporary ROW, as well as BLM protocol to address those resources during the course of EPP construction activities. Resources addressed would include: cultural and paleontological resources, wildlife, and noxious weeds.

Cultural and Paleontological Resources:

Construction activities would be conducted with an awareness that vertebrate and invertebrate fossils, and cultural resources may be exposed during pipeline excavation activities. Prior to construction mobilization to the project area, a qualified specialist will provide the construction contractors with Resource Sensitivity Training to allow the contractors to be aware of the potential to inadvertently unearth and to identify potentially unique items in the unearthed trench soils.

During excavation for installation of the EPP, in areas that could disturb previously undisturbed Tertiary sediments (Tertiary Carlin Formation), excavation activities would be conducted with a paleontological monitor present. If vertebrate fossils are discovered in these currently undisturbed areas within the Tertiary Carlin Formation, construction activities would be stopped immediately within 100 feet of the area of discovery and PPC's paleontological monitor would contact the BLM Authorized Officer. The BLM Authorized Officer would evaluate the discovery to determine if the discovered paleontological resources are significant, and determine any construction adaptive management necessary, which could include PPC hiring a qualified specialist to evaluate the site and report on the findings. Construction activities within 100 feet of the area of discovery would not resume until a notice to proceed is granted by the BLM Authorized Officer within a reasonable timeframe.

The EPP Proposed Action ROW has been located through coordination with the BLM and project archaeologists based on the results of the project Class III cultural resources inventory such that potential direct impact to all known historic properties would be avoided during construction of the EPP. Portions of one known site are located within the Area of Potential Effect (APE). Within the area extending 100 feet north to 100 feet south of that site, the temporary construction ROW would be limited to 40 feet wide, extending east from the toe of the Newmont North-South Haul Road. PPC would employ a qualified cultural resources monitor to install a temporary fence at the 40 foot boundary, extending for a length of 200 feet. Furthermore, the archaeological monitor would be present during all ground disturbing activities in this area and to monitor the integrity of the ROW boundary fence.

If cultural resources are inadvertently discovered during EPP construction activities, the applicable regulations would be implemented (Section 3.3.1 Cultural Resources). Construction

activities on the EPP within 100 feet of the potential discovery would stop immediately and BLM would be notified. BLM would assess the situation and determine any construction adaptive management necessary, which could include PPC hiring a qualified cultural resources specialist to evaluate the site and report on the findings. This measure would allow for the evaluation of any cultural resources that may be inadvertently discovered and provide for their preservation or data recovery. Construction activities within 100 feet of the area of discovery would not resume until a notice to proceed is granted by the BLM Authorized Officer within a reasonable timeframe.

Wildlife:

Limited Operating Periods (LOPs) are designed to protect breeding adults and offspring from human-caused disturbances by minimizing the type, spatial extent, and timing of project activities permitted. Construction activities would not be authorized to occur within certain spatial limits during those LOPs unless environmental protection measures and construction methods are applied that can measurably avoid impacts to these species. The EPP originally-proposed construction period (January through March) would be subject to the LOPs and spatial limits shown in Table 4 as applicable. Proposed scheduled use of staging areas and pre-ground disturbing activities within the spatial limits identified in Table 4 would also adhere to the applicable LOPs. If weather or other factors result in construction delay or interruption extending the construction period, additional LOPs would be applicable as described below and summarized in Table 4.

Potential direct impacts to individuals would be minimized by conducting construction in accordance with LOPs. PPC would employ a qualified biologist to conduct species specific pre-construction surveys prior to clearing and grubbing of the EPP temporary ROW. If pygmy rabbit presence is confirmed by the qualified biologist, the biologist would consult with the BLM wildlife biologist for applicable adaptive management to be applied to clearing, grubbing, blading and construction activities, and buffers to be delineated in the field with protective fencing to avoid potential impact. Active burrows would be documented using GPS. PPC would then clear, grub and blade the proposed temporary ROW at the start of construction to remove potential burrowing habitat for pygmy rabbit avoiding areas buffered to protect active burrows. Buffered areas would be resurveyed and when determined to be inactive by PPC's qualified biologist would then be cleared and bladed for construction.

If weather or other factors result in construction delay or interruption extending the construction period into March, additional LOPs would be applicable. Construction extending into March would require PPC to employ a qualified wildlife biologist to conduct surveys for migratory birds in addition to pygmy rabbits that can be found in the area year-round as discussed above. Surveys and work construction periods would be conducted in accordance with the stipulations of the Migratory Bird Treaty Act as follows.

If EPP construction extends into the migratory bird nesting period (March 15 – July 31), prior to surface disturbance during this LOP, PPC would provide a qualified biologist to conduct migratory bird nest surveys of active working areas within potential nesting habitat to verify no nesting birds would be affected. During the period from March 1 – August 31, all ground-disturbing activities would be completed within 14 days of the date on which the survey was

performed. If activities begin or last more than 14 days from the date of the most recent nest survey, another nest survey would be performed to ensure that no nests are disturbed and that no take of migratory birds occurs. If nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nest material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) would be delineated in coordination with the BLM wildlife biologist, and the buffer area avoided to prevent destruction or disturbance to birds or nests until they are no longer active. Spatial buffer sizes presented in Table 4 are based in part on whether the species is a Species of Concern, knowledge of a species' tolerance of disturbance, and whether it nests predominantly in open versus forested habitat (USFWS 2008).

Table 4. EPP Limited Operating Periods

Species	Habitat Type	Limited Operating Period	Spatial Limits	Spatial Buffer (USFWS 2008)[1] Figure 3-12
Mule deer	Migration Areas	October 15 – December 31, and Late March – mid June (BLM 2013b)	Two significant confined corridors intersect the EPP alignment (Figure 3-8)	Not applicable
Western Burrowing owl	Nesting, Rearing, Foraging	March 1 – August 31	Buffer to be determined in consultation with BLM Wildlife Biologist if necessary based on preconstruction available habitat confirmation survey, and follow-up habitat surveys (if necessary) (Figure 3-11)	0.25 mile
Red-tailed Hawk	Nesting, Rearing	March 1 – April 15	Confirmed active nest within 1.6 miles of the EPP alignment (Figure 3-12)	0.33 mile
Pygmy rabbit	Nesting, Rearing, Foraging	Year-round	Buffer to be determined in consultation with BLM Wildlife Biologist if necessary based on preconstruction species-specific surveys	To be determined in consultation with BLM Wildlife Biologist if necessary based on pre-disturbance surveys (Figure 3-11)
Golden eagle	Nesting, Rearing,	January 1 – August 31	2 confirmed active nests within ½ mile of the EPP alignment (Figure 3-12)	0.5 mile
Ferruginous hawk	Nesting, Rearing,	March 1 – August 1	1 confirmed active nest within 5.5 miles of the EPP alignment (Figure 3-12)	1.0 mile
Prairie falcon	Nesting, Rearing	January 1 – July 1(BLM 2013b)	1 confirmed active nest within ½ mile of the EPP alignment (Figure 3-12)	0.5 mile

[1] From Guidelines for Raptor Conservation in the Western United States (USFWS 2008).

The BLM, NDOW and mining companies continue to follow the recommendations contained in the Area 6 (MU06) Mule Deer Working Group Habitat Management Practices (NDOW 2012) to minimize impacts to migration areas and restore habitat including reseeding tens of thousands of

acres in MU06 burned between 1999 and early 2013 (NDOW 2013b). The MU06 Management Practices are intended to look at management of the unit from a landscape level over the long term rather than a project by project or action by action basis and promote maintenance of historic/adequate north-south movement areas among other goals.

Under the Proposed Action, if weather or other factors cause disruption or delay in the construction schedule extending construction into the mule deer migration period, PPC would limit construction activities along the EPP temporary construction right-of-way during the applicable LOP (BLM 2013b) to BLM and NDOW approved noncontiguous construction blocks.

Should LOPs for mule deer be in effect during construction in a given area, construction crews and equipment would minimize the linear extent of construction activity along the pipeline corridor in those areas to accommodate the migration of such deer ahead of and behind the construction spread. Segmentation of the construction spread would only be utilized should the construction spread be unable to minimize the linear extent to acceptable levels. Segmentation of the construction spread would involve defining linear construction areas into construction blocks, for example Block A, Block B, and Block C, etc. This manner of segmentation would be repeated within areas as defined by the BLM and NDOW as used historically for deer movements through the project area. Construction would be authorized in "A" Blocks until completed through site stabilization and revegetation, at which time construction would move onto the "B" Blocks, and so on. The approved construction blocks would ensure that a majority of the historic mule deer migration area would not be temporarily restricted by EPP construction activities at a given time during the LOP.

PPC would complete site stabilization and revegetate currently undisturbed portions of the EPP temporary ROW at the completion of pipeline installation and as close to the onset of fall/winter precipitation as possible. Areas revegetated as a result of EPP construction ground disturbance in currently undisturbed areas would result in a temporary impact to wildlife habitat. However, revegetation during the fall/winter would minimize impacts to habitat by taking advantage of ambient soil moisture from snow, and exclusion from livestock grazing (BLM 2013e) rather than revegetation being conducted at the conclusion of pipeline installation. PPC would complete revegetation of these areas using a seed mix approved by the BLM (Section 3.3.7). In addition, PPC would be subject to Newmont's BLM approved monitoring requirements for meeting revegetation success criteria, and remediation protocol is determined necessary by the BLM and Newmont (BLM 2010a, 2010b, 2010c, 2012b).

If construction of the EPP were scheduled to occur outside of the mule deer LOPs (October 15 – December 31, and late March – mid June (BLM 2013b)), such as mid-June through late September the standard pipeline construction approach would apply. This standard approach is detailed in Section 2.1.2 Installation of the Pipeline.

To the furthest extent possible, under all construction schedule scenarios, each length of open trench would be limited to 1,200 feet at a time. If greater than 1,200 feet of trench would be open at any time in a particular location, the trench would be bridged and ramped every 1,200 feet to protect wildlife species and livestock, providing both a means to cross the open trench or to escape if needed.

The Proposed Action includes a Conservation Strategy (Appendix 3) to protect prairie falcon and golden eagle from potential direct and indirect impacts related to construction of the EPP. In addition to performing migratory bird nesting surveys as necessary, a qualified biologist would monitor to confirm activity of the golden eagle and prairie falcon nests. These nests are located approximately 1.3 miles southwest at the northern extent, and approximately 0.6 mile southwest in the southern extent of the EPP alignment, respectively. These nest locations are continually subject to noise associated with vehicular travel along State Route 766 for the prairie falcon, and mining activity for the eagle nest as discussed in Section 3.3.5 of this EA. If either or both of these nests are confirmed active when EPP construction begins at either end of the two raptor monitoring zones (Figure 5, Appendix 3), PPC's qualified biologist would start nesting behavior monitoring and continue monitoring until the qualified biologist determines that EPP construction activities are not resulting in abnormal nesting behavior, construction is completed within that monitoring zone, the raptor fledges young or the nest becomes inactive. If abnormal nesting behavior is documented, the qualified biologist will determine the severity of the abnormal behavior and consult with the BLM wildlife biologist to determine the appropriate course of adaptive management to be applied to construction activities. The goal of the nest behavior monitoring is to assess if potential construction-related impacts (noise or human presence) may disrupt the nesting success of the subject raptor. For EPP construction occurring outside the nesting season, and outside of the two raptor monitoring zones (Figure 5, Appendix 3), nest behavior monitoring is not required.

Soils and Vegetation:

To control the introduction of both noxious weeds and invasive nonnative plants during construction of the EPP, PPC would implement Newmont's BLM approved noxious and invasive weed control protocol. PPC will be responsible for informing all pipeline construction personnel of the requirements and compliance with the BLM approved protocol.

In addition, PPC would limit the extent of surface disturbance to that necessary to construct and install the EPP. PPC would conduct ground disturbing activities in a manner that includes study area pretreatment measures to preclude spreading of noxious weeds from the study area to unaffected adjacent areas, and dedicate equipment to address weed affected soils in the study area. Construction methods for the EPP would include the following: prior to entering the study area, all vehicles and construction equipment would be washed to remove dirt, debris, and plant materials to minimize the spread of weed materials. During construction, PPC would dedicate one piece of equipment to excavate weed affected soils for stockpiling and for backfill of weed-affected soils. The equipment may be used elsewhere on the project after washing.

PPC would stabilize all areas disturbed by construction of the EPP and seed all currently undisturbed ground as weather conditions allow subsequent to pipeline installation and as close to the onset of fall/winter precipitation. Site stabilization and revegetation of currently undisturbed ground would be conducted in accordance with Newmont's BLM-approved methods, treatments and seed mix. After construction and revegetation are completed, there would be no other disturbances planned within currently undisturbed areas by PPC during the life of the EPP project. In addition, PPC would be subject to Newmont's BLM approved monitoring requirements for meeting revegetation success criteria, and remediation protocol if determined necessary by the BLM and Newmont (BLM 2010a, 2010b, 2010c, 2012b).

In areas of the temporary ROW that are currently in a disturbed state, post construction PPC would return the ground surface to preconstruction topography and site stability levels.

Construction Equipment:

PPC has identified construction equipment necessary to effectively and efficiently complete construction and revegetation with full consideration of minimizing the surface disturbance footprint and human presence impacts to wildlife. PPC would limit access to the proposed temporary right-of-way to existing disturbed surfaces (Figure 3-1.1 and Figures 3-1.2 through 3-1.11 in Appendix 1). In addition, all pipeline construction activities will be restricted to the proposed temporary right-of-way and designated staging areas. To the extent practical, rubber tired equipment would be used. Please see Table 3 in Section 2.1.2 and the discussion regarding Installation of the Pipeline for a summary of equipment required for project construction. During the proposed construction phases for the EPP, Table 5 lists equipment that may likely be active during any one phase.

Table 5. EPP Proposed Construction Equipment/Operators Active at Each Stage

Construction Stages:

Clear and Grade Surface: Timeframe approximately 1 week.

Equipment Quantity	Equipment Description	Operators /Employees
2	D8, D9, or D10 Dozer - Blade and/or Loader	1
4	Water Truck (w/cannon)	4
6	Pickup	9
	Construction Foreman	1
	Construction Inspector	2
	Site Engineer	1
	Surveyor	2

Pipe Stringing and Preparation: Timeframe approximately 3 months*.

Equipment Quantity	Equipment Description	Operators /Employees
2	Vacuum Lifter or Crane	2
6	Side-Boom Tractor	4
1	Pipe Bender - Track Unit	1
4	Water Truck (w/cannon)	4
2	Fuel/Lube Truck	2
9	Pickup	9
	Construction Foreman	1
	Construction Inspector	2
	Site Engineer	1
	Surveyor	2
	Compliance Specialist	1
	Construction Laborers	10

Pipe Installation - Trenching through Recontouring: Timeframe approximately 3 months*.

Equipment Quantity	Equipment Description	Operators /Employees
2	Excavator - Track Unit	2
2	Vacuum Lifter or Crane	2
2	D8, D9, D10 Dozer - Blade and/or Loader	1
1	Trencher - Track Unit	1
2	Backhoe	2
6	Side-Boom Tractor	4
2	Super Padder - Track Unit	1
1	HDD Unit	4
4	Dump Truck	4
2	Stakebed Truck - w/Stinger	2
6	Welding Truck	12
4	Water Truck (w/cannon)	4
2	Fuel/Lube Truck	2
9	Pickup	9
	Construction Foreman	1
	Construction Inspector	2
	Site Engineer	1
	Surveyor	2
	Compliance Specialist	1
	Construction Laborers	10

Revegetation: Timeframe approximately 1 month.

Equipment Quantity	Equipment Description	Operators /Employees
1	55HP New Holland Ford Tractor	1
1	Great Plains 8' wide no-till drill seeder	
1	185HP John Deere 4760 Tractor	1
2	10' wide side-by side Haybuster Drill Seeder	
1	Polaris 6 wheeler ATV with broadcast seed and harrow	1
6	Pickup	9
	Construction Foreman	1
	Construction Inspector	2
	Site Engineer	1
	Surveyor	2
	Compliance Specialist	1

* = Pipe stringing and preparation, pipe installation, and revegetation would occur within approximately the same 3 month period.

Existing Features:
The EPP would maximize the use of areas already in a disturbed condition (roads and previously cleared areas) for the proposed access, staging and pipeline installation.

The EPP would confine construction access to the pipeline alignment to the requested temporary construction ROW and existing roads on private and public lands. Existing disturbed areas on public and private lands would be used for construction staging of equipment and pipeline materials (Figures 3-1.1 in Section 3 and Figures 3-1.2 through 3-1.11 in Appendix 1).

Construction Methods:
The EPP Proposed Action and Alternative would cross the Newmont-Barrick Mine Road (Road 237A) and State Route 766 in one location on each roadway (Figure 2-2). The construction method applied for crossing these areas would depend on a combination of factors, including consultation with the Nevada Department of Transportation (NDOT) District 3 and soil characteristics at each crossing site. At present, PPC proposes to cross both roadways using the Horizontal Directional Drilling (HDD) method, as described below, to avoid traffic flow impacts due to lane or road closure as a result of an open cut method.

Although the EPP would not cross any perennial or intermittent streams, the EPP would cross several ephemeral drainage features. Where features are dry, PPC proposes using the open-cut method, described below, to complete the crossing. In the unlikely event the features are flowing as a result of spring runoff events, HDD or dry-ditching would be applied as field conditions permit.

Open-Cut Crossing Method – Conventional trenching and excavation equipment would be used to excavate in the crossing area. Once the trench is established, the pre-bent, fabricated pipe segment would be installed and promptly backfilled. Pipe segments used for creek and drainage crossings would be weighted to prevent shifting in the event of future heavy runoff years or periods of prolonged heavy water flow.

HDD Method – Specialized equipment would be used to drill a generally horizontal pilot hole beneath the surface of the ground from one side of the crossing to the other. The path of the small diameter pilot hole would be at a sufficient depth under the crossing area to support the entry and exit angles for the drilling of the pilot hole. Drilling fluid consisting of water and bentonite clay would be used in a closed-loop system to lubricate the drill. The drilling system remains as a closed system from initiation of drilling through installation of the pipeline excluding potential for foreign objects including small wildlife to enter the drill hole. Upon completion of the pilot hole, the hole would be reamed with a larger drill bit to a larger diameter sufficient to accommodate the external diameter of the pipeline. A specially prepared pipe string would be pulled back through the reamed hole from the bore exit side to complete the crossing. Once installed, the ends of the pipe string would be tied-in to the pipeline on either side of the crossing.

Dry-Ditching Method – Similar to the open-cut crossing method, dry-ditching in flowing water involves the diversion of the water flow around the area to be crossed utilizing a system of flumes or pumps and hoses. Once the water diversion would be established, the crossing area

can be trenched or excavated as with the open-cut method. After the pipe would be installed in the trench and backfilled, the diversion would be removed and water flow restored in the original channel.

Additional grading may be required to allow for safe construction and pipe bending in areas where the EPP encounters steep slopes ($\geq$ 20%). Potential for this condition to arise has been evaluated and accounted for in the request for temporary ROW width. All land surfaces disturbed during construction of the EPP would be returned to pre-construction topography and level of stability that does not promote accelerated erosion.

The use of commercial explosives (blasting) to aid trench excavation would only take place along the EPP right-of-way in specific areas where the rock cannot be economically excavated by conventional means. All blasting activity would be conducted by an explosives contractor licensed by the state of Nevada and in conformity with all applicable laws and regulations governing the use of commercial explosives for excavation purposes. Explosives would be safely transported, handled, and stored by the explosives contractor and in accordance with applicable laws and standards for such activity. PPC would notify the appropriate Elko BLM office representative at least one day prior to the day explosives are to be used in the event such BLM representative wants to be present on-site to monitor the blasting activity. No blasting would occur within 40 feet of existing structures. All blasting located along adjacent power line ROW would be conducted in a manner that would not cause damage to the power company property and facilities. The blast area would be backfilled or covered by blasting mats and/or other material as needed to protect nearby existing facilities or sensitive natural resources from thrown rock fragments.

The drilling program would be based on grid spacing sufficient to achieve the desired explosive energy ratio needed to break the rock and pull the trench. This pattern would be adjusted on a site-specific basis to compensate for different geology, nearby utilities or other sensitive areas.

Delays would be used to control the vibration as well as limit the transmission of energy below the damaging levels at any existing structure. The delay pattern would be created to provide the energy relief immediately down the trench in preference to a horizontal direction. The amount of explosive used in each hole would be limited to the manufacturer's recommendations and specifications.

All shots would be carefully designed by the explosives contractor to control flyrock. All hole loading activity would be supervised by the explosives contractor, who would communicate with the shot hole drillers to obtain geological information for each shot. Matting and/or padding would be utilized at the discretion of the explosives contractor. A good quality, non-bridging stemming material that completely fills any voids in the drill hole would also be used to reduce the amount of flyrock.

Following the required waiting period after each shot, the blast area would be inspected for any indication of fire or fire hazard. Particular attention would be paid to the vegetated areas outside of the ROW. A fire watch team would patrol each blast area for a period of one hour after the required waiting period. Normally, the explosives vaporize at the instant of detonation and there

is no fiber or other material left to smolder or be a source of concern. Any plastic shock tube from the initiation system that remains after the blast would be picked up for proper disposal immediately after the blast.

All reasonable and necessary measures would be taken to exclude livestock and wildlife from the blasting area. During the normal safety check prior to blasting, the area would be checked for both livestock and wildlife. The blast would not be initiated until the area is clear (FERC 2009).

Aesthetics:

The fenced enclosure at all stations would be constructed of unpainted galvanized steel to avoid reflective surfaces. The above ground pipe and meter station would be painted with the approved BLM color palette "Shale Green" to blend into the surrounding landscape. The EPP will be properly marked in accordance with US DOT Code of Federal Regulations (CFR) Title 49, Part 192.707 to identify the location of the pipeline such that third parties are on notice of the pipeline's location and can coordinate with PPC prior to any planned excavation near the pipeline as required by Nevada's One-Call (811) law. Pipeline markers used by PPC are yellow in color and contain information about the nearby pipeline as well as emergency contact information. The style of such markers will minimize visual impacts to the extent feasible while complying with the code section previously referenced.

Pipeline Safety Features:

Risk of Accident/Rupture

Natural gas pipelines in the United States are designed, constructed, operated, and maintained according to the standards and requirements of the Federal government commonly referred to as the U.S. Department of Transportation (DOT) Natural Gas Pipeline Regulations, published in the Code of Federal Regulations (CFR), Title 49, Parts 191, 192, and 199 "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards". According to data compiled by the Pipeline and Hazardous Materials Safety Administration (PHMSA) for all gas transmission pipelines in the U.S. from 1992-2011, the top three leading causes for pipeline incidents resulting in human fatality, injury, and significant property damage are: 1) Excavation and other outside force damage (38.7%); 2) Material/Weld/Equipment/Corrosion failure (17.3%); and, 3) Miscellaneous or unknown causes (37.3%). Incorrect operation accounted for the remaining 6.7% of the causes (http://primis.phmsa.dot.gov/comm/reports/safety/SerPSIDet_1992_2011_US.html?nocache=2497#_ngurans). Although incidents have occurred with other gas and liquids pipelines in the U.S. during the same time period, discussing the potential for accident or rupture of gas transmission pipelines provides the most appropriate comparison when evaluating the safety of the EPP, which is classified as a local gas transmission pipeline.

The EPP has been designed pursuant to the CFR Title 49 Minimum Federal Safety Standards, and the design will be subject to final review, approval, and inspection by the PUCN per the Nevada Administrative Code 704.460. The EPP will be subject to PUCN oversight in all matters related to pipeline design, installation, testing, safety, operations, and maintenance. Specific safety measures will include the following measures for the design, construction, and operation that are intended to address any current and future factors that could affect the safe, reliable operation of the pipeline:

- Automated and Remotely-Controlled Valves - The EPP will be equipped with automated/automatic valves to ensure the rapid shut down of the pipeline in the event of an emergency. The Goldstrike Meter Station, point of origin for the EPP, is equipped with an automated valve actuator to shut off the flow of gas into the EPP in the event of an emergency. The mainline valve to be located at Leeville will be easily accessible for operation by PPC personnel and effectively isolate the upstream and downstream segments of the pipeline in the event of an emergency. Gold Quarry Meter Station will be equipped with check valves to eliminate the potential for any back-flow of gas into the EPP in the event of an emergency, as well as remotely controlled isolation and shutdown capabilities. Designing the EPP with automated/automatic rapid shutdown valves will help ensure the fail-safe operation and safe shutdown of the pipeline in case of emergency.

- Pipeline Markers – Per 49 CFR 192.707, the EPP will be properly marked to identify the location of the pipeline such that mining, construction, and ranching interests in the area are on notice of the pipeline's location and can coordinate with PPC prior to any planned excavation near the pipeline as required by Nevada's One-Call (811) law. Pipeline markers used by PPC are yellow in color and contain information about the nearby pipeline as well as emergency contact information. The style of such markers will minimize visual impacts to the extent feasible while complying with the code section previously referenced.

- PUCN Oversight for Pipeline Safety – PPC will work closely with the PUCN both prior to construction and afterward to ensure that the EPP remains compliant with NAC 704.460 guidelines for operations, maintenance, and emergency response. PPC's Gas Control Center operators will monitor and control the EPP operation on a real-time basis to ensure compliance with PUCN requirements.

The primary land uses along the project include mining and wildlife habitat. The greatest threat of damage would come in the form of unannounced third party excavation for mining or other purposes. PPC would be responsible for maintaining its Public Awareness Program in compliance with Nevada 811 and the CFR 49 Minimum Federal Safety Standards, and would maintain adequate line markers to alert potential excavators to the presence of the buried EPP. Should PPC be alerted to upcoming excavation through Nevada 811 (EA Section 2.1.4 One-Call Notification), PPC would follow the appropriate protocols for establishing communications with the excavators well before their work begins, properly spot-marking the pipeline within the immediate vicinity of the excavation and having PPC representatives present at the excavation site if the digging is to occur within or near the EPP permanent ROW corridor.

Industry data supports the common sense conclusion that the risk of damage to natural gas pipelines is higher in areas where population densities are greater and where construction or earth-moving activity is more likely. The likelihood of external damage to the pipeline through excavation activities is minimal due to level of awareness with Newmont and Barrick of the pipeline and the identification of the pipeline using standard pipeline markers. As with many areas of the U.S., the danger of wildfires caused by lightning strikes or careless humans must be considered in risk analysis of the EPP. With the exception of the three fenced above ground facilities, the threat of damage to the buried EPP during a wildfire would be negligible. No vegetation would be permitted to become established within the three fenced facilities, which

would eliminate the possibility of an area wildfire threatening the pipeline equipment maintained within those facilities. The facilities would also be equipped with lightning dissipaters to minimize the possibility of a lightning-sparked wildfire starting at any of the facilities.

The aforesaid safety measures taken by PPC during construction and afterward throughout the ongoing operation of the EPP would significantly reduce the possibility of accident or rupture to the pipeline. However unlikely, were third party excavation to occur within the EPP ROW corridor that damaged the pipeline resulting in a leak or rupture, the EPP's automated/automatic valves would halt gas flows at the source to contain and minimize the consequences of the leak. In the event of an emergency, PPC emergency response plans would include shutting off the natural gas and coordinating with first responders and firefighters to protect the safety of persons and minimize the damage to property while containing the leak and extinguishing the fire.

As the EPP ages, the frequency of inspections and maintenance may be increased to ensure that the long-term integrity of the pipeline is sustained. The latest Federal standards have been developed as a result of the unfortunate pipeline incidents that have occurred over the years, such that the lessons learned from those failures have been used to educate the industry and substantially upgrade the standards. As applicable, the pipeline may be internally inspected utilizing smart-pigging technology to evaluate the condition of the line pipe, welds, and the ongoing effectiveness of the cathodic protection system over the life of the pipeline. Any deficiencies detected during routine maintenance would be promptly addressed.

On-going Operation:
Once installation would be complete, the pipeline and facilities would be remotely monitored and operated by PPC's qualified operations personnel on a real-time, 24/7 basis utilizing SCADA (Supervisory Control And Data Acquisition) technology at PPC's Rancho Cordova, California Gas Control Center. Pipeline operators, utilizing the SCADA real-time operational data telemetered to the Gas Control Center, monitor pipeline flows and pressures to ensure the safe, efficient receipt and delivery of gas through the pipeline. Critical operating points are alarmed in the SCADA system to alert operators of changing pipeline conditions, as well as provide computerized leak detection on the pipeline. Pipeline personnel would be available at the Gas Control Center and locally to provide operational support for the pipeline, and to be available to respond to routine and emergency operating conditions as needed.

One-Call Notification:
The pipeline would be registered with the local chapter of the national one-call system (Underground Service Alert [USA] North), which provides excavators, construction crews, and anyone interested in digging into the ground around a pipeline with a single phone number that may be called when any excavation activity would be planned. This call alerts the pipeline company, which may flag the area, or even send representatives to monitor the digging. The national number for One Call is "811." Response time is dependent on the timing of the planned excavation.

Emergency Response:
PPC recognizes that emergency response may be required during construction and post-construction as part of the ongoing pipeline operations. Pursuant to Nevada Administrative Code

(NAC) section 704.460, PPC would be required to maintain an approved pipeline emergency response plan for pipeline operations under the jurisdiction of the Public Utilities Commission of Nevada (PUCN).

During construction of the EPP the following emergency response protocol would be applicable:

- The contractor would at all-times conduct construction activities in a manner to avoid the risk of bodily harm to persons or risk of damage to any property.
- PPC would require the contractor to promptly and fully comply with safety, sanitary and medical requirements as prescribed by Federal, State or local laws or regulations, and Newmont Mining Corporation personal and vehicle site safety requirements.
- PPC would require the contractor to submit for approval by PPC a written Safety Program.
- The construction Foreman and Inspector(s) would be required to keep on their persons at all times a satellite telephone or other suitable communications device for notification of emergency responders.
- All construction equipment would be equipped with applicable exhaust spark arrestors.
- Fire extinguishers would be available at all work sites.
- Personnel would be allowed to smoke only in designated areas, and they would be required to follow PPC policy regarding smoking.
- The BLM Elko District Office (775-753-0200) would be notified of any wildland fire, even if the available construction personnel are able to address the situation or the fire poses no threat to the surrounding area. In addition, the Elko Interagency Dispatch Center would be notified (775-748-4000).
- A list of emergency phone numbers would be maintained at all work sites.
- All construction vehicles would carry a shovel and conventional fire extinguisher.
- Vehicle catalytic converters (on vehicles that enter and leave the study area on a regular basis) would be inspected often and cleaned of all flammable debris.
- All cutting/welding torch use, electric-arc welding, and grinding operations would be conducted in an area free, or mostly free, from vegetation. An ample water supply and shovel would be on hand to extinguish any fires created from sparks. At least one other person in addition to the cutter/welder/grinder would be at the work site to promptly detect fires created by sparks.
- All construction personnel would be responsible for being aware of and complying with the requirements of any fire restrictions or closures issued by the BLM, as publicized in the local media or posted in the field or on the Elko BLM District website.

Inspection of the Pipeline:

Post construction, the EPP would require a minimum annual visual inspection of the pipeline route in its entirety. Each visual inspection would include the required annual leak detection, pipeline marker inspection, and cathodic protection inspection and testing. These inspections are non-invasive and cause no greater disturbance than driving or walking the pipeline corridor. PPC would use existing roads to perform required inspections. In addition, PPC would notify the BLM of the annual inspection date two weeks prior to the scheduled inspection and invite BLM personnel to accompany the inspector.

2.1.5 Connected Actions

Connected actions are those actions that are "closely related" and "should be discussed" in the same NEPA document (40 CFR 1508.25 (a)(1)). Actions are connected if they automatically trigger other actions that may require an EIS; cannot or would not proceed unless other actions are taken previously or simultaneously; or if the actions are interdependent parts of a larger action and depend upon the larger action for their justification (40 CFR 1508.25 (a)(i, ii, iii)). Connected actions are limited to actions that are currently proposed (ripe for decision). Actions that are not yet proposed are not connected actions, but may need to be analyzed in cumulative effects analysis if they are reasonably foreseeable (BLM 2008).

There no actions that are currently proposed (ripe for decision) to be analyzed in the EPP EA.

2.2 Alternatives

The alternatives to the Proposed Action are limited to the No Action Alternative. Several alternatives were considered but eliminated from further analysis for one or more reasons as described below. Such reasons include feasible construction, maximizing existing disturbed land surfaces, and avoidance of current or planned mining activities.

2.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not authorize a ROW grant for the EPP on public lands. Since the pipeline must cross public lands, no pipeline could be constructed if BLM does not authorize a grant.

2.2.2 Alternatives Considered But Eliminated from Further Consideration

Newmont-Barrick Mine Road

One alternative alignment that follows Nevada State Route 766 and the Newmont-Barrick Mine Road (Road 237A) was initially explored by PPC in an attempt to minimize disturbance, to the furthest extent possible, to sensitive resources. This alternative was eliminated from further consideration due to the proximity of this route and its crossing of Maggie Creek with associated potential for impact to riparian and endangered species potential habitat for Lahontan cutthroat trout, high likelihood of occurrence of cultural resources and potential for impact, constructability issues in very steep areas, potential disruption of daily traffic flow and traveler and construction worker safety.

EPP Alignment South Extent

At the south extent of the EPP alignment, PPC explored an option to run the alignment as far as possible down the southwest side of State Route 766 to take advantage of existing disturbed ground. In June 2013, the BLM informed PPC of the EPP alignment proximity to the toe of the existing waste rock dump toe and previous slope failure. In addition, an existing waterline is located within the EPP proposed alignment in this section. This alternative was eliminated from further consideration due to proximity to both of these features requiring infeasible construction techniques.

Minor Alignment Adjustments

The initial EPP alignment (as set forth in the originally submitted SF299) as shown on Figure 2-2 was evaluated in the field for constructability, maximum use of existing disturbed lands, and avoidance of current and future mining activities. In four general locations, the initial EPP alignment was eliminated from further consideration for these reasons. These minor alignment adjustments have resulted in approximately 1 additional mile of proposed pipeline to be constructed.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES FOR THE PROPOSED ACTION AND THE ALTERNATIVES

This section describes the resources not affected or minimally affected by the Proposed Action and Alternatives, the affected environment for the EPP study area; and the direct and indirect impacts associated with the Proposed Action and No Action Alternative. Please see Figures 3-1.1 and Appendix 1 that show details for the proposed alignment.

The EPP would require a permanent grant authorization of a right-of-way of 30 feet wide on public and private lands, totaling about 66 acres. In the following sections, the "study area" refers to land associated with resources and resource uses analyzed in this EA. The study area for archaeological resources is 300 feet wide - 150 feet on each side of the centerline. For biological resources the study area and temporary right-of-way are the same and are defined as follows: 100 feet wide (50 feet on each side of the centerline) except in areas where the slope is 20 percent or greater and in the vicinity of the National Historic Register eligible Victory Highway where the temporary ROW would be limited to 40 feet.. For safety and construction purposes, where the slope is 20 percent or greater construction will require a temporary right-of-way of 125 feet (62.5 feet on each side of the centerline). The archaeological and biological study areas include the staging areas and station locations that are not contained within the temporary construction right-of-way (Figure 2-2).

The surface disturbing impacts in currently undisturbed areas of the study area are considered to be temporary impacts due to ground disturbance as the pipeline route is cleared, excavated and the pipeline is installed. Site stabilization and seeding of currently undisturbed areas would occur subsequent to pipeline installation as close to the onset of winter precipitation as possible, and the vegetation would be restored as quickly as effective precipitation allows. Fall/winter seeding under or on snow allows native species seed to imbibe water, yet not germinate until growing season temperatures are reached and maintained. In addition, a snow cover protects most seed from being foraged by small wildlife and birds.

The other category of potential impacts is long term, which, in this case is estimated at approximately 50 years – the expected lifetime of the active mine operations associated with the proposed EPP alignment, the only user of natural gas from the pipeline. Long term impacts would result primarily from ongoing pipeline operations. They include a low level of noise (8 to 10 Db) from equipment at the three surface stations, maintenance and safety inspections, and the physical presence of the three surface stations (Section 3.1.1 below).

Given that a majority of the proposed EPP pipeline is contained with currently permitted POOs, there is potential for future disturbance of the soil surface after revegetation by PPC. Future potential soil surface disturbance would delay revegetation recovery.

Baseline information presented in this chapter was obtained from published and unpublished material; discussions with federal, state, and local agencies; field studies conducted in the study area; and PPC personnel's experience with construction and operation of natural gas pipelines. The affected environment for individual resources was delineated based on the area of potential direct and indirect environmental impacts for the proposed EPP.

The proposed EPP would be located along the eastern side of the Tuscarora Mountains within the Maggie Creek Area-051, and Boulder Flat 061 hydrographic basins (Figure 3-2). North-trending mountains and hills are bisected by perennial and intermittent drainages and colluvium and alluvium dominated basins. In the area, elevations range from about 6425 feet (amsl) at a mountain peak south of the Goldstrike Meter Station to a low of approximately 5094 feet (amsl) near the south end of the EPP along State Route 766.

3.1 Negative Declarations

The BLM ID Team (Section 6) (BLM 2013b) evaluated resources and resources uses and determined that the following resources and resource uses would either not be affected or minimally affected (such that analysis is not needed) by the Proposed Action. Rationale for dismissing these resources and resource uses from further discussion in this EA are provided where appropriate.

3.1.1 Resources and Resource Uses Not Present and Not Affected

- Areas of Critical Environmental Concern (ACEC) – there are no ACEC's within the study area for the EPP.
- Environmental Justice - This project is not anticipated to have any disproportionately high and adverse effects on minority and low-income populations.
- Floodplains (designated by FEMA) – the EPP study area does not include floodplain or floodway areas regulated by the Federal Emergency Management Agency (FEMA).
- Forestry and Woodland Products - The EPP study area does not support timber suitable for forest habitat or harvest.
- Grazing and Range Improvements: A majority of the study area has been removed from grazing permits administered by the BLM.
- Human Health and Safety – Please see Section 2.1.4 Pipeline Safety Features.
- Noise - The only concern related to noise is the potential impact of noise on wildlife. Noise levels associated with the construction and operation of the Proposed Action would be similar to noise generated from ambient and ongoing mining activities. Per the Ruby Pipeline Final EIS, the increase in noise level at a metering station as a result of pipeline operation is 4 to 8dB attributed to a Model 8550 TEG (thermoelectric generator). Current Tuscarora Field Office policy views any increase of less than 10dB in active sage-grouse strutting and brooding habitat as having no substantive impact (BLM 2012a). Although the EPP project area does not support Greater sage-grouse Preliminary Priority or Preliminary General habitat for Greater sage-grouse (BLM 2013b), this policy for potential noise impacts was applied to the EPP.

  The only equipment required for operation of the proposed EPP Leeville and Gold Quarry Meter Stations that has potential for generating noise on public land is the TEG. The EPP pipeline operation and monitoring equipment has been selected to minimize pipeline operation noise. The Model 8550 TEG, located at least 10 feet from all sides of the fenced enclosure at these two stations, would provide the source of power for the electronics and monitoring telemetry at the metering stations. This TEG model would limit new noise emissions to less than 8 dB at 3 feet, and 0 dB at 9 feet of the TEG. There is no other noise source associated with the proposed action. The 4 to 8 dB

attributed to the existing Ruby MLV#24 or the level of 0 dB at 9 feet for the NEPP TEG at the Willow Creek Meter Station would not exceed the recommended threshold of 10 dB over the ambient noise level. Therefore no impact from noise is expected.

- Noxious and Invasive Nonnative Plant Species – to control the potential for introduction of noxious and invasive nonnative plant species please see Section 2.1.4, 3.3.5 and 3.3.7 of this EA
- Prime or Unique Farm Lands – The EPP study area does not support unique farm lands.
- Riparian Habitat – The EPP study area does not support riparian habitat.
- Sensitive Species – Vegetation: Special status species of plants with potential to occur in the vicinity of the EPP Study area include Lewis buckwheat (*Eriogonum lewisii*), and Broad Fleabane (*Conyza sumatrensis*) Based on data base query results from the NNHP (2013) there are no known occurrences of special status plant species within the EPP study area.
- Wastes – Hazardous or Solid - During construction of the EPP toxic and hazardous materials, primarily petroleum fuel and hydraulic fluids may be used in construction equipment. Construction activities would be subject to requirements to protect the environment in accordance with the permits listed in Section 1.2.2 (UEPA, SWPPP).
- Wild and Scenic Rivers – The EPP study area does not support Wild and Scenic Rivers.
- Land with Wilderness Characteristics: The study area was evaluated for wilderness characteristics in 1979 (BLM) and in 1985 (BLM). During these inventories and analyses for lands with wilderness characteristics there were no unit polygons studied (BLM 1979).
- Wild Horses and Burros – The EPP study area does not contain or intersect with Wild Horse Management Areas.

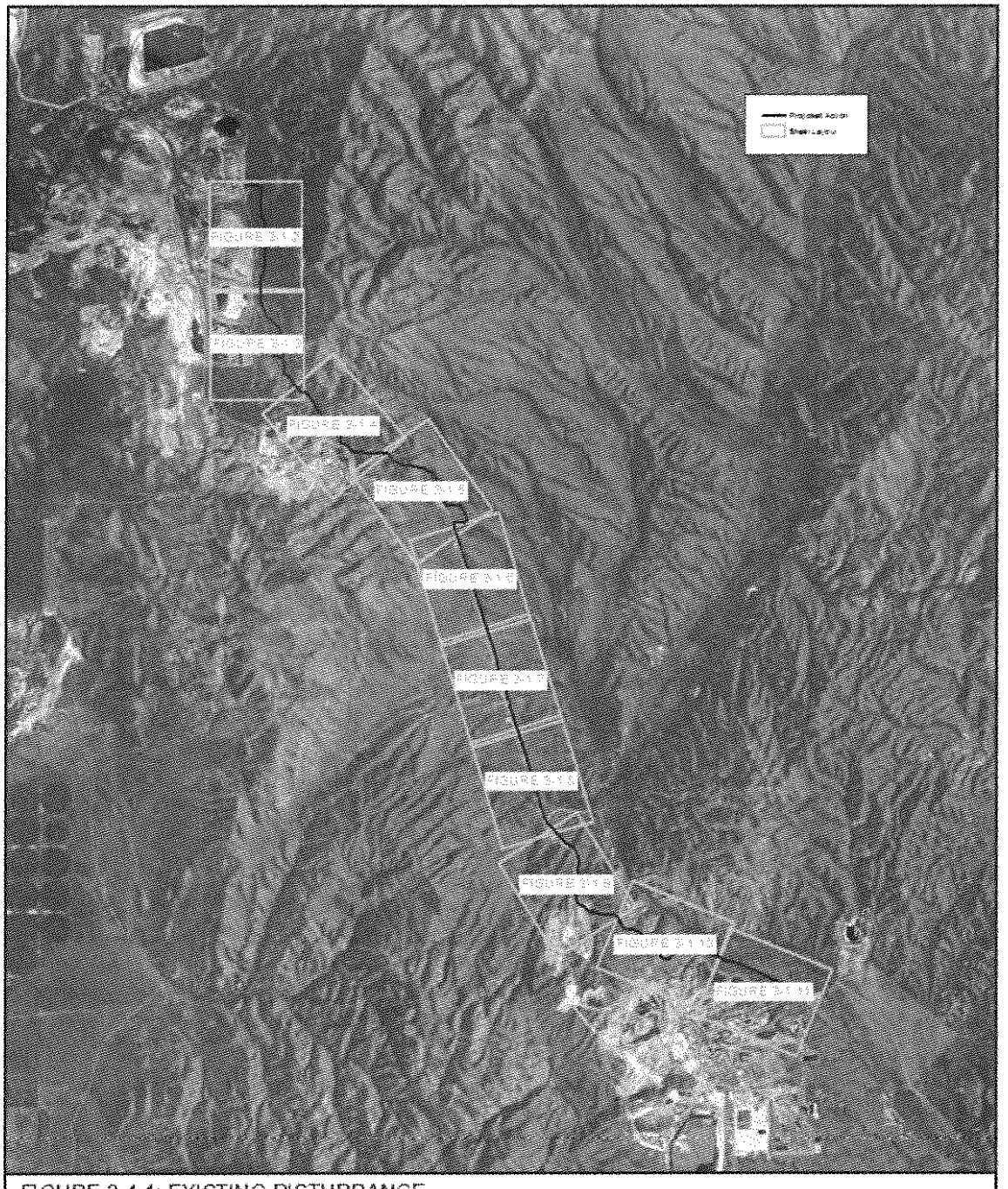

FIGURE 3-1.1: EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NORTH

0 1 2
MILES

NOTES
BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN

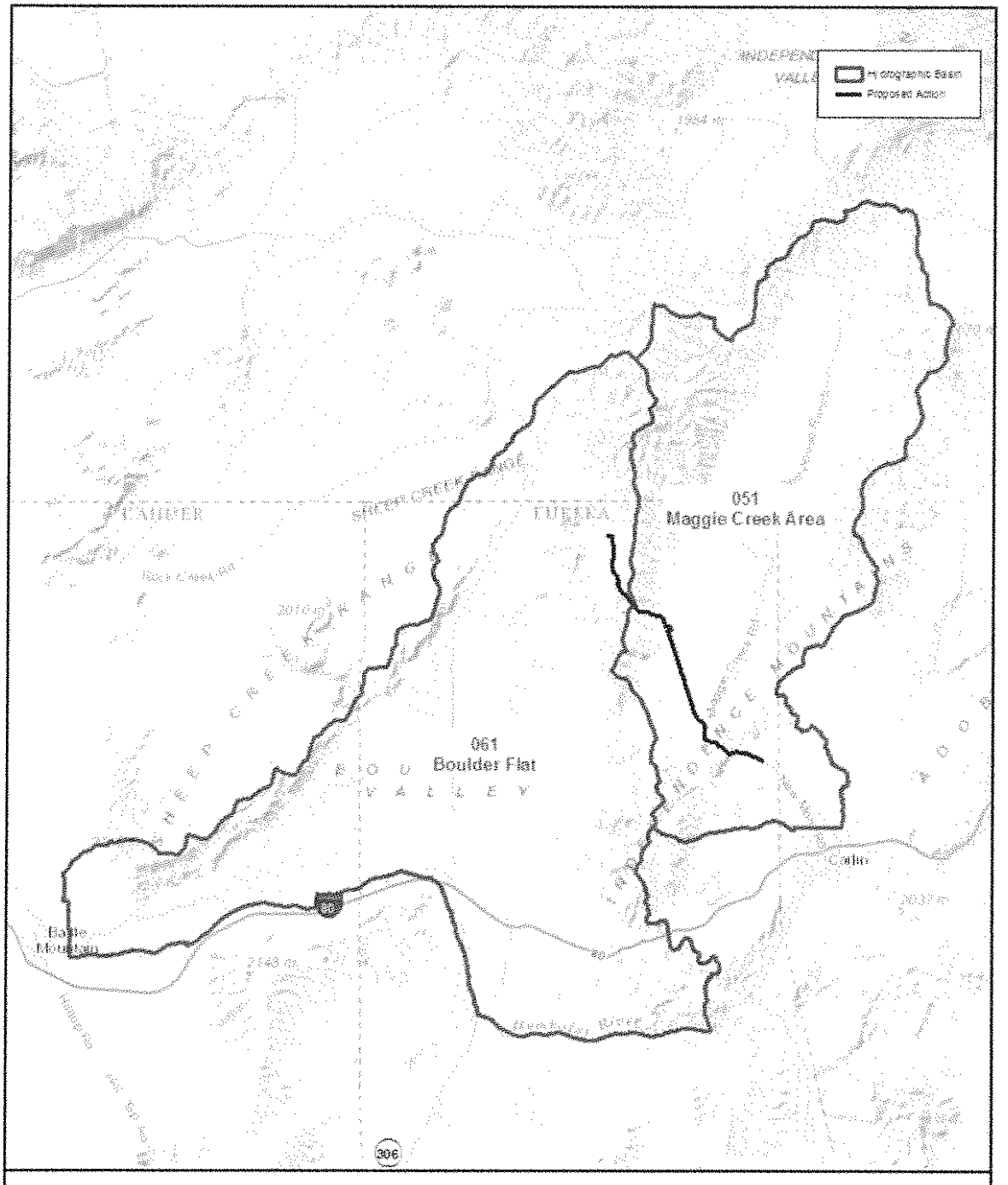

FIGURE 3-2: HYDROGRAPHIC BASINS
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
BACKGROUND: SOURCES: ESRI, DELORME, NAVTEQ, TOMTOM, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, AND THE GIS USER COMMUNITY
HYDROGRAPHIC BASINS: NDWR

3.1.2 Resources and Resource Uses Present, But Not Affected

Fire Management:

Construction and operation of the EPP would not restrict emergency response in the case of a wildfire during construction. The EPP would disturb approximately 14 acres of burned upland on public and private lands. Undisturbed lands including burned land surfaces that would be disturbed by construction of the EPP (211 acres) would be stabilized and seeded using a seed mix previously approved by the BLM for Newmont projects in the Carlin Trend. The seed mix to be applied is contained in Section 3.3.7. In addition, PPC would be subject to Newmont's BLM approved monitoring requirements for meeting revegetation success criteria, and remediation protocol if determined necessary by the BLM and Newmont (BLM 2010a, 2010b, 2010c, 2012b).

Recreation:

There are no established recreation trails, campsites, or parks in the vicinity of the study area. Recreational access is along State Route 766, the Newmont-Barrick Mine Road and the Maggie Creek Road. These roads would remain open under the Proposed Action and Alternative. Recreational use in the vicinity of the study area is moderate and dispersed and consists mostly of hunting and sightseeing.

Water Quality – Groundwater:

Construction of the EPP would limit excavation of the pipe trench to a maximum of approximately six feet below existing ground surface. Based on the limited depth of excavation, EPP does not expect to encounter or impact groundwater during construction or operation.

Water Quality – Surface Water:

Construction of the EPP would not cross any perennial or intermittent streams or creeks. As described in Section 2.1.4 Construction Methods, in the unlikely event of the EPP needing to cross flowing ephemeral drainage features Horizontal Directional Drilling (HDD) or dry-ditching would be applied as field conditions permit. The width of disturbance required at each drainage feature crossing would be approximately 50 linear feet. Chapter 2 of this EA describes detailed installation and Best Management Practice measures to protect surface water quality when crossing drainage features. Considering the expected dry drainages and provisions in the Proposed Action, minimal impact to surface water quality is expected. Operation and maintenance of the pipeline would not impact surface water resources.

3.1.3 Resources Present, But Minimally Affected

Soils:

Soils within the EPP study area are dominated by well-drained soils on mountains and hills, with some well-drained soils on high terraces and alluvial fans, and a minor amount of area with well-drained soils on low terraces and alluvial fans (NRCS 2006). Under the Proposed Action, PPC would use a "Super Padder" to excavate the pipe trench and to backfill the trench of the pipeline. During excavation and backfill, the Super Padder extracts soils starting from the surface and deposits them immediately adjacent to the trench in the order that they were extracted. Surface soils to a depth of approximately 1 to 2 feet (dependent on availability of surface soils) are deposited in the order they are extracted on one side of the trench and subsoils are deposited on the opposite side of the trench. Subsoils are backfilled first to assist in bedding the pipe and

providing stability for upper level soil backfill. Upper level soils are then backfilled with the finest topsoil replaced at the surface of the trench. The Proposed Action includes provisions to concurrently stabilize disturbed areas and seed existing undisturbed areas to minimize loss of the soil resource. During construction, water trucks would be employed to minimize loss of soil as a result of fugitive dust. Following construction, operation and maintenance of the pipeline would not require any extensive future ground disturbing activities.

Land surface that would be disturbed by construction of the EPP (211 acres) would be stabilized and seeded using a seed mix previously approved by the BLM for Newmont projects in the Carlin Trend. The seed mix to be applied is contained in Section 3.3.7. Seeding would occur after installation of the pipeline and as close as possible to the onset of fall/winter precipitation. In addition, PPC would be subject to Newmont's BLM approved monitoring requirements for meeting revegetation success criteria, and remediation protocol if determined necessary by the BLM and Newmont (BLM 2010a, 2010b, 2010c, 2012b).

3.2 Past, Present, and Reasonably Foreseeable Future Actions and Cumulative Effects Analysis

3.2.1 Introduction

This section describes the past, present, and reasonably foreseeable future actions that, when combined with the Proposed Action, would result in cumulative effects. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."(40 CFR 1508.7).

Past actions are typically described in general terms without listing or analyzing the effects of individual past actions. Present actions are actions that are ongoing at the time of the analysis. Reasonably foreseeable future actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable based on available information.

The cumulative effects analysis assesses the new impacts associated with the EPP combined with the existing and future impacts for past, present and reasonably foreseeable future actions. In this EA, the cumulative impacts are discussed in the section for each resource. If the EPP would have no measurable direct or indirect effects on a resource, that resource was not analyzed for cumulative effects. The EPP would or could have measurable impacts on cultural and wildlife resources. Therefore, this EA includes a cumulative effects analysis for each of these resources.

The geographic scope of each cumulative effects analysis is defined by a Cumulative Effects Study Area (CESA). CESAs are specific for each resource evaluated. The time frame for the cumulative effects analyses is 50 years, the anticipated period during which PPC would provide natural gas to Newmont's Leeville and Gold Quarry Mines based on the current Plans of Operation for these mines. For this EA the CESA for Past, Present, and Reasonably Foreseeable Future Actions has been defined as the vicinity of the Carlin Trend. The Carlin Trend is generally defined as the area from the Midas Mine located approximately 50 miles northwest from Carlin and the Ormat Geothermal Plant located approximately 10 miles northeast of Tuscarora, south to the Gold Quarry Mine located approximately 3 miles northwest of Carlin.

3.2.2 Past and Present Actions

The important past and present actions that have had and/or are having impacts to the two resources mentioned above include wildfire, wildfire restoration, mineral exploration and mining, ROW actions, community expansion, and recreation which includes hunting (Figure 3-3). Disturbance associated with these activities are summarized in Table 6. Minor past or present actions or actions with indeterminable impacts could include climate change, wildlife usage patterns, pollution, and vegetation manipulation. These minor or indeterminable impacts actions are believed to involve such small acreages or have such small or uncertain impacts that they do not require analysis for cumulative impacts.

There have been several wildfires affecting the vicinity of the Carlin Trend between 1980 and 2013 where approximately 932,670 acres (59%) were burned. Recently, fires in the vicinity include the Esmeralda Fire (2005), the Newmont Fire (2005), the Sheep Fire (2006), the Snow Canyon Fire (2006), the Amazon Fire (2006), the Taylor Fire (2006), the Willow Creek Fire (2007), the Indian Creek Fire (2011), the Chukar Canyon Fire (2011), the Willow Fire (2012), the Maggie Creek Fire (2012), the Greenhorn Fire (2012), the Gold Quarry Fire (2012) and the Wieland Fire (2013).

Ongoing mining projects in the immediate area of the Proposed Action include the following:

- Midas Mine: Operated by Klondex Gold and Silver Mining Company is located approximately 50 miles northwest of Carlin. 154 acres of the approximate 234 acres or permitted mining activities have been disturbed. (BLM 2010a,c)
- Ivanhoe Mine: Operated by Newmont Mining Corporation has disturbed approximately 268 acres (BLM 2010a,c).
- Hollister Operations: Operated by Waterton Global Mining Company and the 77 acres of disturbance are located within the disturbance previously created by the Ivanhoe Mine. (BLM 2010a,c)
- Rossi Mine: Operated by Halliburton. All 585 acres of the permitted disturbance area has been disturbed and it is anticipated that approximately another 1,000 acres will be disturbed. (BLM 2010a,c) (BLM 2012)
- Dee Mine: The operation by Barrick Dee Mining Venture has been permitted to disturb 814 acres. (BLM 2010a,c)

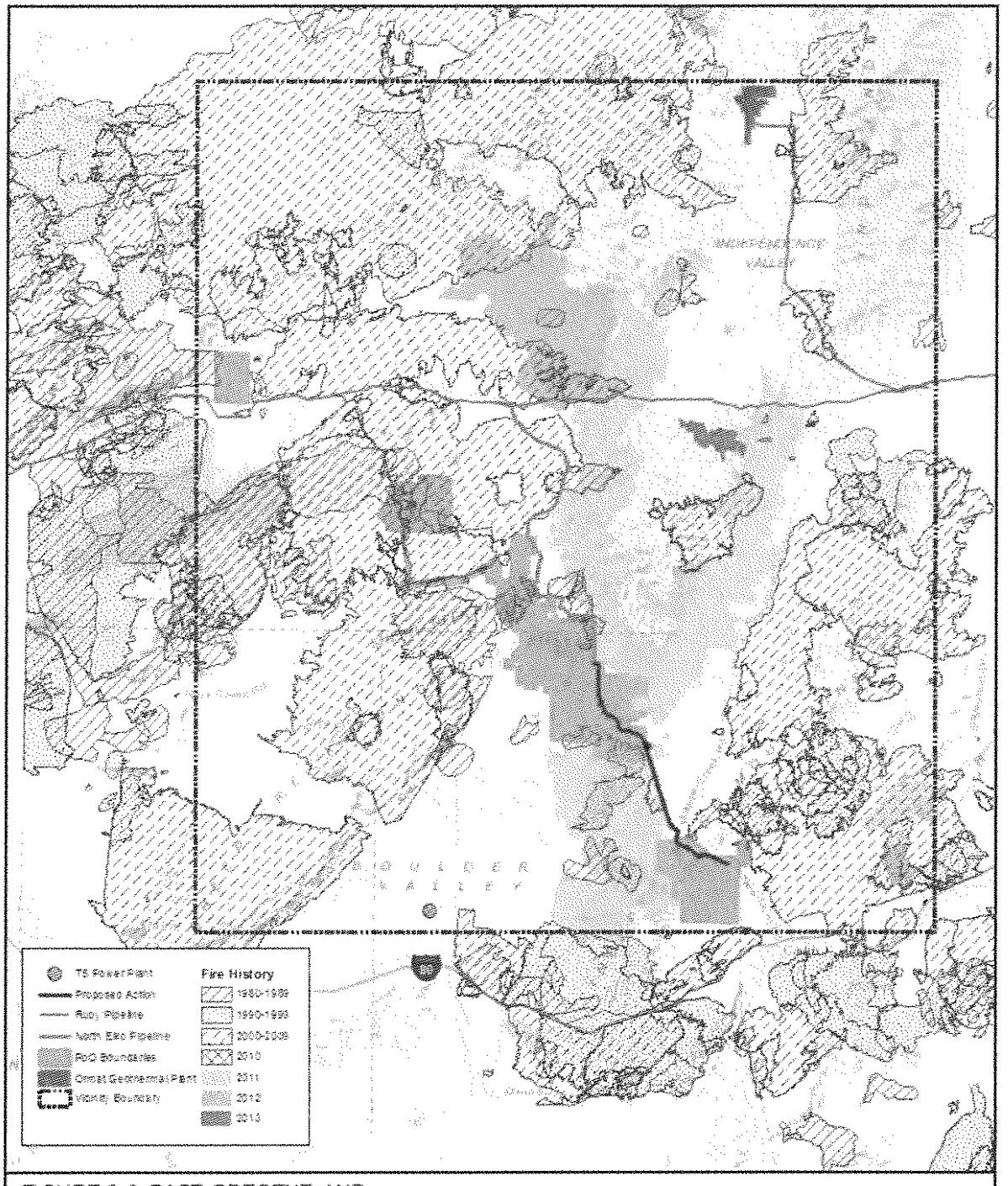

FIGURE 3-3: PAST, PRESENT, AND REASONABLY FORSEEABLE FUTURE ACTIONS AND LAND USE CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
OWNERSHIP: BLM
BACKGROUND SOURCES
ESRI, DELORME, NAVTEQ
TOMTOM, INTERMAP
INCREMENT P CORP.
GEBCO, USGS, FAO, NPS

- Storm Mine: Like the Dee Mine this operation is also run by Barrick Dee Mining Venture (BLM 2010a,c).
- Goldstrike Mine: Operated by Barrick Goldstrike Mines, Inc., this venture has approximately 9,062 acres of permitted disturbance. (BLM 2010a,c)
- North Operations Area: This operation by Newmont Mining Corporation is comprised of many past and present mining ventures. These include the Bootstrap Mine, the Bluestar/Genesis Project, the Exodus Underground Mine operation, North Area Leach, the Carlin Mine/Pete Project, and the Leeville Mine. These ventures have disturbed approximately 17,143 acres with an additional 100 acres anticipated to be disturbed with future actions. Of the 17,143 acres the 1,900 acres associated with the Bootstrap Mine is currently in reclamation and closure status. (BLM 2010a,c)
- South Operations Area Project/Gold Quarry: Operated by Newmont Mining Corporation this area also includes the Mike Mine and the North South Haul Road. Approximately 9,961 acres have been disturbed. (BLM 2010a,c)
- Sand and Gravel Mines have disturbed approximately 395 acres. These operations provide support for construction activities and roadway maintenance. (BLM 2010a,c)

Mining activities in the vicinity of the Carlin Trend have disturbed an estimated 33,248 acres and are expected to disturb and additional approximate 5,146 acres.

Mineral exploration activities have disturbed approximately 1,170 acres and are expected to disturb an additional approximately 55 acres (BLM 2010a,c). These exploration activities include Waterton Global Mining Company's Ivanhoe Hollister Development Block, Trio Gold Corporation's Rodeo Creek, Barrick's Dee Gold Mine, Newmont's Carlin, Chevas, High Desert and Mike exploration activities and Barrick's Rossi, Ren, and Goldstrike Project exploration activities (BLM 2010a,c).

Other existing facilities that have impacted resources analyzed in this EA include the Oreana to Hunt, Idaho 345kV transmission line, the Coyote to Bazza 120kV transmission line, the Valmy to Falcon 345kV transmission line, the abandoned Brigham City to Chico, CA ATT fiberoptics line (ROW still visible), the Big Six Communication Site, the Ruby Pipeline, the North Elko Pipeline, the TS Power Plant, and power line systems in Boulder Valley associated with Carlin Trend mining operations.

Table 6. Estimated Disturbance of Past, Present and Reasonably Foreseeable Future Actions

Estimated Acres of Disturbance			
Action	**Past and Present Disturbance (acres)**	**RFFA Projected Disturbance (acres)**	**Total Past, Present, and Projected Disturbance (acres)**
Mining Projects and Mineral Exploration[1]	34,418	5,201	39,619
Sand and Gravel Mines	395	0	395
TS Power Plant[1]	600	0	600
Ruby Pipeline Disturbance within the vicinity of the Carlin Trend (40 miles within CESA of a total of 167 miles within Elko County)[1]	558	0	558
North Elko Pipeline[1]	140	0	140
Eureka Pipeline	0	211	211
Total	**36,111**	**5,412**	**41,523**

[1]Disturbance numbers from Hollister Underground Mine Project Draft EIS (BLM 2012b)

3.2.3 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions that could contribute to cumulative impacts during the lifetime of the EPP include wildfire, and mining projects. Three expansions of current mines are being reviewed by the Tuscarora Field Office. They are the Rossi Mine Expansion Project, Arturo Mine Project, and the Hollister Underground Mine Project (Figure 3-3). Each of these actions is described below.

Rossi Mine Expansion Project

The BLM expects a proposed Rossi Mine Expansion Project to be submitted in early 2014. The project would be located approximately eight to ten miles north-northwest of Barrick's Goldstrike Mine. The project is expected to propose an additional 178 acres of surface disturbance to the existing 407 acres of surface disturbance created at the Rossi Mine for a total disturbance of approximately 585 acres. An earlier version of the expansion (the proposal continues to change as development moves forward) was addressed in the cumulative effects analysis for the Betze Pit Expansion Project Draft SEIS (BLM, 2008). A new EIS is expected to provide an environmental analysis of the project when it is formally submitted to the BLM.

Arturo Mine Project

The proposed Arturo Mine Project would be an expansion of the existing Dee Gold Mine that is currently in reclamation and closure. The project is located approximately six miles north-northwest of Barrick's Goldstrike Mine, near the northern end of the Carlin Trend. This project would be developed primarily on public lands that consist of existing authorized mining disturbance, reclaimed authorized mining disturbance, and undisturbed land, and private lands controlled by Barrick-Dee Mining Venture. The project would disturb a total of 2,774 acres of public and private land including 270 acres of existing disturbance, 542 acres of reclaimed

mining disturbance, and 1,962 acres of new land disturbance. The Arturo Mine Project Draft EIS was completed January 18, 2013 and is available at the BLM Elko District Office.

Hollister Underground Mine Project

The proposed Hollister Underground Mine Project would expand existing underground exploration activities to a full-scale producing underground gold and silver mine, including the development of new facilities and expanded surface exploration. The project is located in the northern end of the Carlin Trend, within Elko County, Nevada, approximately 14 miles northwest of Barrick's Goldstrike Mine, just north of the Rossi Mine. The project is 47 miles northwest of Elko, 38 miles northeast of Battle Mountain, and 64 miles northeast of Winnemucca, Nevada. A total of 80.2 acres of public land administered by the BLM and 10.8 acres of private land are included in the project footprint. The 91 total acres includes 58.8 acres of previously disturbed lands and 32.2 acres of new disturbance. The study area includes the proposed surface and underground exploration areas and the main project facilities. As part of the proposed project, the surface exploration program would be expanded from the existing authorized 25 acres to 50 acres within the project boundary. A new powerline to serve the mine is part of the proposed operation. A Final EIS public review period closed August 5, 2013.

Ormat Geothermal Power Plant Expansion

Ormat is proposing to expand the Tuscarora Geothermal Power Plant located in the Independence Valley, approximately 70 miles north of Elko, Nevada. With the Department of Energy as the lead agency for NEPA and the BLM as a cooperating agency, Ormat is proposing 10 new well sites, a new power plant, pipelines, and new road construction for approximately 64 acres of new disturbance.

3.3 Analysis of Resources

3.3.1 Cultural Resources

Regulatory Framework:

Projects requiring federal funds and permits require compliance with the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470 et seq.) and its implementing regulations, Protection of Historic Properties (36 CFR 800). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on Historic Properties (i.e., those properties deemed eligible for listing or formally listed on the National Register of Historic Places) and affords the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Office (SHPO), and interested tribal governments an opportunity to comment on the findings of these federal agencies, as appropriate. Regulations in 36 CFR 800 provide a process for satisfying the requirement of Section 106, namely, resource identification (inventory or survey), significance evaluation, assessment of adverse effects on the significant Historic Properties, and the resolution of adverse effects through consultation to avoid, minimize, or provide mitigation. Adverse effects include, but are not limited to, destruction or alteration of all or part of a property, removal from or alteration of its surrounding environment in a manner inconsistent with applicable law; introduction of visual, audible, or atmospheric elements that diminish the integrity of the property's significant historic features; transfer, sale or lease of property out of federal ownership without adequate conditions or restrictions regarding preservation, maintenance, or use; and neglect of a property resulting in its deterioration or

destruction (36 CFR 800.5). The Nevada State Protocol Agreement outlines the manner in which the BLM and the SHPO agree that the BLM will meet NHPA compliance.

Affected Environment:
The CESA (Figure 3-4) includes the project's defined Area of Potential Effect (APE) expanded to 150 feet of either side of the proposed action, alternative alignment(s), and all identified and potential material storage areas. A Class I inventory identified areas within the CESA that have complete and sufficient inventory to meet legal requirements. Areas not meeting legal compliance were subjected to a Class III inventory, regardless of property ownership.

All cultural resource properties located within the CESA were evaluated for their potential for eligibility to the National Register of Historic Places.

Assessment Data:
Of the 674.6 acres of the CESA, a total of 625.2 acres were found to have been previously inventoried to acceptable legal standards. 49.4 acres were Class III inventory surveyed as part of the analysis of the Proposed Action. Prior to the current Class III inventory, a total of 2 Historic Properties were located within the CESA. Of these Historic Properties, both of which have been subsequently data recovered and removed from eligible status by others.

With the results of the current Class III inventory, a total of 1 Historic Property is known to exist within the CESA (CrNV-12-9948, a segment of the Victory Highway). To the extent practicable, the BLM shall ensure that PPC would avoid adverse effects to Historic Property through comprehensive application of the Control Measures/Design Features described in Section 2.1.4.

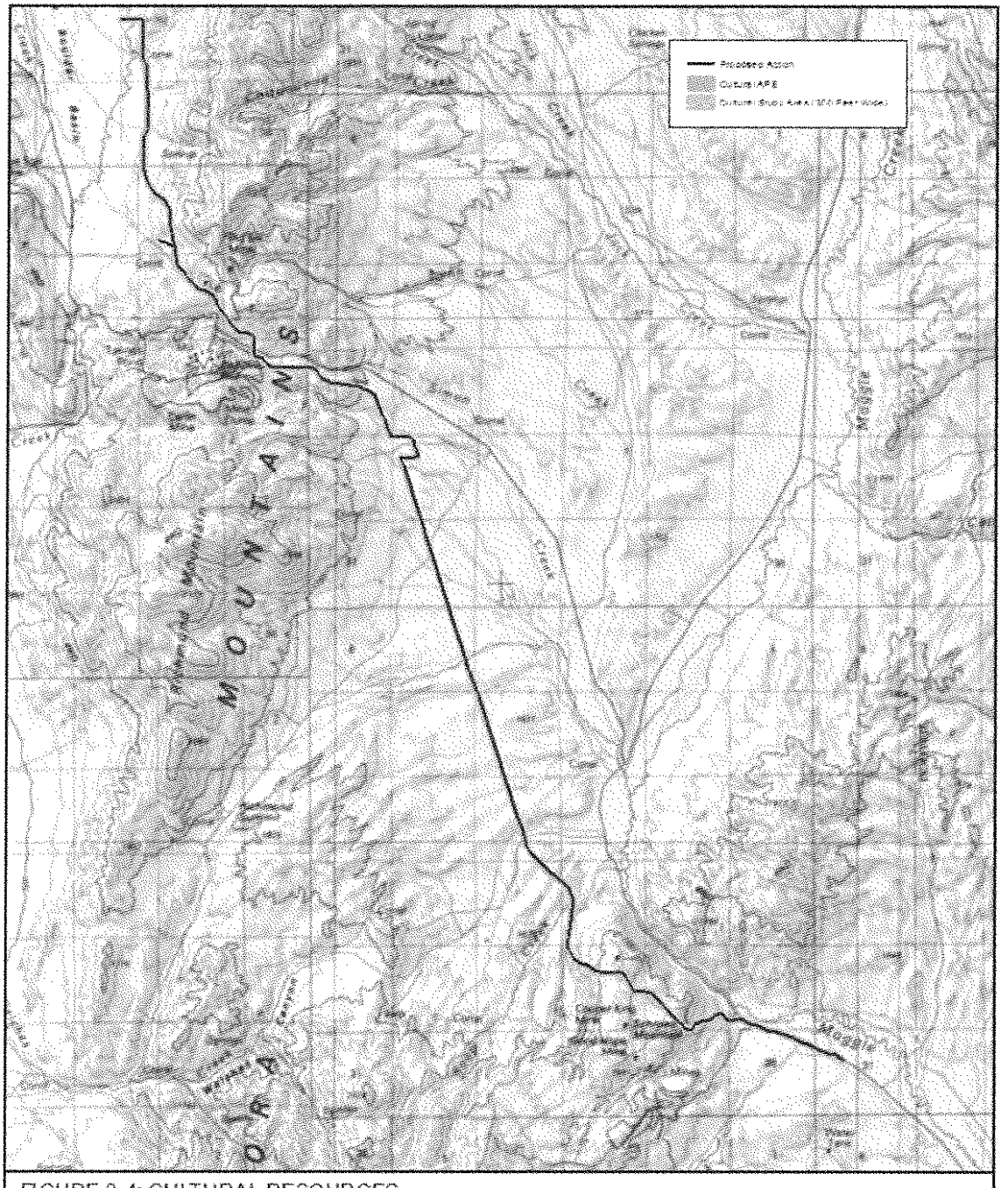

FIGURE 3-4: CULTURAL RESOURCES APE (CESA) AND STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

Environmental Consequences:
Section 106 of the NHPA requires that federal agencies take into account the effect of an undertaking on Historic Properties and provide the ACHP an opportunity to comment. Historic property, as defined by the regulations that implement Section 106, means "any prehistoric or historic district, site, building, structure, or object included, or eligible for inclusion, in the NRHP." The term includes properties of traditional religious and cultural importance to any Native American tribe that meet the National Register criteria.

Potential impacts to Historic Properties are assessed using the "criteria of adverse effect" (36 CFR 800.5[a][1]): "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

Proposed Action:
A total of 29 previous reports have been conducted, in part or in whole, within the CESA. Of these, 25 document inventories, 1 is a data recovery plan, 2 are reports of actual data recovery efforts, and 1 is a Class I overview. The majority of these inventories are related to mineral exploration and expansion, as well as utility construction, roadway maintenance, and other land uses. A total of 17 sites were recorded during the inventories. These consist of 15 prehistoric sites, 1 historic site, and 1 multi-component site. Of the 17 sites, 2 are eligible for the NRHP and 15 are not eligible. Both of the eligible sites (which met Criterion D) have been treated and have been removed from eligible status.

A Class III inventory was conducted to address areas within the CESA not covered by previous inventories. That inventory resulted in the extension of one previously documented historic period cultural resources, the identification of one prehistoric period cultural resource, and three isolates (2 prehistoric, 1 historic). Of the two documented sites, 1 is eligible for the NRHP under Criterion A. The other site is not eligible for the NRHP.

One Historic Property eligible under Criteria A is located within the project cultural CESA and the EPP ROW. Any potential adverse effect to this property would be mitigated through project design and implementation including construction of the pipeline within existing disturbance as detailed in Section 2.1.4 Construction Measures/Design Features of the Proposed Action.

No Action Alternative:
Under the No Action Alternative, the proposed pipeline and associated facilities installation that would comprise the proposed project would not be developed. Therefore, no effects to Historic Properties are anticipated under the No Action Alternative.

Cumulative Effects:
Section 3.2 of this EA describes the past, present, and RFFAs. As directed by law, cultural resources inventories are conducted for any actions involving federal lands, and adverse effects to Historic Properties avoided or mitigated as appropriate. Avoidance through project redesign is the preferred method of mitigation; however, when avoidance is not feasible, data recovery or other forms of mitigation are implemented prior to ground-disturbing activities. Unavoidable

adverse effects to Historic Properties would be mitigated in consultation with the SHPO and the Tribes if appropriate. Therefore, the proposed project is not expected to cumulatively contribute to direct effects to historic properties. However, if data recovery is necessary to mitigate unavoidable adverse effects to historic properties, the process would recover a substantial amount of data but ultimately the site would be destroyed by the undertaking preventing future opportunities for scientific research, preservation, or public appreciation. Over time, this would represent a cumulative loss.

Indirect effects, such as illegal collecting of artifacts, have occurred and most likely would continue to occur in the CESA through increased access, development, and increased human presence, as a result of past, present, and RFFAs.

Monitoring and Treatment Measures:
Unavoidable adverse effects to known Historic Properties identified within the APE would be treated in consultation with the SHPO and Tribes if appropriate. Any subsurface archaeological material discovered during construction activities would be treated in accordance with the law.

The BLM will meet all requirements of Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001 et seq (NAGPRA) for all discoveries of human remains and associated objects in accordance with 43 CFR 10 and BLM IM 2007-002 in the event of an unanticipated discovery of human remains during the installation of the pipeline or facilities. If human remains, remains thought to be human, associated or unassociated funerary objects, or objects of cultural patrimony are discovered, work within 100 feet of the discovery would stop immediately. Oral notification of the discovery shall be made to the BLM and the SHPO by PPC or its contractors immediately, followed by written notification. Upon notification, the BLM would notify the appropriate law enforcement authorities, the county coroner, and appropriate tribes and potentially interested parties. If the remains are determined to not be of forensic importance, an assessment of the remains would be made.

3.3.2 Native American Concerns

Regulatory Framework:
Federal law and agency guidance require the BLM to consult with Native American tribal governments concerning the identification of cultural values, religious beliefs, and traditional practices of the Native American peoples that may be affected by actions on BLM-administered lands. This consultation includes the identification of places (i.e., physical locations) of traditional cultural importance to the affected Native American tribes. Places that may be of Native American traditional cultural importance include, but are not limited to:

- Locations associated with the traditional beliefs concerning tribal origins, cultural history, or the nature of the world;
- Locations where religious practitioners go, either in the past or the present, to perform ceremonial activities based on traditional cultural rules or practice; Ancestral habitation sites; Trails; Burial sites; and Places from which plants, animals, minerals, and waters believed to possess healing powers or used for other subsistence purposes, may be taken.
- Some of these locations may be considered sacred to particular Native American individuals or tribes.

- In 1992, the NHPA was amended to explicitly allow that "properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion on the National Register of Historic Places." If a resource has been identified as having importance in traditional cultural practices and the continuing cultural identity of a community, it may be considered a "Traditional Cultural Property" (TCP). To qualify for nomination to the NRHP, a TCP must:
    - Be more than 50 years old;
    - Be a place with definable boundaries;
    - Retain integrity; and
    - Meet certain eligibility criteria as outlined for cultural resources in the NHPA.

In addition to NRHP eligibility, some places of cultural and religious importance also must be evaluated to determine if they should be considered under other federal laws, regulations, directives, or policies. These include, but are not limited to, the Native American Graves Protection and Repatriation Act of 1990, American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act (ARPA) of 1979, and Executive Order (EO) 13007 (Sacred Sites) of 1996.

The effects of federal undertakings on properties of religious or cultural significance to contemporary Native Americans are given consideration under the provisions of EO 13007, American Indian Religious Freedom Act, and amendments to the NHPA. The NHPA integrates Indian tribes into the Section 106 compliance process and also strives to make the NHPA and National Environmental Policy Act procedurally compatible. Furthermore, under Native American Graves Protection and Repatriation Act, culturally affiliated Indian tribes and the BLM jointly may develop procedures to be taken when Native American human remains are discovered on federal land.

Tribal ethnographic resources are associated with the cultural practices, beliefs, and traditional history of a community. In general, ethnographic resources include places in oral histories or traditional places, such as particular rock formations, geothermal water sources, or a rock cairn; large areas, such as landscapes and viewscapes; sacred sites and places used for religious practices; social or traditional gathering areas, such as racing grounds; natural resources, such as plant materials or clay deposits used for arts, crafts, or ceremonies; and places and natural resources traditionally used for non-ceremonial uses, such as trails or camping locations.

Affected Environment:

Tribal Consultation: The BLM, Elko District, Tuscarora Field Office initiated consultation and requested information, comment, issues, and concerns and shared information with the groups listed in Table 7. Consultation and communication with these tribal/band governments have included letters, phone calls, and visits with the individual Tribal/Band Councils.

Table 7. Summary of Native American Consultation (consultation is ongoing).

Name of Tribe or Band	Date of Contact	Type of Contact	Comments/Notes
Te-Moak Tribe	7-25-2013 11-19-2013	Letter Council Meeting	Letter describing the proposed project. Information sharing at Councils request. Request for copy of EA for review.
Battle Mountain Band	7-25-2013 07-25-2013	Council Meeting	Letter describing the proposed project. Information sharing at Councils request. Request for copy of EA for review.
Elko Band	7-25-2013 07-31-2013	Council Meeting	Letter describing the proposed project. Information sharing at Councils request. Request for copy of EA for review.
	7-25-2013 11-19-2013	Council Meeting	Letter describing the proposed project. Information sharing at Councils request. Request for copy of EA for review.
South Fork Band	7-25-2013 08-01-2013	Council meeting	M Letter describing the proposed project. eeting cancelled.
	7-25-2013 11-18-2013	Council Meeting	Letter describing the proposed project. Information sharing at Councils request. Request for copy of EA for review.
Wells Band	7-25-2013 08-19-2013	Council meeting	Letter describing the proposed project. Information sharing at Councils request. Request for copy of EA for review.
	7-25-2013 11-18-2013	Council Meeting	Letter describing the proposed project. Information sharing at Councils request. Request for copy of EA for review.

Assessment Data:

The NEPA process does not require a separate analysis of impacts to religion, spirituality, or sacredness. As a result, references to such beliefs or practices convey only the terminology used by participants involved in the ethnographic studies and tribal consultation. This terminology does not reflect any BLM evaluation, conclusion, or determination that something is or is not religious, sacred, or spiritual in nature, but conveys only the information that has been gathered through tribal consultation and coordination and current and historic ethnographic study.

Tribal consultation was initiated in July 2013. Secondarily to this, several effects analysis issues were identified based on information provided through the ethnographic studies conducted over the last 20 years, the background research and information provided through Tribal consultation for current and on-going projects across the District. The ethnographic based data indicate that two TCPs exist well outside of the CESA at approximately six, and twelve to fifteen miles west of the proposed project area.

Known issues of concern have remained constant through ethnographic research and on-going information sharing. These include the overall health of all water sources, riparian species, and historic remains (cultural resources). No issues of Native American Concern have been identified specifically within the project area through current consultation efforts.

Environmental Consequences:

Proposed Action:

No known or identified issues of traditional value or other concern have been identified within the project area. No pre-contact era or Tribally identified archaeological sites of interest have been located within the project area. Therefore, no effects to issues of Tribal values or concerns are anticipated under the No Action Alternative.

No Action Alternative:
Under the No Action Alternative, the proposed pipeline and associated facilities installation that would comprise the proposed project would not be developed. Therefore, no effects to issues of Tribal values or concerns are anticipated under the No Action Alternative.

Cumulative Effects:
Section 3.2 of this EA describes the past, present, and RFFAs. Ethnographic research, cultural resources inventories, Native American consultation efforts, and personal communication have provided some general information as to potential issues of concern for the Western Shoshone people in this general region, but not specifically within the project area. Archaeological data on file at the BLM supports Western Shoshone historic and prehistoric use of the general project area and is consistent with the traditional/cultural use information provided by contemporary Western Shoshone. Past and present traditional, cultural, and spiritual use information, combined with oral and written histories and the archaeology of the area, support prehistoric, historic, and modern use of the CESA by native practitioners for hundreds if not thousands of years.

To date, no specific issue of Native American concerns were identified or provided by tribal governments and individuals through multiple consultation and communication efforts with the BLM. No specific issues have been identified through the ethnographies of the Western Shoshone in relation to the project area.

3.3.3 Paleontology

Regulatory Framework:
The Paleontological Resources Preservation Act (PRPA) became law in 2009 with the passage of Public Law 111-011. The PRPA includes specific provisions addressing management of these resources by the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), U.S. Fish and Wildlife Service (USFWS), and U.S. Forest Service (USFS). The PRPA confirmed the authority for many policies these agencies already had in place for the management of paleontological resources including issuing permits for collecting paleontological resources, curation of paleontological resources, and confidentiality of locality data. The PRPA only applies to federal lands and does not affect private lands. It provides authority for the protection of paleontological resources on federal lands including criminal and civil penalties for fossil theft and vandalism. Consistent with policy before the passage of the act, the PRPA also includes provisions allowing for casual or hobby collecting of common invertebrate and plant fossils without a permit on federal lands managed by the BLM, the BOR, or the USFS, under certain conditions. Casual collecting is not allowed within National Parks or other lands managed by the NPS. The PRPA directed federal agencies to begin developing regulations, establishing public awareness and education programs, and inventorying and monitoring federal lands.

The BLM also manages paleontological resources (fossils) on federal lands under the following additional statutes and regulations (BLM 2010):

- Federal Land Policy and Management Act of 1976 (P.L. 94-579);
- National Environmental Policy Act of 1969 (P.L. 91-190); and
- Various sections of BLM's regulations found in Title 43 Code of Federal Regulations (CFR) that address the collection of invertebrate fossils and, by administrative extension, fossil plants.

In addition to the statutes and regulations previously listed, fossils on public lands are managed through the use of internal BLM guidance and manuals. Included among these are the BLM Manual 8270 and the BLM Handbook H-8270-1 (BLM 2010). Various internal instructional memoranda have been issued to provide guidance to the BLM in implementing management and protection to fossil resources.

Affected Environment:

Potential Fossil Yield Classification:

The BLM has adopted the Potential Fossil Yield Classification (PFYC) system to identify and classify fossil resources on federal lands (BLM 2007). Paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources.

The PFYC system is a way of classifying geologic units based on the relative abundance of vertebrate fossils or scientifically significant fossils (plants and invertebrates) and their sensitivity to adverse impacts. A higher class number indicates higher potential for presence. The PFYC is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class. Instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment.

The PFYC system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources. The classification should be considered at an intermediate point in the analysis, and should be used to assist in determining the need for further mitigation assessment or actions. The BLM intends for the PFYC System to be used as a guideline as opposed to rigorous definitions. Descriptions of the potential fossil yield classes are summarized below in Table 8.

Table 8. Potential Fossil Yield Classification

Class	Description	Basis	Comments
1	Igneous and metamorphic (tuffs are excluded from this category) geologic units or units representing heavily disturbed preservation environments that are not likely to contain recognizable fossil remains.	• Fossils of any kind known not to occur except in the rarest of circumstances • Igneous or metamorphic origin • Landslides and glacial deposits	The land manager's concern for paleontological resources on Class 1 acres is negligible. Ground disturbing activities would not require mitigation except in rare circumstances.
2	Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant invertebrate fossils.	• Vertebrate fossils known to occur very rarely or not at all • Age greater than Devonian • Age younger than 10,000 years before present • Deep marine origin • Aeolian origin • Diagenetic alteration	The land manager's concern for paleontological resources on Class 2 acres is low. Ground disturbing activities are not likely to require mitigation.
3	Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence. Also, sedimentary units of unknown fossil potential.	• Units with sporadic known occurrences of vertebrate fossils • Vertebrate fossils and significant invertebrate fossils known to occur inconsistently; predictability known to be low • Poorly studied and/or poorly documented; potential yield cannot be assigned without ground reconnaissance	The land manager's concern for paleontological resources on Class 3 acres may extend across the entire range of management. Ground disturbing activities would require sufficient mitigation to determine whether significant paleontological resources occur in the area of a Proposed Action. Mitigation beyond initial findings would range from no further mitigation necessary to full and continuous monitoring of significant localities during the action.
4	Class 4 geologic units are Class 5 units (see below) that have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation.	• Significant soil/vegetative cover; outcrop is not likely to be impacted • Areas of any exposed outcrop are smaller than 2 contiguous acres • Outcrop forms cliffs of sufficient height and slope that most is out of reach by normal means • Other characteristics that lower the vulnerability of both known and unidentified fossil localities	The land manager's concern for paleontological resources on Class 4 acres is toward management and away from unregulated access. Proposed ground disturbing activities would require assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action would impact the paleontological resources. Mitigation beyond initial findings would range from no further mitigation necessary to full and continuous monitoring of significant localities during the action.
5	Highly fossiliferous geologic units that regularly and predictably produce invertebrate fossils and/or scientifically significant invertebrate fossils, and that are at risk of natural degradation and/or human-caused adverse impacts.	• Vertebrate fossils and/or scientifically significant invertebrate fossils are known and documented to occur consistently, predictably, and/or abundantly • Unit is exposed; little or no soil/vegetative cover • Outcrop areas are extensive; discontinuous areas are larger than 2 contiguous acres • Outcrop erodes readily; may form badlands • Easy access to extensive outcrop in remote areas • Other characteristics that increase the sensitivity of both known and unidentified fossil localities	The land manager's highest concern for paleontological resources should focus on Class 5 acres. Mitigation of ground disturbing activities would be required and may be intense. Areas of special interest and concern should be designated and intensely managed.

Sources: BLM 2008, 2007.

Paleontological Resources in the Project Area:

The paleontological resources in the project area (Figure 3-5) have a high potential of occurring in the tuffaceous materials in the Carlin Formation (Hockett 2013). Although igneous rocks would commonly be classified as having a low potential fossil yield, the special circumstances of the deposition of the Carlin Formation may have contributed to the preservation of fossils. The

deposits consist of a combination of volcanic tuff, tuffaceous sediment, and non-volcanic detritus. The depositional environment likely helped preserve the bone material of dead animals as well as the high amount of silica contained in the volcanic ash. According to Hockett (2010), the volcanic tuffs are the highly fossiliferous rocks in the Carlin formation, but the tuffs are not the predominant rock-type in the formation. The proposed type-section southwest of Carlin, Nevada described by Regnier (1960) indicates a high degree of variability of deposits within the formation. Descriptions of the Carlin formation in the project area also are indicative of the variability of the Carlin formation (Theodore et al. 2006; Wallace 2003).

The fossils that have been found in the Carlin Formation in the project vicinity are vertebrates and can include varieties of extinct camel, antelope, and ancestors of the horse. Specimens from localities in the Willow Creek area have been placed on display at the Northeastern Nevada Museum in Elko (Hockett 2013). The Carlin Formation would rate 4 or 5 in the PFYC system for high potential for scientifically valuable fossils.

Previous surface area surveys in the general vicinity of the proposed project (2006, 2010) resulted in the collection of a few recognizable vertebrate fossils in eleven localities within the Carlin Trend, most of the fossil material consisted of fragments of fossilized bone of limited scientific value due to the fragmented nature of the material. A preponderance of the materials located had been eroded from its original place of deposition complicating dating efforts. It is possible that important fossils may be unearthed during ground-disturbing activities.

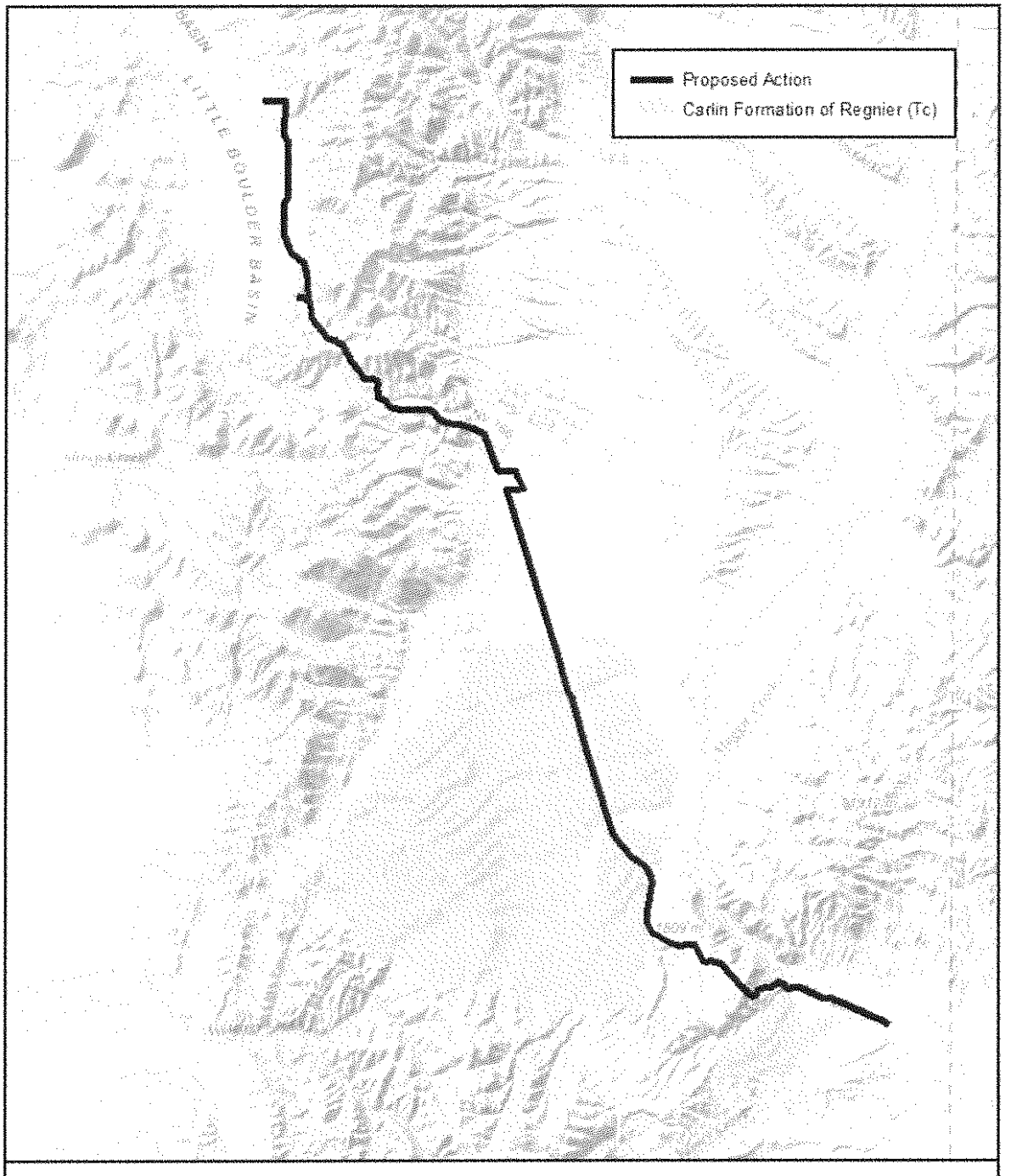

FIGURE 3-5: PALEONTOLOGICAL RESOURCES
EUREKA PIPELINE
ELKO COUNTY, NV
JANUARY, 2014
NOTES

Environmental Consequences:

Proposed Action:
Potential impact on fossils would likely be limited to physical disturbance of intact paleontological deposits through pipeline excavation activities. These paleontological deposits could occur in areas where the subsurface soils have not been previously disturbed. Construction activities that could disturb previously undisturbed Tertiary sediments would be conducted with a Paleontological monitor present. If vertebrate fossils are found all work would stop and the authorized officer would be notified. Please refer to Section 2.1.4 Construction Measures/Design Features.

No Action Alternative:
The No Action Alternative would eliminate potential impacts on paleontological resources in areas of proposed disturbance.

Cumulative Effects:
The Cumulative Effects Study Area (CESA) for paleontological resources is shown on Figure 3-6 (NBMG 2013) and representing the Carlin Trend north of Interstate 80. The CESA extends from Newmont's Gold Quarry/South Operations Area Project in the south to the Midas Mine in the north and includes mining and mineral exploration activity in most of the Carlin Trend (BLM 2012). The past, present, and future actions that have the potential to effect the paleontological record within the CESA are described in Section 3.2. The various projects in the CESA are located on a variety of bedrock formations with widely varying fossil potential. The cumulative impacts to paleontological resources in the CESA would be difficult to quantify for past, present, and future actions. Incremental adverse effects to paleontological resources in the Carlin Trend due to the Proposed Action would be very small because of the disturbance that has already occurred in the Carlin Formation outcrop areas in the CESA (Moore 2002; Norby 2002; Theodore et al. 2006).

Limited discoveries of fossils have been found in the Carlin Trend. Prehistoric camel and horse fossils were found in the Carlin formation at the Gold Quarry Mine (BLM 2002, 1993).

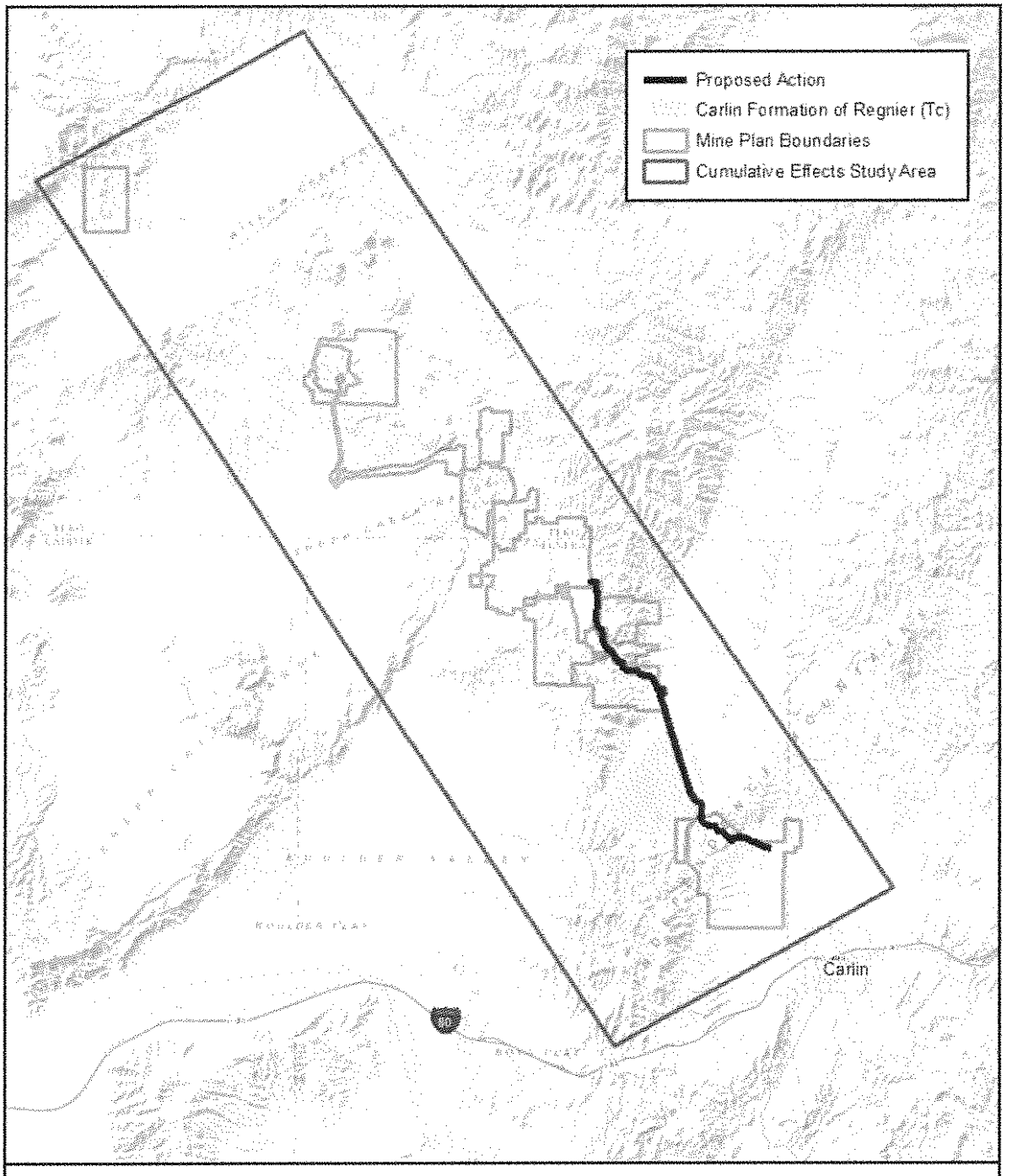

FIGURE 3-6: PALEONTOLOGICAL RESOURCES CESA
EUREKA PIPELINE
ELKO COUNTY, NV
JANUARY, 2014

3.3.4 Land Use and Access (including mining claims)

Affected Environment:

The primary existing land uses in the EPP study area are mining (exploration and mineral beneficiation) and wildlife habitat. Federal law allows use of public lands concurrently by multiple users. EPP's proposed alignment would cross over public land. The land within the study area is primarily privately owned by Newmont Mining Corporation and is under controlled access. The remaining land is public land managed by the BLM as is primarily contained within the area of controlled access. The north and south staging areas would be located on private land with the mid alignment staging area located on public land. The Leeville Regulating/Meter Station and MLV would be located on public land and the Gold Quarry Meter Station would be located on private land. Construction access to the EPP alignment would be via State Route 766 and existing dirt roads. No new access roads would be required to complete construction of the EPP.

There are several mining claims and BLM authorized rights-of-way with potential to overlap the study area. There are no active oil and gas leases, geothermal leases, or mineral materials (sand/gravel) contracts in the study area (BLM 2013e). The Proposed Action would cross one right-of-way grant held by NV Energy at several locations, one held by the Nevada Department of Transportation (NDOT) for State Route 766 at one location, and cross the Newmont-Barrick Mine Road at one location. As requested by NV Energy, the EPP will cross the NV Energy right-of-way at least 40 feet from any existing above ground facilities, and an Encroachment Permit will be required by NDOT.

Environmental Consequences:

Proposed Action:

Construction of the pipeline could temporarily disrupt public access as construction activities occur adjacent to and cross State Route 766. Such impacts are expected to be minimal with the application of Horizontal Directional Drilling (HDD) under the roadway and would last for less than one day.

Granting rights-of-way for a natural gas pipeline could affect other future uses of the land, such as mining. However, Newmont Mining Corporation, the primary operator in the vicinity of most of the EPP, has reviewed the EPP alignment and has determined that they have no prospective uses that the pipeline would affect at this time.

PPC has contacted the two mining claimants with mining claims in or close to the study area. Neither has indicated a concern regarding the Proposed Action.

No Action Alternative:

Because the EPP project would not be constructed, there would be no impacts to land management and uses.

Cumulative Effects:

The CESA is defined as the vicinity of the Carlin Trend. The Carlin Trend is generally defined as the area from the Midas Mine located approximately 50 miles northwest from Carlin and the

Ormat Geothermal Plant located approximately 10 miles northeast of Tuscarora, south to the Gold Quarry Mine located approximately 3 miles northwest of Carlin (Figure 3-3). Given that the EPP alignment lies almost entirely within existing BLM permitted Plans of Operation (POO) for Newmont Mining Company and Barrick Gold Corporation, with a small portion (±3.0 acres) located outside current POO boundaries in mostly disturbed areas (0.8 acre public, 2.2 private), it is expected that the EPP would not result in a measureable incremental impact to land uses in the CESA.

3.3.5 Wildlife

Affected Environment:

Wildlife habitat quality in the vicinity of the EPP study area has been affected by wildfire and mining related activities and facilities (BLM 2013b) as presented on Figures 3-1.1 and Figures 3-1.2 through 3-1.11 in Appendix 1. Within the study area, approximately 197 acres of sagebrush/grassland habitat are currently intact. Wildlife species and habitats found within the vicinity of the study area are typical of the Great Basin region and are described below.

Large Mammals:

Mule Deer (*Odocoileus hemionus*):

NDOW's Management Unit 06 (MU06) is characterized primarily by sagebrush steppe communities (Cronquist et al. 1972). The wildlife study area provides transitional habitat for mule deer during spring and fall migration from higher elevations of the north Tuscarora Mountain Range, Independence Mountains, Bull Run Mountains and the Adobe Range to winter range in the lower elevations of the south Tuscarora Range, Sheep Creek Range, and Boulder Valley (BLM 2002a). Mule deer prefer cover provided by tall shrubs and trees in the spring, summer, and fall. The EPP would cross mule deer transitional habitat and migration areas (NDOW 2012) as shown on Figure 3-7 and 3-8. There are two corridors that are of particular note as they have become "pinch points" due to existing mining activities (BLM 2013b). The first is the West Flank corridor located near the north extent of the EPP in the Leeville Mine POO, with the second located near the south extent of the EPP within the South Operations Area Project (SOAPA) near Soap Creek – the Maggie Creek/East Flank corridor (NDOW 2012). It is not necessarily a physical barrier that deters deer from using a corridor, but rather the stress involved with navigating the physical barrier that may result in indirect physiological impacts to mule deer during migration (BLM 2013b). With gold prices remaining moderately high, increases in mining activity continue to be of the greatest concern with respect to availability of migration areas (NDOW 2013b).

As described in Section 2.1.4, the Proposed Action includes Construction Measures/Design Features to minimize impacts from the construction and operation of the EPP. The EPP proposed construction schedule may overlap with the mule deer migration periods (LOP). If that situation occurs, under the Proposed Action PPC would limit construction activities along the EPP temporary construction right-of-way during the applicable LOP (BLM 2013b) to BLM and NDOW approved noncontiguous construction blocks. The approved construction blocks would ensure that a majority of the historic mule deer migration area would not be restricted by EPP construction activities.

If construction of the EPP were to occur outside of the mule deer LOPs (BLM 2013b), such as mid June through late September the standard pipeline construction approach would apply. This standard approach is detailed in Section 2.1.2 Installation of the Pipeline.

To the furthest extent possible, under all construction schedule scenarios, each length of open trench would be limited to 1,200 feet at a time. If greater than 1,200 feet of trench would be open at any time in a particular location, the trench would be bridged and ramped every 1,200 feet to protect wildlife species and livestock, providing both a means to cross the open trench or to escape if needed.

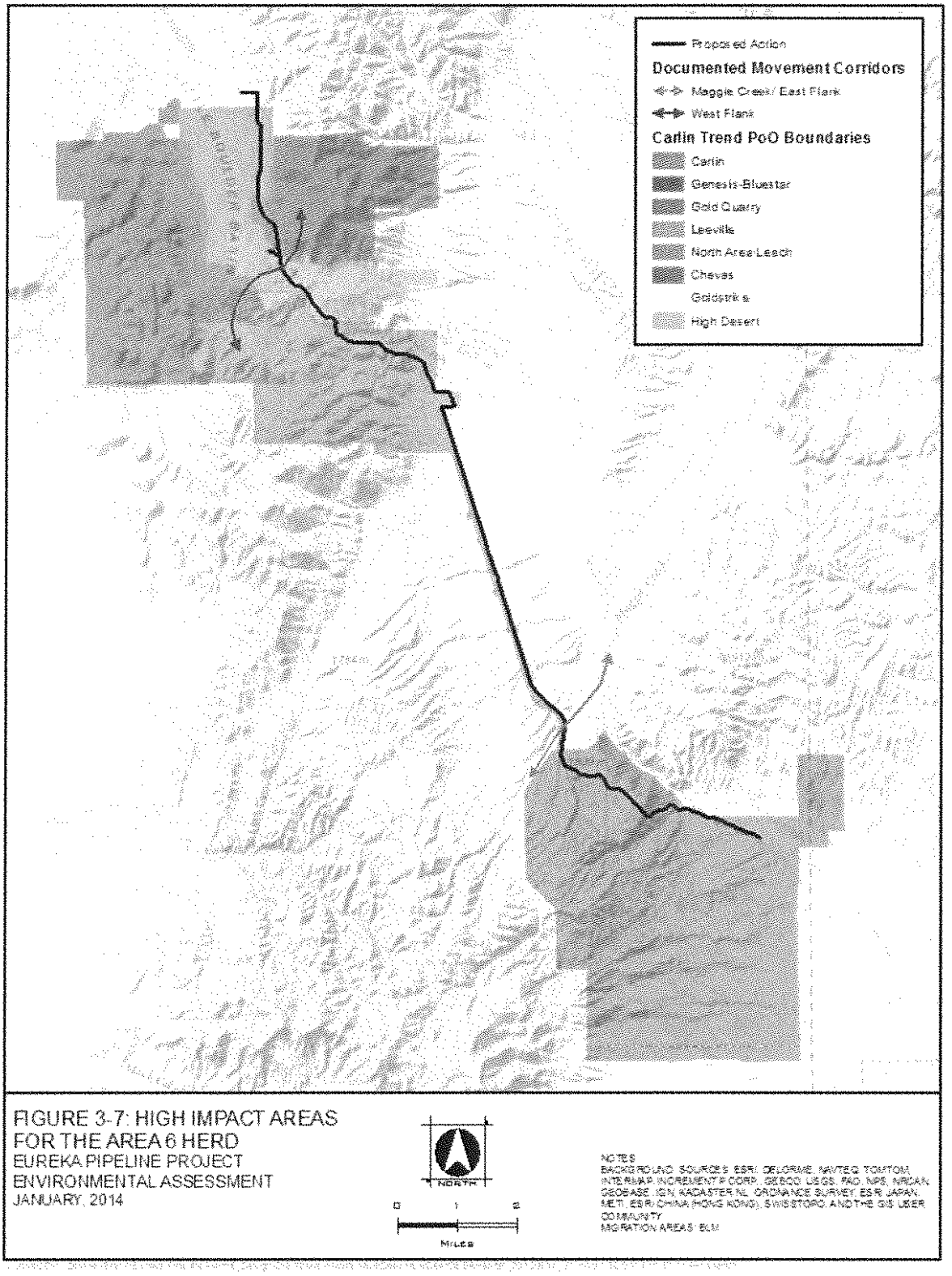

FIGURE 3-7: HIGH IMPACT AREAS FOR THE AREA 6 HERD
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

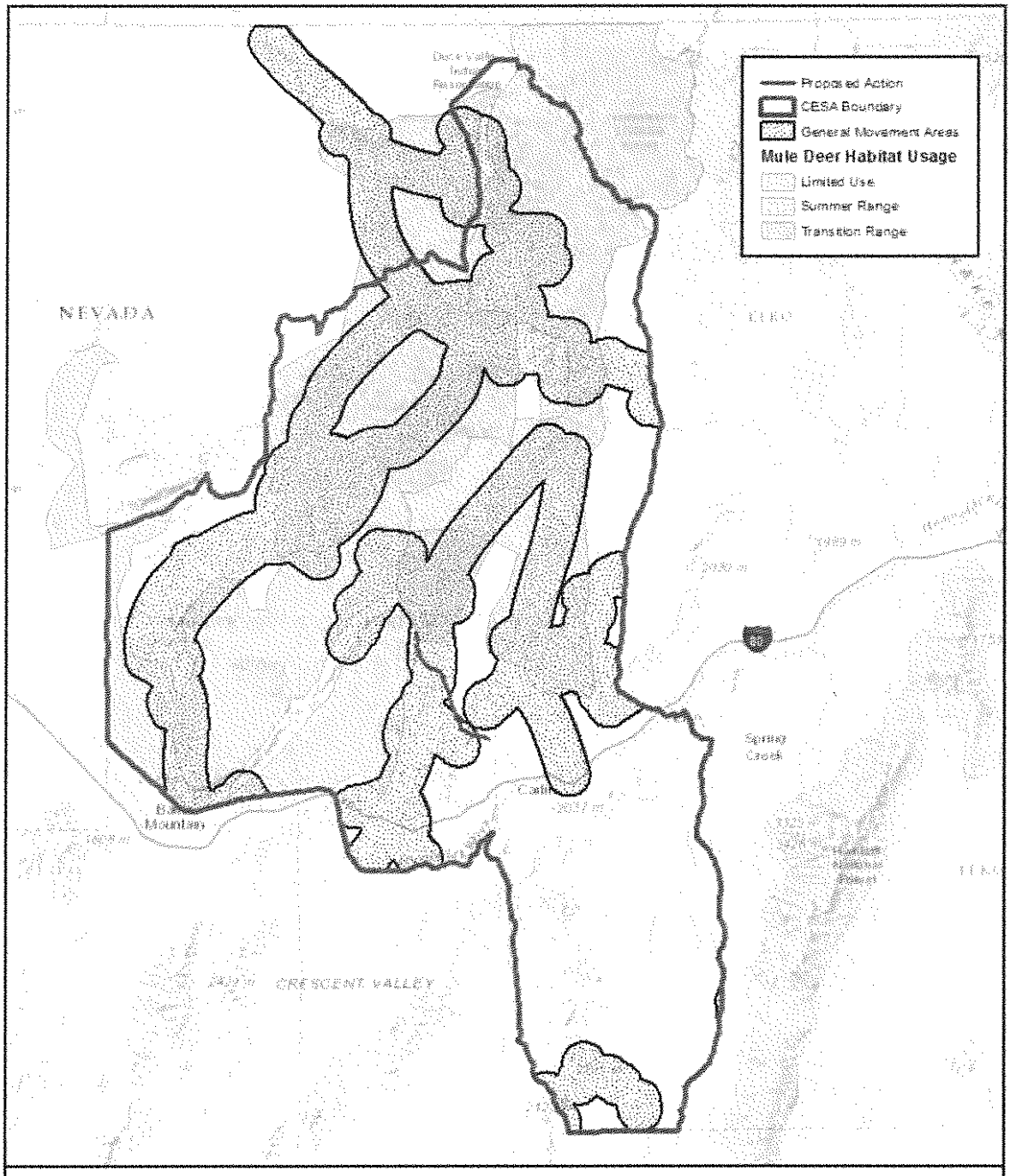

FIGURE 3-8: MULE DEER MIGRATION AREAS AND CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
BACKGROUND SOURCES: ESRI, DELORME, NAVTEQ, TOMTOM, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, AND THE GIS USER COMMUNITY
MIGRATION AREAS: BLM

Pronghorn antelope (*Antilocapra americanas*):
Pronghorns occupy MU 06 near the study area in areas dominated by gently rolling to flat terrain with an open topography (Figure 3-9). Areas with low stature vegetation allow the antelope to see far and move quickly away from threats. Portions of recently burned areas in MU06 likely negatively affect pronghorn at least in the short term (NDOW 2013b). The majority of the EPP proposed alignment would be located within pronghorn summer habitat.

Elk (*Cervus canadensis*):
Elk are distributed from British Columbia through the western United States south to central Arizona and New Mexico. Due to this wide distribution, elk live in a variety of ecosystems ranging from conifer forests to desert grasslands. Elk prefer to browse on grasses and forbs during the growing season and woody vegetation during the winter. The majority of the EPP would be located in low-density elk habitat (Figure 3-10). The summer 2012 Willow fire consumed over 42,000 acres within the North Tuscarora Range of which several thousand acres were reseeded in early 2013. Elk are expected to benefit from the increase of perennial grasses that will likely be established within seeded areas of the fire perimeter (NDOW 2013b).

Mountain Lions (Puma concolor):
Mountain lions are classified as a big game species in Nevada. Mountain lions are fairly common in north-central Nevada and occupy the higher elevations surrounding the study area (NDOW 2013b). Mountain lion habitat remains in good condition throughout the Eastern Region of Nevada with ample prey base and minimal loss of habitat (NDOW 2013b).

Small Mammals:
Several rabbit species are known to occur within the study area including desert cottontail, pygmy rabbit, and black-tailed jackrabbit. Black-tailed jackrabbits and desert cottontail are common in sagebrush habitats from the valley floor to the upper foothills. Pygmy rabbits are typically found in areas with deeper developed soils in taller sagebrush habitat. Although the pygmy rabbit is considered a game species in Nevada, it is also a BLM sensitive species and is discussed in detail in Section 3.3.6 Special Status Species. The mountain cottontail is common throughout foothills and in mixed vegetative communities with a substantial shrub component. Additional mammal species that may occur within the study area include gray fox, kit fox, bobcat, muskrat, mink, coyote, badger, short-tailed weasel, long-tailed weasel, and spotted skunk, deer mouse, western harvest mouse, vagrant shrew, Merriam's shrew, Ord's kangaroo rat, sagebrush vole, golden-mantled ground squirrel, least chipmunk, and desert woodrat (BLM 2012b).

Bats:
The BLM conducted field surveys in 2013 to determine the species of bats that have potential to occur in historic underground workings to the east of the EPP study area (BLM 2013b). The only species that was found in the BLM survey area was the Townsend's big-eared bat located approximately ½ mile east of the EPP study area. Other species of bats that may occur in the vicinity of the EPP study area include pallid bat, big brown bat, small-footed myotis, little brown myotis, California myotis, long-eared myotis, long-legged myotis, Yuma myotis, and western pipistrelle bat (BLM 2012b).

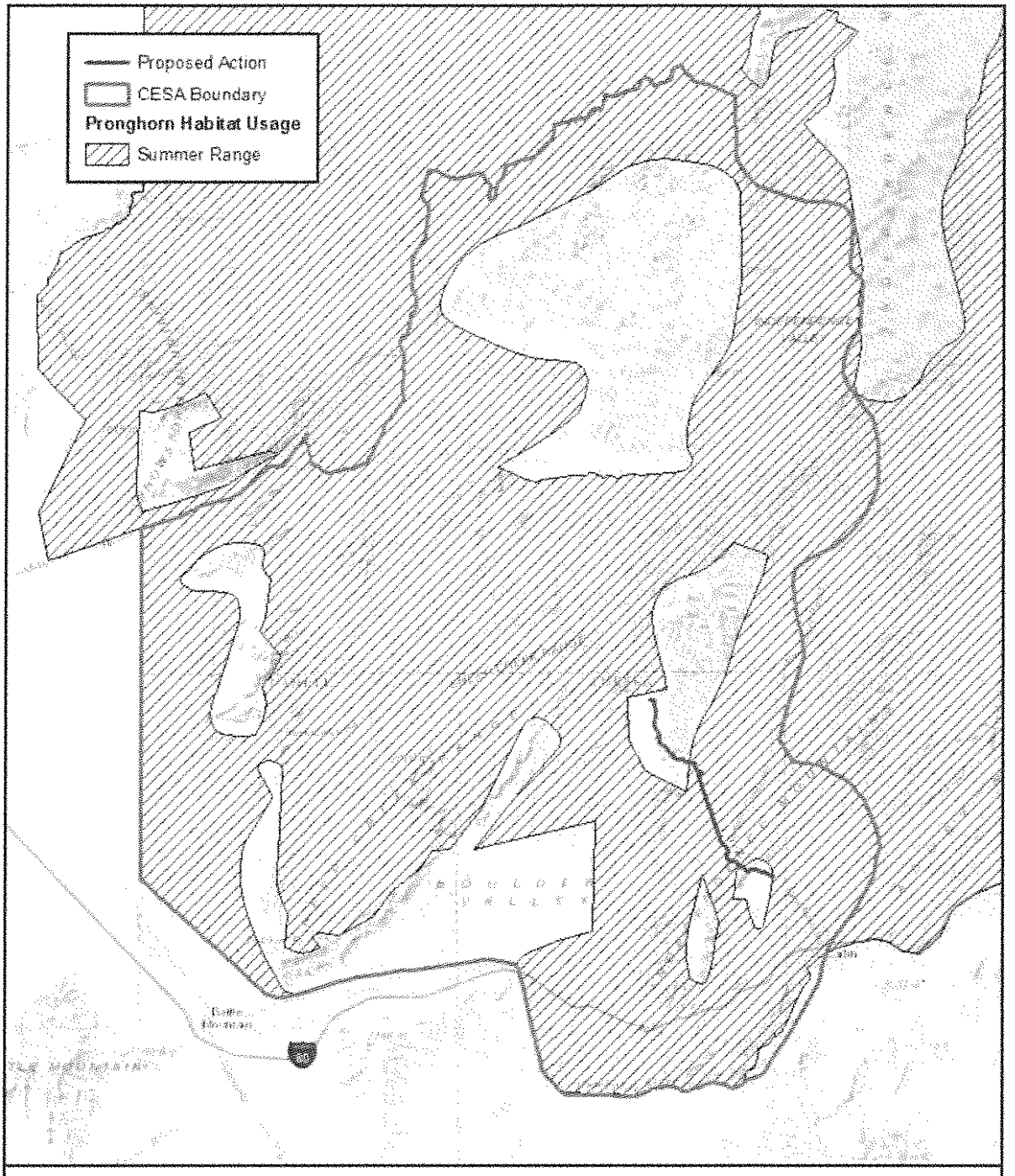

FIGURE 3-9: ANTELOPE HABITAT AND CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
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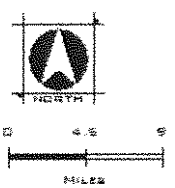


NOTES
BACKGROUND: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community
WILDLIFE: NDOW

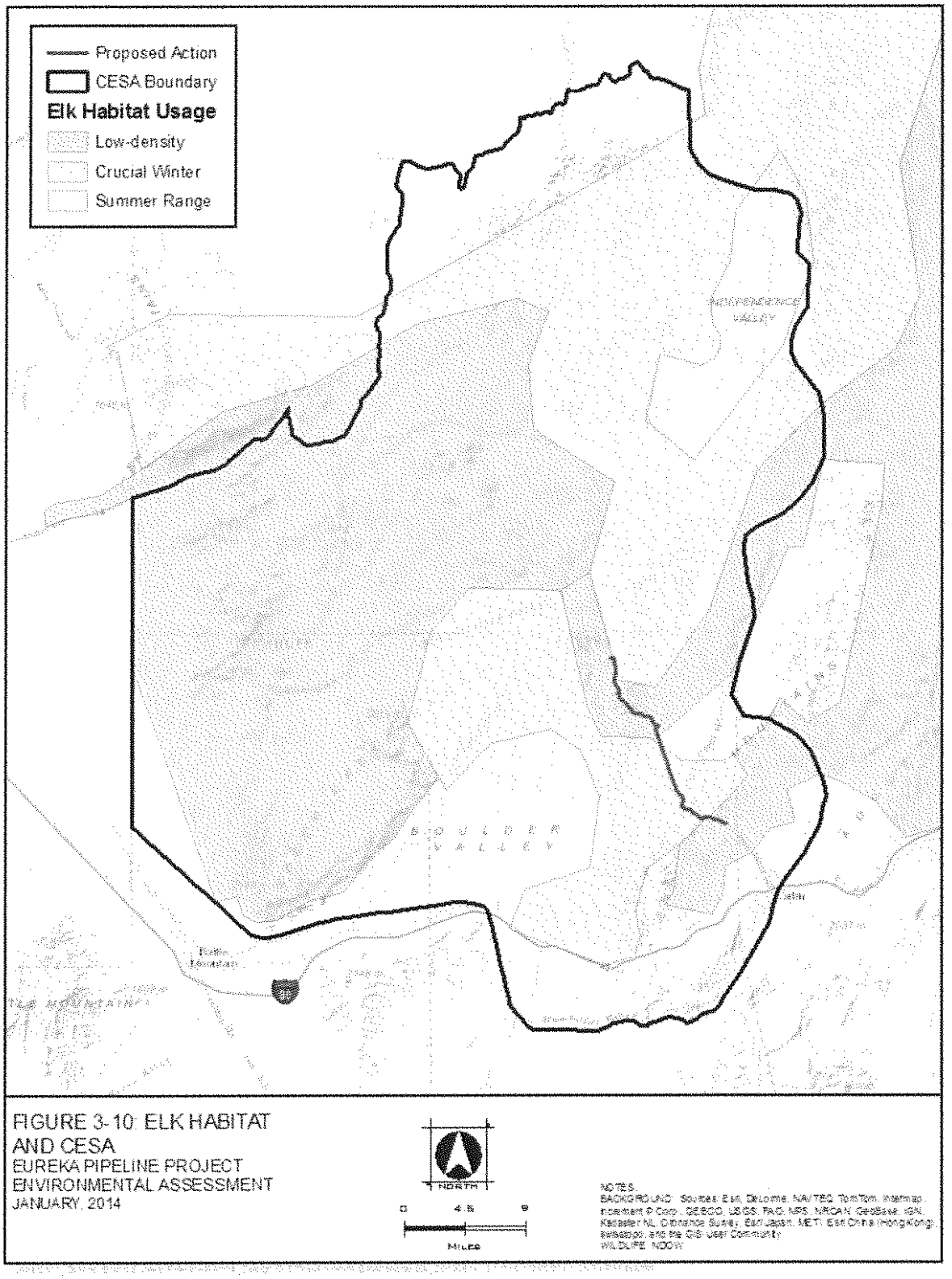


FIGURE 3-10 ELK HABITAT AND CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

Other Species:
A diversity of species occupy a wide range of trophic levels and habitat types within the study area (Figure 3-11).

Birds:
A variety of bird species, migratory and non-migratory typical of the sagebrush and grassland communities are anticipated to occur in the study area. These birds are typically present within the respective Great Basin habitats from spring through fall. Species expected to occur within the study area include American robin, horned lark, chipping sparrow, Brewer's sparrow, mourning dove, western meadowlark, sage thrasher, and the common raven. Additional birds have been identified by the BLM as potentially occurring within the study area (BLM 2012b).

Raptors:
Raptors known to occur within the Tuscarora Range and Independence Mountains in proximity to the EPP study area include red-tailed hawk, golden eagle, prairie falcon, and ferruginous hawk (BLM 2013b) (Figure 3-12). Ferruginous hawk, golden eagle and prairie falcon are discussed in more detail under Section 3.3.6 Special Status Species.

The red-tailed hawk is associated with a variety of habitats including sagebrush, grassland, riparian, and pinion-juniper and is one of the most common and widespread hawks in North America. It is protected under the Migratory Bird Treaty Act ((MBTA), 16 U.S.C. 703-712) and Executive Order (EO) 13186 (66 Federal Register [FR] 3853). Two active red-tailed hawk nests have been confirmed to be located within 1 mile of the EPP alignment.

Game Birds
Upland game bird species commonly found within the study area include chukar and mourning dove. Chukar are typically associated with perennial water sources, mesic areas, and rugged slopes or rock outcrops. They are resident breeders in dry, open, and often hilly country that nest in scantily lined ground scrapes laying eight to 20 eggs. Chukar feed on insects and a wide variety of seeds, including cheatgrass. Rocky habitats in the study area are the primary habitat for this species. Chukar were observed within the study area in August 2013 (Wood Rodgers 2013). Mourning dove are found in a wide range of habitats usually in close proximity to water and are most likely to occur in the study area during spring, summer and fall (BLM 2012b).

Although a large portion of Greater sage-grouse habitat has been removed by mining activities within the Carlin Trend, incidental use of the area by Greater sage-grouse does still occur outside of concentrated mining activities (BLM 2013b). The remaining fragmented habitat has been categorized by the BLM as Preliminary General Habitat (PGH). Greater sage-grouse are discussed in more detail in Section 3.3.6.

Due to limited habitat, unlikely waterfowl use may occur at mining activity water sources in the study area. Species that may occur within the study area include mallard, blue-winged teal, wigeon, gadwall, and pintail (BLM 2012).

Migratory Birds:
As stated above, Migratory Bird species are protected under the MBTA and EO 13186. Pursuant

to the EO a draft MOU among the BLM, USFS, and USFWS was drafted in order to promote conservation and protection of migratory birds. The EO provides guidance to agencies to promote BMPs for conservation of migratory birds. As a result, the BLM Nevada State Office prepared Migratory Bird BMPs for the Sagebrush Biome to assist BLM field offices in the consideration of migratory birds in land management activities presented in Section 3.3.6 (BLM no date).

In addition to the red-tailed hawk discussed above, the prairie falcon, ferruginous hawk, golden eagle, and western burrowing owl are protected under the MBTA. These species are discussed in more detail under Section 3.3.6 Special Status Species as they have been designated by the BLM Nevada State Office as sensitive species.

Additional migratory birds have been identified by the BLM as potentially occurring within the study area as follows (BLM 2012b):

Table 9. Migratory Birds Potentially Occurring in the Study Area

Common Name	Scientific Name
American robin	*Turdus migratorius*
American kestrel	*Falco sparverius*
Bald eagle	*Haliaeetus leucocephalus*
Black-billed magpie	*Pica pica*
Black-chinned hummingbird	*Archilochus alexandri*
Black-crowned night heron	*Nycticorax nycticorax*
Black-headed grosbeak	*Pheucticus melabocephalus*
Blue-gray gnatcatcher	*Polioptila caerulea*
Brewer's blackbird	*Euphagus cyanocephalus*
Brewer's sparrow	*Spizella breweri*
Bullock's oriole	*Icterus bullockii*
Burrowing owl	*Athene cunicularia*
Cinnamon teal	*Anas cyanoptera*
Chipping sparrow	*Spizella passerine*
Cliff swallow	*Hirundo pyrrhonota*
Common raven	*Corvus corax*
Common snipe	*Gallinago gallinago*
Ferruginous hawk	*Buteo regalis*
Golden eagle	*Aquila chrysaetos*
Greater sage-grouse	*Centrocercus urophasianus*
Horned lark	*Eremophila alpestris*
Juniper titmouse	*Baeolophus ridgwayi*
Killdeer	*Charadrius vociferous*
Lark sparrow	*Chondestes grammacus*
Lazuli bunting	*Passerina amoena*
Lewis' woodpecker	*Melaneroes lewis*
Loggerhead shrike	*Lanius ludovicianus*
Long-eared owl	*Asio otus*
MacGillivray's warbler	*Oporornis tolmiei*
Mallard	*Anas platyrhynchos*
Mourning dove	*Zenaida macroura*
Northern flcoker	*Colaptes auratus*
Northern harrier	*Circus cyaneus*

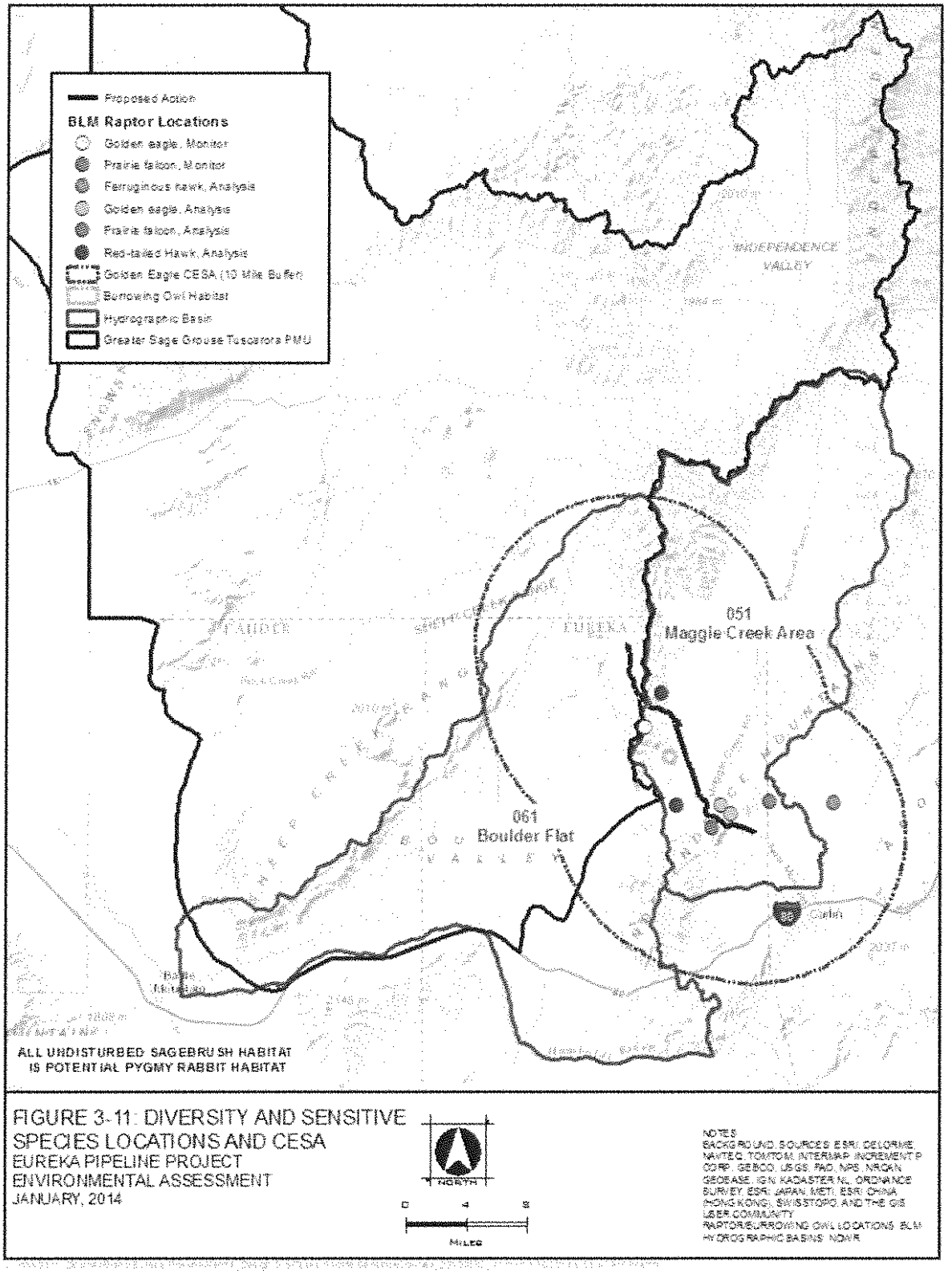
Table 9. Migratory Birds Potentially Occurring in the Study Area (Cont.)

Common Name	Scientific Name
Pinyon jay	*Gymnorhinus cyanocephalus*
Prairie falcon	*Falco mexicanus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Rough-legged hawk	*Buteo lagopus*
Sage sparrow	*Amphispiza belli*
Sage thrasher	*Oreoscoptes montanus*
Say's phoebe	*Sayomis saya*
Short-eared owl	*Asio flammeus*
Snowy egret	*Egretta thula*
Swainson's hawk	*Buteo swainsoni*
Turkey vulture	*Cathartes aura*
Vesper sparrow	*Pooecetes gramineus*
Willow flycatcher	*Empidonax traillii*
Western kingbird	*Tyrannus verticalis*
Western meadowlark	*Stumella magna*
Western tanager	*Piranga ludociciana*
Western wood-peewee	*Contopus sordidulus*
Wilson's warbler	*Wilsonia pusilla*
Yellow-breasted chat	*Icteria virens*
Yellow-headed blackbird	*Xanthocephalus xanocephalus*
Yellow warbler	*Dendroica petechial*
Yellow-rumped warbler	*Dendroica coronata*

Source: BLM 2012b

Reptiles:

In addition to the species already discussed, reptiles, such as Great Basin whiptail, western rattlesnake, bull snake, northern desert horned lizards, Great Basin collared lizard, desert horned lizard, western skink, western fence lizard and long-nose leopard lizards, are likely throughout the EPP study area (BLM 2012a, 2012b). Several lizards were observed during the plant community field reconnaissance survey (Wood Rodgers 2013).


Proposed Action
BLM Raptor Locations
Golden eagle, Monitor
Prairie falcon, Monitor
Ferruginous hawk, Analysis
Golden eagle, Analysis
Prairie falcon, Analysis
Red-tailed Hawk, Analysis
Golden Eagle CESA (10 Mile Buffer)
Burrowing Owl Habitat
Hydrographic Basin
Greater Sage Grouse Tuscarora PMU
INDEPENDENCE VALLEY
051
Maggie Creek Area
061
Boulder Flat
ELKO
EUREKA
ALL UNDISTURBED SAGEBRUSH HABITAT
IS POTENTIAL PYGMY RABBIT HABITAT
FIGURE 3-11: DIVERSITY AND SENSITIVE SPECIES LOCATIONS AND CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014
NORTH
0
4
8
MILES
NOTES
BACKGROUND SOURCES ESRI, DELORME, NAVTEQ, TOMTOM, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, AND THE GIS USER COMMUNITY
RAPTOR/BURROWING OWL LOCATIONS: BLM
HYDROGRAPHIC BASINS: NDWR

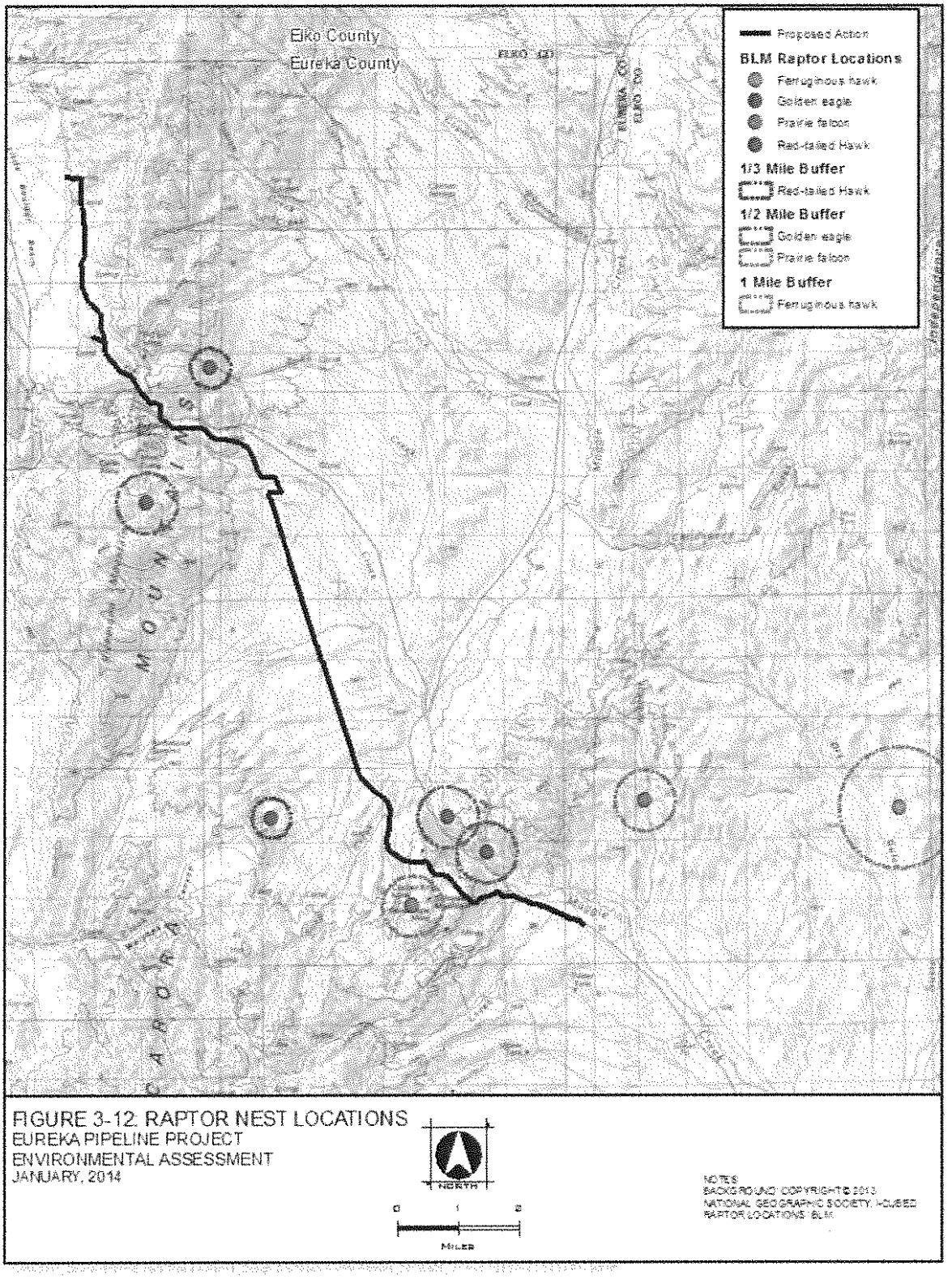


FIGURE 3-12. RAPTOR NEST LOCATIONS
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
BACKGROUND COPYRIGHT © 2013
NATIONAL GEOGRAPHIC SOCIETY, I-CUBED
RAPTOR LOCATIONS: BLM

Environmental Consequences:

Although the majority of the EPP alignment is contained within POO boundaries, wildlife species appear to have fairly free access to available habitat. Of the 270 acres of proposed disturbance associated with construction of the EPP, 124 acres are currently excluded from livestock grazing (BLM 2013e).

The primary issues that can cause impacts to wildlife include disruption of big game movements, fragmentation of native habitats, animal displacement, and direct loss of animals. Potential direct and indirect impacts of the Proposed Action on wildlife can be classified as short term and long-term. Short term direct impacts arise from disruption of big game movements, specifically mule deer during migration, which would cease upon completion of construction and site stabilization within migration areas.

The most common short term wildlife responses to noise and human presence are avoidance or accommodation (BLM 2012b). Avoidance may result in displacement of animals from an area larger than the actual disturbance area such as seeking alternative migration areas. Wildlife avoidance response varies from species to species and can even vary between individuals of the same species. Also, after initial avoidance of human activity and temporary noise-producing areas, certain wildlife species may acclimate to the activity and begin to reoccupy areas formerly avoided even as the disrupting activities continue.

Long-term direct impacts to wildlife populations could include limited direct mortalities from construction activities, and indirect impacts could include physiological effects due to stress resulting from navigating temporary pipeline construction obstacles during and habitat loss during revegetation recovery.

The primary issues that can cause impacts to bird species other than raptors include displacement and direct loss of individuals. Potential direct and indirect impacts of the Proposed Action on terrestrial bird species can be classified as short term and long-term. Short term direct impacts arise from displacement due to human presence, noise resulting from construction and temporary loss of habitat. Long-term direct impacts to bird populations could include limited direct mortalities from construction activities.

The most common short term terrestrial bird responses to noise and human presence are avoidance or accommodation. Avoidance may result in displacement of birds from an area larger than the actual disturbance area and seeking alternative habitat. Bird avoidance response can be highly variable from species to species (BLM 2012b). Also, after initial avoidance of human activity and temporary noise-producing areas, some bird species may acclimate to the activity and begin to reoccupy areas formerly avoided even as the disrupting activities continue (BLM 2012b).

Raptors that occur within proximity of the EPP study area and subject to analysis include red-tailed hawk, golden eagle, prairie falcon, and ferruginous hawk. Each of these species and individuals within the species has similar levels of tolerance to human presence depending on the timing of disturbance and overlap with the nesting season. All four raptor species nest and raise their hatch generally starting mid-winter through late summer (January through August). The

primary issue that could result in impacts to these raptor species is human presence and noise disturbances during that period. Although short term, these disturbances could result in nest failure or abandonment. Other issues that could indirectly impact raptor populations are loss of hunting habitat and limited direct mortalities from construction activities.

Other migratory birds that have potential to occur within and in proximity to the study area include western burrowing owl. This species is discussed in detail under Section 3.3.6.

Proposed Action:

Mammals:
Under the Proposed Action approximately 197 acres of intact upland habitat, which could potentially serve as wildlife habitat, would be disturbed. Of the 270 acres of proposed disturbance associated with construction of the EPP, 124 acres are currently excluded from livestock grazing (BLM 2013e). Proposed disturbance would result in a temporary loss of potential forage and habitat fragmentation until the re-establishment of vegetation through stabilization and seeding. Temporary habitat fragmentation could occur primarily from the direct disturbance or alteration of wildlife habitat and indirectly due to noise and human presence associated with temporary construction activities. The severity of these effects on wildlife depends on factors such as sensitivity of the species, seasonal use, type and timing of project activities, and physical parameters (i.e. topography, cover, forage, and climate). The nutritional quality of forage in MU06 winter and summer range would be also a factor in mule deer movements regardless of construction of the EPP. Given that the closest documented bat occurrence is approximately ½ mile east of the EPP study area, it is very unlikely that construction of the EPP under the Proposed Action would affect bats.

As described in Section 2.1.4, the Proposed Action includes Construction Measures/Design Features to minimize impacts from the construction and operation of the EPP. The EPP proposed construction schedule may overlap with the mule deer migration periods (LOP). If that situation occurs, under the Proposed Action PPC would limit construction activities along the EPP temporary construction right-of-way during the applicable LOP (BLM 2013b) to BLM and NDOW approved noncontiguous construction blocks. The approved construction blocks would ensure that a majority of the historic mule deer migration area would not be restricted by EPP construction activities.

Beyond a temporary disturbance to vegetation and temporary increase in human presence during construction, operation of the EPP would not result in any substantive or permanent direct or indirect adverse effect on wildlife populations. Stabilization and seeding within the same construction season, subsequent to completion of pipeline installation is expected to reestablish desired plant communities appropriate for wildlife habitat in the study area on all previously undisturbed areas (197 acres). Climatic conditions, species selection and land management activities following a fall/winter seeding would determine the period over which habitat recovery is attained. An advantage to revegetation for disturbance associated with construction of the EPP is 124 acres of the project area are currently excluded from livestock grazing (BLM 2013d). Land surface disturbed by construction of the EPP would be stabilized and seeded in accordance with a seed mix previously approved by the BLM for Newmont Carlin Trend projects (211

acres). The seed mix to be applied is described in Section 3.3.7. In addition, PPC would be subject to Newmont's BLM approved monitoring requirements for meeting revegetation success criteria, and remediation protocol is determined necessary by the BLM and Newmont (BLM 2010a, 2010b, 2010c, 2012b).

Under the Proposed Action, if weather or other factors cause disruption or delay in the construction schedule extending construction into the mule deer migration period, PPC would limit construction activities along the EPP temporary construction right-of-way during the applicable LOP (BLM 2013b) to BLM and NDOW approved noncontiguous construction blocks.

Should LOPs for mule deer be in effect during construction in a given area, construction crews and equipment would minimize the linear extent of construction activity along the pipeline corridor in those areas to accommodate the migration of such deer ahead of and behind the construction spread. Segmentation of the construction spread would only be utilized should the construction spread be unable to minimize the linear extent to acceptable levels. Segmentation of the construction spread would involve defining linear construction areas into construction blocks, for example Block A, Block B, and Block C. This manner of segmentation would be repeated within areas as defined by the BLM and NDOW as used historically for deer movements through the project area. Construction would be authorized in "A" Blocks until completed through site stabilization and revegetation, at which time construction would move onto the "B" Blocks, and so on. The approved construction blocks would ensure that a majority of the historic mule deer migration area would not be temporarily restricted by EPP construction activities at any given time during the LOP.

PPC would complete site stabilization and revegetate currently undisturbed portions of the EPP temporary ROW at the completion of pipeline installation and as close to the onset of fall/winter precipitation as possible. Areas revegetated as a result of EPP construction ground disturbance in currently undisturbed areas would result in a temporary impact to wildlife habitat. However, revegetation during the fall/winter would minimize impacts to habitat by taking advantage of ambient soil moisture from snow, and exclusion from livestock grazing (BLM 2013e) rather than revegetation being conducted at the conclusion of pipeline installation. PPC would complete revegetation of these areas using a seed mix approved by the BLM (Section 3.3.7). In addition, PPC would be subject to Newmont's BLM approved monitoring requirements for meeting revegetation success criteria, and remediation protocol if determined necessary by the BLM and Newmont (BLM 2010a, 2010b, 2010c, 2012b).

If construction of the EPP were to occur outside of the mule deer LOPs (BLM 2013b), such as mid June through late September the standard pipeline construction approach would apply. This standard approach is detailed in Section 2.1.2 Installation of the Pipeline.

Area wildlife may be temporarily displaced from habitat and avoidance behavior may occur due to increased activity, noise, dust related to construction and time for establishment of seeded vegetation. After construction, the migration area would be returned to the current level of ease of passage for all wildlife. As seeded vegetation establishes dependent on annual climatic condition and largely excluded from livestock grazing, and matures and begins to resemble the original vegetation in composition and density, wildlife use of the area would most likely

resemble pre-project construction levels.

The Proposed Action would result in long-term impacts to approximately 0.25 acre of disturbed habitat on public land and approximately 0.46 acre of continued disturbance on private lands for above-ground facilities. The 0.25 acre of public land was previously disturbed in association with mining activities at the Leeville Mine and the 0.46 acre was previously disturbed in association with mining activities at the Gold Quarry Mine.

To the furthest extent possible, under all construction schedule scenarios, each length of open trench would be limited to 1,200 feet at a time. If greater than 1,200 feet of trench would be open at any time in a particular location, the trench would be bridged and ramped every 1,200 feet to protect wildlife species and livestock, providing both a means to cross the open trench or to escape if needed.

Birds and Raptors:
Chukar may be temporarily displaced from habitat during the three to five month construction period. A temporary loss of upland habitat (steep, rocky slopes) suitable for chukar would occur as a result of the Proposed Action. The surrounding area provides habitat in abundance as evidenced by the existing use of the EPP study area (Wood Rodgers 2013) by chukar so the habitat losses caused by the Proposed Action would not likely disrupt chukar populations.

One confirmed active red-tailed hawk nest is located within ±1.6 miles of the EPP alignment. Construction of the EPP would temporarily disturb a portion of the hawk's potential hunting area. However, the red-tailed hawk is an opportunistic hunter. It relies on open areas, fields, and meadows with surrounding high perches to hunt from. Its diet is also varied, including 85 to 90% small to medium sized rodents, including rabbits and occasionally birds up to the size of pheasants, snakes and lizards. Due to their adaptability to different habitats and their general tolerance of human presence, red-tailed hawk populations are considered very stable across their range and the temporary impacts from construction of the EPP would not likely adversely affect their ability to hunt or nesting success.

Other Wildlife:
Construction activities associated with the EPP Proposed Action may affect common reptiles that are likely to occur in the EPP study area. It is possible that construction could result in direct effects in the form of individual mortality, and indirect effects in the form of displacement of individual common reptiles.

No Action Alternative:
Under the No Action Alternative, the EPP would not be constructed and there would be no new disturbance to wildlife species or their habitat attributed to this proposed natural gas pipeline.

Cumulative Effects:
The CESA for large mammals and their habitat encompasses a portion of NDOW's Management Unit 06 (Hunting Units 062, 064, 067, and 068) as depicted in Figures 3-8, 3-9, and 3-10. The CESAs were determined by the BLM and NDOW based on wildlife use in the region and include a contiguous area that provides very important seasonal habitat for general wildlife species as

mule deer and antelope. Generally, the CESAs extend from the northern end of the Independence Range in the north to the Humboldt River and northern end of the Pinon Range to the south. Cumulative impacts to wildlife resources would primarily be directly related to habitat loss, habitat fragmentation, and animal displacement.

Cumulative effects on wildlife in the CESAs have resulted primarily from wildfires, mining activities and mineral exploration, noxious weeds and non-native invasive plant species, livestock grazing, drought, urbanization, and seeding of native range with introduced species (BLM 2010a, c). Development of the reasonably foreseeable future project discussed in Section 3.2.3 would continue to impact wildlife resources in their respective CESAs. However, most mine areas proposed for development within the Carlin Trend typically have been within or adjacent to existing mine areas (BLM 2010a, c).

Effects of wildfires on terrestrial wildlife species include loss of habitat (forage and cover) which can lead to die-offs. The loss of canopy cover and forb and grass diversity is prevalent across the burned areas and the recovery of these plant communities would vary in terms of time and cover. It is common for native shrub communities affected by wildfire to be replaced by cheatgrass-dominated grasslands until seeded species and/or native vegetation becomes re-established, particularly, at elevations below 6,000 feet (BLM 2012a).

Past, present and reasonably foreseeable future actions in the wildlife, mule deer, and antelope CESAs resulted, or would result, in the direct disturbance of habitat. A portion of the cumulative disturbance areas have been, or would be, reclaimed or have recovered materially (BLM 2012b). Reclaimed areas would be capable of supporting wildlife use; however, the level and timing of recovery is highly dependent on seed mix species selection, climatic conditions, protection from grazing, and reclamation techniques and methods.

Within the wildlife, mule deer, pronghorn, and elk CESAs (Figures 3-8, 3-9, and 3-10) past project activities have removed wildlife habitat, primarily as a function of fencing and/or land disturbance and reclamation. The proposed project and other project activities within the Carlin Trend are located in the heart of a migration area that connects important summer and winter range primarily for mule deer. Throughout the western U.S., big game species rely on seasonal ranges to satisfy their annual nutritional and energetic requirements (BLM 2012b). Over the past 10 to 20 years, seasonal big game movement corridors have been restricted due to mining operations in the Carlin Trend (BLM 2012b).

Within the mule deer CESA, a large herd of mule deer migrates south from their summer range in the Tuscarora Range, Independence Range, and Santa Renia Mountains to their winter range in the lower elevations of Boulder Valley, Dunphy Hills, Izzenhood area, and the southern end of the Sheep Creek Range (BLM 2012b). The Carlin Trend and surrounding areas is a mule deer migration area for movement to and from the winter range in the Dunphy Hills. Due to the recent expansion of mining developments along the Tuscarora Range, limited opportunity remains for north/south big game movement in Management Area 06 (BLM 2012b). This restriction has created a significant impact to the mule deer migration in this part of the Carlin Trend. In addition, wildfire has created one of the primary cumulative effects on these species (Section 3.2.2). From 1980 to 2013, thousands of acres of wildlife habitat have been impacted by

large-scale wildfires. Wildfire has resulted in the long-term loss of shrubs that provide forage and cover as habitat components, which has caused reductions in mule deer and pronghorn herds throughout their respective CESAs. Effects of wildfires to terrestrial wildlife species include loss of habitat (forage and cover), which result in long term changes in the populations of mule deer and pronghorn as well as other species. The loss of shrub canopy cover and forb and grass diversity is prevalent across the burned areas and the recovery of these plant communities varies in terms of time, cover and species diversity. In many areas, native shrub communities have been replaced by cheatgrass-dominated grasslands (BLM 2012). A breakdown of cumulative disturbance by the Proposed Action, wildfire, and mining operations is presented in Table 10.

Many of the local wildlife populations (e.g., reptiles, small game, non-game species, and migratory birds) that occur in the CESA would continue to occupy their respective ranges and breed successfully following completion of past, present, and reasonably foreseeable future projects within the CESA, although population numbers may decrease relative to the amount of cumulative habitat loss and ground disturbance. Many of the local wildlife populations that occur in the CESA would continue to occupy their respective ranges and breed successfully, although population numbers may decrease relative to the increase in habitat loss and temporary disturbance associated with construction of the EPP. Past, present and reasonably foreseeable future actions in the CESA have resulted, or would result, in the direct disturbance of habitat. A portion of the cumulative disturbance areas have been, or would be, reclaimed or are currently recovering materially (i.e., seeded wildfire and mining activity areas) (BLM 2012a). The reclaimed areas, and areas associated with habitat conversion, would be capable of supporting wildlife use; however, species composition and densities may change. Other cumulative impacts include increased noise, additional human presence, and the potential for increased vehicle-related mortalities.

Nesting raptor species also may be susceptible to these cumulative impacts due to encroaching human activities along the Carlin Trend which have resulted in bird displacement and habitat loss. The hydrographic basin CESA for red-tailed hawk, prairie falcon, ferruginous hawk, western burrowing owl, and pygmy rabbit is the cumulative boundary of Hydrographic Basins 051 and 061 (Figure 3-12). Hydrographic Basins are subdivisions of regional river basins, in this case, the Humboldt River Basin. These species life cycles and foraging opportunities are directly influenced by short and long term climatic conditions as well as physical changes to foraging and hunting habitat, thus hydrographic basins are used as the CESA. Past and present project activities within the CESA could result in a reduction or loss of habitat that supports prey species for raptors.

Table 10 Cumulative Wildlife Habitat Disturbance

CESA and Habitat Type	Total Acres of Habitat[1]	Total Acres of Habitat Previously Disturbed (Fire, Past, Present, RFFAs)[1]	Acres of Intact Habitat Disturbed by Proposed Action and % of Total Acres of Habitat
Wildlife	2,389,947	1,170,441 (49%)	197 acres (0.0001%)
Mule Deer	1,641,584	819,063 (50%)	Limited Use Range 30 acres (0.002%)
Antelope	1,199,893	760,440 (63%)	Summer Range 131 acres (0.011%)
Elk	1,033,077	706,211 (68%)	Summer, Low Density & Crucial Winter Range 188 acres (0.018%)

Source: BLM 2012b[1]

The Proposed Action adds approximately 211 acres of temporary disturbance due to construction, of which about 197 acres is disturbance to intact sagebrush habitat or 0.0001% additional disturbance of the total acres of wildlife habitat (Table 10). The Proposed Action would reclaim 211 acres including that previously damaged by wildfire. Of the 270 acres of proposed disturbance associated with construction of the EPP, 124 acres are currently excluded from livestock grazing (BLM 2013e). Approximately 0.71 acre of disturbance/habitat loss would remain as long as the pipeline continues to operate. In the context of cumulative impacts, the Proposed Action adds a very small increment to habitat fragmentation, habitat loss, and temporary animal displacement and movement disruption within the CESA (0.0001% of 2,389,947 acres). The temporary loss of shrub-dominated communities on 197 acres would represent a long-term change in wildlife habitat composition (i.e., shrub-dominated communities to grass/forb dominated communities) under the Proposed Action because it could take up to approximately 25 years for mature shrubs to become established in these communities (BLM 2012). These added impacts are a concern in a cumulative sense in that even small percentage impacts on a project by project basis may amount to substantial impacts over the long term with respect to number and duration of disturbance activities. However, here, the effects are temporary and are not themselves a substantive impact on the MU06 mule deer population relative to the current project activities in the CESA (Table 10).

3.3.6 Special Status Species

Affected Environment:

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Eleven special status species were identified as potentially occurring within the vicinity of the EPP study area (NNHP 2013, NDOW 2013a). These species, their associated habitats, and their potential for occurrence within the study area are summarized in Appendix 2. Occurrence potential within the study area was evaluated for each species based on their habitat requirements and/or known distribution. Based on these evaluations, four special status species have been eliminated from detailed analyses. These species include Lahontan cutthroat trout, Nevada viceroy, Columbia spotted frog, and Townsend's big eared bat. The seven special status species identified as potentially occurring within the study area and addressed in this EA are pygmy rabbit, western burrowing owl, golden eagle, ferruginous hawk, prairie falcon and Greater sage-grouse (Figure 3-11).

Regulatory Framework:

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) of 1973, the United States Fish and Wildlife Service (USFWS) has authority over projects that may affect the continued existence of a species federally listed as Threatened or Endangered. If a development may affect a federally listed species, federal consultation under Section 7 of ESA is required. Under ESA, the definition of "take" includes to kill, harm, or harass any federally listed species. The USFWS has interpreted the definition of harm to include significant habitat modification. There are no threatened or endangered species that would be impacted by the Proposed Action.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668) applies mostly to taking, hunting, and trading activities that involve any bald or golden eagle. The act prohibits the "taking" of any individuals of these two species, as well as any part, nest, or egg. The term "take" as used in the act includes "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." One golden eagle nest has potential to be disturbed as a result of construction activities associated with the Proposed Action. Therefore, the Conservation Strategy (Appendix 3) was developed in coordination with the BLM wildlife biologist to provide a program designed to reduce the potential risks of indirect harassment, injury or mortality to raptor and migratory birds that may result from the interaction of these animals with Prospector Pipeline Company's (PPC) construction activities for the EPP.

BLM Policies

In Nevada, the BLM has implemented policies for special-status species found on BLM-managed lands. BLM's list of special-status species includes the following three categories: (1) federally listed as Threatened or Endangered, Proposed and Candidate species; (2) Nevada State Protected species; and (3) Nevada BLM Sensitive Species. Nevada State Protected species that meet BLM's 6840 (BLM 1988) policy definition includes a total list of 25 animal species and 13 plant species occurring on BLM- managed lands. The BLM affords these species the same level of protection as federal Candidate species. Nevada BLM Sensitive Species (BLM Manual section 6840.06 C [BLM 1988]) are not federally listed, nor state-listed, but the BLM affords them the same level of protection as federal Candidate species. BLM sensitive species are

species for which population viability is a concern. Concern is warranted by a downward trend in population numbers, density, or habitat conditions that would reduce a species' existing distribution. The BLM is responsible for ensuring that its actions do not cause sensitive species to become Threatened or Endangered. Several special-status wildlife species listed later in this section are considered sensitive species by the BLM and are afforded protection.

Nevada Regulations

The State of Nevada does not have its own version of the federal ESA. However, NDOW has established a list of species that are declining in all or portions of their range within the State of Nevada. NDOW's listed species are "protected" under the authority of NRS 501.100 - 503.104 (wildlife), and NRS 527.050 and NRS 527.260 - 527.300 (plants). When these species occur within BLM- managed lands, the BLM affords them the same level of protection as federal Candidate species. In addition, under the authority of NRS 527.060 to 527.120, it is unlawful to remove or damage cacti, yucca, and Christmas trees without written permission from the legal owner.

Pygmy Rabbit:

Pygmy rabbits are typically found in areas of tall, dense big sagebrush cover and are highly dependent on sagebrush to provide both food and shelter throughout the year. Their winter diet consists of up to 99 percent sagebrush (USFWS 2011). Pygmy rabbit burrows are generally found in relatively deep, loose soils of wind-borne or water-born origin. In September of 2010, the USFWS determined that the pygmy rabbit does not warrant protection under the ESA, however the Nevada BLM State Office has classified this as a Sensitive Species, and Nevada Natural Heritage has categorized this species as vulnerable to decline.

Pygmy rabbit are known to occur east of the SOAPA North-South Haul Road (BLM 2013b). The EPP study area may support suitable habitat and thus it is likely for this species to occur within the study area.

Burrowing Owls:

The western burrowing owl breeds throughout Nevada. The majority of the breeding population migrates from northern Nevada during the winter months. However, observations of this owl have been recorded throughout Nevada during all months of the year. Breeding by burrowing owls is strongly dependent on the presence of burrows constructed by ground squirrels and badgers. Prime burrowing owl habitat must be open, have short vegetation, and contain an abundance of burrows. Burrowing owls begin nesting in April, and young typically fledge by August. The western burrowing owl has been designated by the BLM Nevada State Office as a Sensitive Species and by Nevada Natural Heritage as vulnerable to decline.

BLM Nevada State Office Best Management Practices for the Sagebrush Biome (BLM no date) to assist BLM field offices in the consideration of migratory birds incudes the requirements for pre-disturbance migratory bird nesting surveys as described under Section 2.1.4.

The nearest known burrowing owl population is approximately midway down the SOAPA North-South Haul Road and to the west approximately 1 mile (Figure 3-11)(BLM 2013b) therefore, western burrowing owl may potentially occur within the EPP study area.

Golden Eagle:
The golden eagle, a USFWS Species of Concern, a Nevada State Protected species, Nevada BLM Sensitive Species, protected under the Bald and Golden Eagle Protection Act and the MBTA, is found in a variety of open, usually relatively dry habitats throughout the western United States. In Nevada, it often nests on cliffs above foraging habitat with an adequate prey base including sagebrush flats, pinyon-juniper woodland, and salt desert shrub. In proximity to the EPP alignment, three active golden eagle nests have been confirmed (BLM 2013c). The locations are within 1.25, 0.8 and 0.7 miles. The closer two of the three locations are topographically screened from the EPP alignment by the Maggie Creek Canyon, and State Route 766 subjects the nests to constant vehicular traffic noise, and all three are separated from the EPP alignment by mining activity.

Ferruginous Hawk:
The ferruginous hawk, a USFWS Species of Concern, a Nevada State Protected species, BLM Sensitive Species, and protected under the MBTA inhabits the open sagebrush grasslands of central and eastern Nevada (BLM 2001). Nest sites are normally located at the interface between pinion or juniper woodland and open sagebrush. Nest trees typically overlook broad expanses of open sagebrush or grassland from which the hawks hunt ground squirrels and rabbits. Ferruginous hawks nest in the tops of isolated trees and sometimes on rock outcrops or even on the ground on ridges overlooking valleys. One ferruginous hawk nest has been confirmed to be active 5.5 miles east of the EPP alignment (BLM 2013c). This location is topographically screened from the EPP alignment with hunting likely to occur in open sagebrush grasslands between the nest site and the EPP alignment.

Prairie Falcon:
The prairie falcon is a BLM Sensitive Species and protected under the MBTA. The falcon favors sagebrush steppe habitat in Nevada, nesting on cliff ledges or isolated trees if available, and a small mammal diet. Within proximity of the EPP alignment two nests have been confirmed as active within 0.6 mile and 2.3 miles (BLM 2013c). The further location of the two nests from the EPP alignment (2.3 miles) is topographically screened from the EPP alignment by the Maggie Creek canyon and is likely subject to vehicular travel noise along State Route 766. The second and closer location (0.6 mile) is sited topographically similar to the EPP alignment as the alignment traverses up and over Schroeder Mountain.

Greater sage-grouse
The Greater sage-grouse, a USFWS Candidate Species, Nevada State Protected Species and BLM Sensitive Species is found throughout Nevada in sagebrush dominated habitats. Sagebrush is a key component of Greater sage-grouse habitat on a year-long basis. Sagebrush provides forage and nesting, security, and thermal cover for this species. Moist areas that provide succulent herbaceous vegetation during the summer months are used extensively as brood rearing habitat. Open, often elevated areas within sagebrush habitats usually serve as breeding areas (strutting grounds or lek sites). In Nevada, Greater sage-grouse males begin displaying on leks in March and hens typically begin nesting in April and May. During winter, Greater sage-grouse often occupy wind exposed areas where sagebrush is available. NDOW provided data on the location and status of sage-grouse leks in the vicinity of the EPP study area (NDOW 2013b). There are 2 leks that are within 3 miles of the EPP study area, the first is the Lynn Creek lek

(status unknown 2012) located midway down and to the east of the EPP study area. This lek was burned in the Indian Creek Fire in 2011 and aerial and drill seeded in 2012. The second is the Richmond Mtn. lek (status inactive 2012) located midway down and to the west of the EPP study area. This lek was also burned in 2011 in the Chukar Fire and aerial seeded in 2012.

BLM habitat categorization for the EPP study area is primarily PGH (Preliminary General Habitat) and non habitat for Greater sage-grouse (BLM 2013b). PGH is typically described as habitat types of moderate importance; however, PGH may also include areas of higher quality habitat that lacks bird survey and inventory data to support a priority habitat ranking. PGH provides some benefit to Greater sage-grouse populations but, in many instances, lacks a key component, such as adequate shrub height or density or sufficient herbaceous understory, which prevents it from meeting its full ecological potential. PGH also may include areas recently burned that have not sufficiently recovered or sagebrush communities with pinyon-juniper encroachment. PGH has the potential to be reclassified as Preliminary Priority Habitat (PPH) if restoration efforts enhance the habitat quality or ongoing field efforts document sage-grouse use (http://www.blm.gov/nv/st/en/prog/wildlife/greater_sage-grouse/preliminary_habitat.html).

Environmental Consequences:

Pygmy Rabbit:

Proposed Action: It is possible that during construction, burrows could be destroyed and individuals could be killed. Construction would temporarily eliminate a small fraction of the area's forage, hiding cover, and breeding sites for these species. Excavation and backfill might create a minor benefit in areas of existing burrows by providing churned soils that could be easier to burrow into. Site stabilization and seeding could benefit pygmy rabbit by providing additional forage (new seedlings) during the following spring in the areas reclaimed by the project.

In compliance with the Construction Measures and Design Features (Section 2.1.4), PPC would employ a qualified biologist to conduct species specific protocol surveys prior to clearing and grubbing of the EPP temporary ROW. If pygmy rabbit presence is confirmed by the qualified biologist, the biologist would consult with the BLM wildlife biologist for applicable adaptive management to be applied to construction activities and buffers to be delineated in the field with protective fencing to avoid potential for impact. Active burrows will be documented using GPS. PPC would then clear and blade the proposed temporary right-of-way at the start of construction to remove potential burrowing habitat for pygmy rabbit, avoiding areas buffered to protect active burrows. Buffered areas would be resurveyed, and when determined to be inactive by PPC's qualified biologist, would then be cleared and bladed for construction.

Burrowing Owl:

Proposed Action: Construction would temporarily eliminate a small fraction of the area's forage, hiding cover, and breeding sites for these species. Habitat for this species occurs west of SOAPA North-South Haul Road within 1 mile of the haul road. Therefore, there is potential for this species to occur within the EPP study area. Although EPP construction activities would most likely occur during the species LOP, it is unlikely that any burrowing owls will be impacted through compliance with the construction measures and design features (Section 2.1.4).

In compliance with the construction measures and design features (Section 2.1.4), if the construction schedule overlaps with the burrowing owl LOP, PPC's qualified biologist would coordinate with the BLM wildlife biologist. Coordination would focus on requisite pre-disturbance surveys for western burrowing owl and appropriate active burrow buffers to be protected with temporary construction fencing to avoid impact to potentially active burrows.

Golden Eagle:

Proposed Action: Construction of the EPP would overlap with a portion of the eagle nesting season which begins January 1 and continues through when the young fledge from the nest as late as the end of August. Construction would temporarily eliminate a small fraction of the area's hunting habitat for this species. Disturbance in the form of human presence during construction could potentially impact nesting success.

It is unlikely that construction of the EPP would impact nesting success of the nearest nest locations, as they are topographically screened from the EPP alignment by the Maggie Creek Canyon, and State Route 766 subjects the nests to constant vehicular traffic noise. All three nests are separated from the EPP alignment by mining activity.

Although the third nest site is further from the EPP alignment, it is not topographically screened from EPP related construction noise and human presence; however it is consistently subject to noise and human presence from mining activity. Given the potential for impact to nesting success due to the increase in human presence and construction noise associated with construction of the EPP, the Proposed Action includes provisions to confirm the nest is active and if confirmed active, monitor nesting behavior for this nest location as described under Section 2.1.4 Construction Measures/Design Features and the Conservation Strategy (Appendix 3). This nest is located approximately 1.3 miles southwest at the northern extent of the EPP alignment. When EPP construction begins at either end of the golden eagle monitoring zone, as prescribed by the BLM wildlife biologist (Figure 5, Appendix 3), PPC's qualified biologist would start nesting behavior monitoring and continue monitoring until the qualified biologist determines that EPP construction activities are not resulting in abnormal nesting behavior, construction is completed within that monitoring zone, the raptor fledges young or the nest becomes inactive. If abnormal nesting behavior is documented, the qualified biologist will determine the severity of the abnormal behavior and consult with the BLM wildlife biologist to determine the appropriate course of adaptive management to be applied to construction activities. The goal of the nest behavior monitoring is to assess if potential construction-related impacts (noise or human presence) may disrupt the nesting success of the subject raptor. For EPP construction occurring outside the nesting season, and outside of the two raptor monitoring zones (Figure 5, Appendix 3), nest behavior monitoring is not required.

Ferruginous Hawk:

Proposed Action:

Construction would temporarily eliminate a small fraction of the area's hunting habitat for this species. If weather or others factors result in a delay or interruption in the construction schedule, disturbance in the form of human presence during construction is unlikely to potentially impact nesting success for the nest located approximately 5.5 miles east of the SOAPA. This nest site is screened topographically and by distance from the EPP alignment and is more likely to be

impacted by vehicular travel along State Route 766. It is unlikely that the EPP construction, even if it does overlap with the hawk's nesting period, would impact nesting success.

Prairie Falcon:

Proposed Action:

Construction of the EPP would overlap with the falcon's nesting season which begins January 1 and continues through when the young fledge from the nest as late as the first of July. Construction would temporarily eliminate a small fraction of the area's forage for this species. Disturbance in the form of human presence during construction could potentially impact nesting success for the nest located atop Schroeder Mountain.

This nest site is not screened topographically and is located on the same landform as the EPP alignment in this location, however it is consistently subject to noise and human presence from mining activity as described in Section 2.1.1. Given the potential for impact to nesting success due to the increase in human presence and construction noise associated with construction of the EPP, the Proposed Action includes provisions to monitor nesting behavior as described under Section 2.1.4 Construction Measures/Design Features and the Conservation Strategy (Appendix 3). This nest is located approximately 0.6 mile southwest at the southern extent of the EPP alignment. When EPP construction begins at either end of the falcon's monitoring zone as prescribed by the BLM wildlife biologist (Figure 5, Appendix 3), PPC's qualified biologist would determine that the nest is active, and if confirmed active, would begin nesting behavior monitoring and continue monitoring until the qualified biologist determines that EPP construction activities are not resulting in abnormal nesting behavior, construction is completed within that monitoring zone, the raptor fledges young or the nest becomes inactive. If abnormal nesting behavior is documented, the qualified biologist would determine the severity of the abnormal behavior and consult with the BLM wildlife biologist to determine the appropriate course of adaptive management to be applied to construction activities. If no measures can be applied, construction would be delayed within 0.5 mile of the nest until the end of the nesting period. For EPP construction occurring outside the nesting season, and outside of the two raptor monitoring zones (Figure 5, Appendix 3), nest behavior monitoring is not required.

Greater sage-grouse:

Proposed Action:

Two Greater sage-grouse lek sites (one unknown, one inactive status) have been identified approximately 3 miles from the EPP study area. The Lynn Lek (status unknown) is approximately 21/4 miles and the Richmond Mtn. lek (status inactive) is approximately 11/2 miles from the EPP study area. Given the lek status as documented by NDOW (2013a), these wildfire areas are in some level of recovery post seeding in 2012, EPP construction would not begin until June, and construction disturbance would be limited to the temporary construction ROW which is narrower than the study area, it is unlikely that there would be any direct or indirect impacts to breeding Greater sage-grouse (or leks) from project construction activities.

The EPP study area may support incidental use by Greater sage-grouse. Due to the current extent and level of mining activity within the Carlin Trend which includes the EPP preferred alignment, the EPP study area supports fragmented PGH as described above. According to the BLM (2013b), leks have been removed or abandoned and bordering undisturbed areas are not

consistently utilized by sage-grouse. Therefore, EPP construction activities would not likely adversely affect their incidental use of the area in summer and winter (BLM 2013b).

No Action Alternative:
Under the No Action Alternative, the EPP would not be constructed. There would be no new disturbance to pygmy rabbit and western burrowing owl habitat, no new potential for nesting success or foraging habitat disturbance to golden eagle, ferruginous hawk, and prairie falcon, and there would be no new potential for impact to Greater sage-grouse incidental use of the remaining fragmented PGH habitat associated with the EPP Proposed Action.

Cumulative Effects:

Pygmy Rabbits:
The CESA for pygmy rabbits is the collective boundary of Hydrographic Basins 051 and 061 (Figure 3-11). Considering that species specific surveys would be conducted prior to ground disturbing activities, and active burrows would be protected until they become inactive, there is no concern for cumulative impacts related to this project or alternatives, including the No Action Alternative.

Burrowing Owls:
The CESA for burrowing owls is also the collective boundary of Hydrographic Basins 051 and 061 (Figure 3-11). Although EPP construction activities would most likely occur during the species specific LOP, it is unlikely that any burrowing owls would be harmed by the project. Construction Measures/Design Features (Section 2.1.4) would be applied to project construction to avoid impact to active burrows in accordance with the Migratory Bird Treaty Act. There are no cumulative impacts of concern related to the EPP.

Golden Eagle:
The CESA for golden eagle is the collective boundary of Hydrographic Basins 051 and 061 (Figure 3-11) with emphasis on a 10 mile radius of the EPP alignment. Given that construction for the EPP would overlap the nesting season, the project may impact nesting success of the golden eagle in one location (1.3 mile proximity). Comprehensive application of the Construction Measures/Design Features (Section 2.1.4) is intended to monitor nesting behavior and avoid disturbance activities that may impact nesting success. If monitoring documents abnormal nesting behavior as a result of EPP construction activities, the biologist will consult with the BLM wildlife biologist to determine the severity of the abnormal nesting behavior and what construction adaptive management measures, if any will be applied to construction activities to ensure that any potential impact of the EPP is less than significant. If no measures can be applied, construction will be delayed within 0.5 mile of the nest until the end of the nesting period.

The small portion of impact to potential hunting area for golden eagle associated with temporary impacts for construction of the EPP would not incrementally increase cumulative impacts to this species.

Ferruginous Hawk:

The CESA for ferruginous hawk is the collective boundary of Hydrographic Basins 051 and 061 (Figure 3-11). Given that the hawk nest is 5.5 miles from the EPP alignment, it is unlikely that construction activities from the project would impact nesting success of the hawk.

The small portion of impact to potential foraging and hunting area for ferruginous hawk associated with temporary impacts for construction of the EPP would not incrementally increase cumulative impacts to this species.

Prairie Falcon:

The CESA for prairie falcon is the collective boundary of Hydrographic Basins 051 and 061 (Figure 3-11). Given that construction for the EPP would overlap the nesting season, it is possible that construction activities from the project may impact nesting success of prairie falcon in one location (0.6 mile proximity). The comprehensive application of the Construction Measures/Design Features (Section 2.1.4) is intended to monitor nesting behavior and avoid disturbance activities that may impact nesting success. If monitoring documents abnormal nesting behavior as a result of EPP construction activities, the biologist will consult with the BLM wildlife biologist to determine the severity of the abnormal nesting behavior and what construction adaptive management measures, if any will be applied to construction activities to ensure that any potential impact of the EPP is less than significant. If no measures can be applied, construction will be delayed within 0.5 mile of the nest until the end of the nesting period.

The small portion of impact to potential foraging and hunting area for prairie falcon associated with temporary impacts for construction of the EPP would not incrementally increase cumulative impacts to this species.

Greater sage-grouse:

The CESA for Greater sage-grouse is the Tuscarora Population Management Unit (Figure 3-11). Given that the two know lek locations are approximately 3 miles from the EPP study area, they are either inactive or of unknown status, the EPP Study area supports fragmented PGH and only incidental use of this fragmented habitat is expected throughout the Carlin Trend, it is not likely that construction activities from the project would directly impact strutting, nesting and brooding success of the sage-grouse. In addition, EPP construction activities are unlikely to impact incidental use of the remaining fragmented PGH that occurs within the EPP study area. Potential impacts would be to scattered individuals that venture into or cross through the EPP study area. Given the birds' incidental use and the temporary nature of disturbance of the fragmented PGH, construction of the EPP would not incrementally increase cumulative impacts to this species.

3.3.7 Vegetation Resources

Vegetation in the EPP study area is dominated by sagebrush steppe communities. Basin and Wyoming big sagebrush dominate on deep, salt-free soils with a perennial and annual grass understory. Perennial grass species include bluebunch wheatgrass, Thurber needlegrass, and Sandberg bluegrass (Cronquist et al. 1972). Figure 3-13 shows the USGS classification for vegetation in the general area of the proposed pipeline. Figure 3-1.1 and Figures 3-1.2 through 3-1.11 in Appendix 1 show detailed analysis of the status of vegetation within the study area. Note that portions of the study area without added color are not disturbed by any activities other than grazing. Approximately 73 acres of the study area have been disturbed by previously permitted exploration activity including roads and drill pads, wildfires from 2005 and later, pipeline and transmission line construction, and mining activities. Vegetation on the undisturbed portion of the proposed EPP study area is typical of upland Great Basin sagebrush/bunchgrass plant community. Major vegetative species present in undisturbed areas include: Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), Douglas rabbitbrush (*Chrysothamnus vicidiflorus*), spiny hopsage (*Grayia spinosa*), Sandberg bluegrass (*Poa Sandbergii*), bottlebrush squirreltail (*Elymus elmoides*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass (*Achnatherum thurberianum*), Indian ricegrass (*Achnatherum hymenoides*), lupine (*Lupinus spp.*), arrowleaf basalmroot (*Balsamorhiza sagittata*), phlox (*Phlox spp.*), and aster (*Aster spp.*). No tree dominant plant communities are present in the study area (Wood Rodgers 2013). Vegetation on areas damaged by wildfire (shown as burned on Figure 3-1.1 and Figures 3-1.2 through 3-1.11 in Appendix 1) is recovering, both from natural revegetation and from reclamation and restoration efforts by the BLM and others. The wildfire damaged areas will take many years, perhaps decades, to recover the habitat values that existed before the wildfire.

Special status species of plants with potential to occur in the vicinity of the EPP study area are addressed under Section 3.1.1 Resources and Resource Uses Not Present and Not Affected. Based on database query results from the NNHP (2013) there are no known occurrences of special status plant species within the EPP study area.

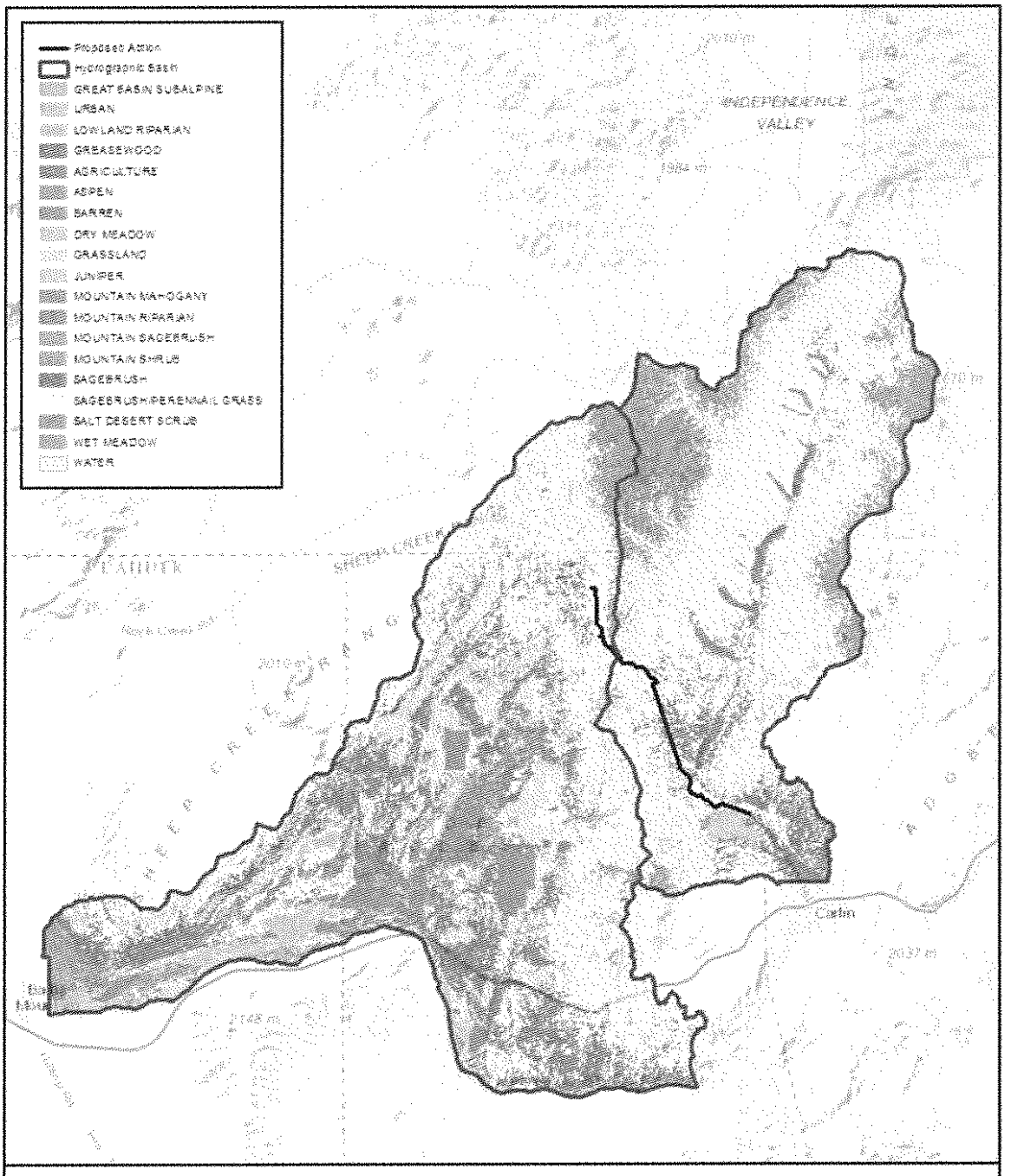


FIGURE 3-13: EXISTING VEGETATION AND CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

Environmental Consequences:

Proposed Action:

Approximately 197 acres of the undisturbed and intact upland habitat in the study area would be disturbed from EPP construction. Approximately 73 acres of upland within the study area are currently disturbed due to roads, mining activity, or wildfire damage.

Stabilization and seeding would reclaim approximately 211 acres of the total proposed disturbance of 270 acres. The difference is 59 acres of existing roads and other mining activities that would remain in a disturbed condition. Approximately 0.71 acre associated with the Leeville Regulating/Metering Station and Leeville MLV (public land) and Gold Quarry Meter Station (private land) would be stabilized but not reseeded to allow for the placement and operation of meter station equipment, and to minimize wildfire fuels. The approximately 59 acres of existing roads would be left in a stabilized condition but not reclaimed to allow for continued use until such time as they are reclaimed through the appropriate mining activity reclamation plan.

In disturbed areas, bare soils and the lack of competition from an established perennial plant community may allow weed seed to become established and produce seed. However, successful revegetation using a seed mix adapted to the area in conjunction with Newmont's existing integrated weed management protocol would create an opportunity to improve the potential for success of revegetation and reduce potential establishment of weedy species in the project area as well as within the Carlin Trend. Stabilized and seeded areas would be first dominated by grasses with low densities of native forbs and shrubs. Big sagebrush, the dominant shrub in the study area, would likely be present at lower densities following construction, but then gradually recover.

The Proposed Action would implement surface stabilization and seeding in previously undisturbed areas in accordance with the previous BLM approved Newmont Carlin Trend projects Reclamation Plan(s) success criteria and remediation protocols. Of the 270 acres of proposed disturbance associated with construction of the EPP, 124 acres are currently excluded from livestock grazing (BLM 2013e). The seed mix to be applied is contained in Table 11 below. In addition, PPC would be subject to Newmont's BLM approved monitoring requirements for meeting revegetation success criteria, and remediation protocol is determined necessary by the BLM and Newmont (BLM 2010a, 2010b, 2010c, 2012b).

Table 11. EPP Revegetation Seed Mix

Species		
Common Name	Scientific Name	Direct Seeding Rate Pounds of Pure Live Seed (PLS Pounds per Acre)
bluebunch wheatgrass	*Agropyron spicatum*	2
Western wheatgrass	*Agropyron smithii*	2
Great Basin wildrye	*Elymus cinerus*	2
small burnet	*Sanguisorba minor*	2
fourwing saltbush	*Atriplex canescens*	3
prostrate summer cypress	*Kochia prostrata*	1.5
cicer milkvetch	*Astragalus cicer*	1.5
Sandberg bluegrass	*Poa sandbergii*	1
Wyoming big sagebrush[1]	*Artemisia tridentata wyomingensis*	.01
TOTAL		15.1

Source: Newmont. 2010. Genesis Project Reclamation Plan Amendment. July 13, 2007 and Genesis Project Draft EIS.

[1] To be broadcast seeded on top of direct seeding application

The Proposed Action would cross several ephemeral drainages. The construction methods described in Chapter 2 are intended to minimize impacts to these drainage features. Implementation of the Construction Measures/Design Features for Soils and Vegetation (Section 2.1.4) would allow PPC flexibility for safe construction as well as maximizing protection of existing undisturbed areas along the proposed alignment as possible.

The Proposed Action includes measures to control the introduction and spread of nonnative invasive plant species and noxious weeds (Section 2.1.4), which should benefit existing noxious weed control measures in the study area.

No Action Alternative:

Vegetation resources would not be affected since construction of the EPP would not occur. Approximately 73 acres in the study area would remain in the current disturbed state attributed to wildfire effects, roads and mineral exploration.

Cumulative Effects:

The CESA for vegetation is the approximate 599,034 acres of the cumulative boundary of hydrographic basins 051 and 061 (Figure 3-13). There has been extensive modification to pre-European settler vegetation conditions due to grazing, wildfire (approx. 310,284 acres or 52% of the CESA (BLM 2013a), mining and exploration activities including Reasonably Foreseeable Future Projects (approx. 37,327 acres or 6% of the CESA (BLM 2012b)), power plants and pipelines (approx.. 38,089 acres or 6% of the CESA (BLM 2012b)) and many other human uses including roads as well as recreation such as ATVs and other vehicles. Of the 52 percent of the CESA that has been subjected to wildfires from 1980 through 2013, 16 percent (9,775 acres) has been seeded and is in the process of recovery (BLM 2012b). Regarding projects like the EPP, temporary disturbance to the currently undisturbed areas (197 acres or 0.033% of the CESA) followed by stabilization and revegetation, under exclusion from livestock grazing (124 acres) is expected to result in acceptable revegetation under favorable climatic conditions over the long term. The loss of shrub-dominated communities on 197 acres or 0.033 percent of the CESA

would represent a long-term change in vegetation composition (i.e., shrub-dominated communities to grass/forb dominated communities) under the Proposed Action because it could take up to approximately 25 years for mature shrubs to become established in these communities (BLM 2012).

3.3.8 Visual Resources

Affected Environment:

The BLM's Visual Resource Management (VRM) provides a method to inventory and analyze scenic values in order to assist the BLM in determining appropriate levels of management. The VRM system helps to ensure that actions taking place today will benefit the visual qualities associated with BLM landscapes, while protecting those visual resources for the future.

VRM classes are assigned based on the visual resource inventory, as well as consideration for other uses. The inventory consists of 1) a Scenic Quality Evaluation, 2) a Sensitivity Level Analysis, and 3) a Delineation of Distance Zones. Each VRM Class has been assigned a management objective as defined in the Table 12. below.

Table 12. Visual Resource Management Class Objectives.

Class I Objective	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II Objective	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic 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.
Class III Objective	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic 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.
Class IV Objective	The objective of this class is to provide for management activities which require major modifications 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.

Source: BLM, 1986

The proposed EPP would be largely located in VRM Class IV (Figure 3-14). BLM policy for activities/actions in VRM Class IV designated public land allows major modification of the existing character of the landscape. A smaller portion of the proposed EPP would be located in VRM Class III where the BLM's management objective is to partially retain the existing character of the landscape. In VRM Class III designated areas, the level of change to the characteristic landscape should be moderate.

The VRM system includes a Contrast Rating Worksheet to analyze the affects to visual resources. In order to complete the worksheet Key Observation Points (KOP's) are selected from the most critical viewpoints (BLM, 1986). These points are typically from traveled routes or other observation points (BLM, 1986). For the proposed action, in consultation with the VRM Visual Resource Specialist one KOP has been identified which is located on State Route 766. This KOP has been selected because of its proximity to the proposed Gold Quarry Meter Station, and the number of travelers that are likely to view this proposed Station while travelling to and from the adjacent mine sites.

To minimize visual changes to the landscape, the facilities located at the Leeville Regulating/Meter Station and the MLV, and the Gold Quarry Meter Station, within the chain link fenced enclosure, would be painted BLM's color palette "Shale Green". The chain link fence would be unpainted galvanized steel. Prior to construction this initial determination will be reviewed to determine if a different palette color is more appropriate for the immediate landscape.

The soils within the area are generally light brown. The vegetation ranges from gold to light to medium olive and consists of low grasses and shrubs. Views within the area are littered with evidence of the current and past mining activity of the region.

Figure 3-15 shows the existing landscape from KOP-1 and an example of another meter station which will be similar to those associated with the proposed action. To the west of KOP-1 there is an existing tan building and tank as well as many utility poles and dirt roads are visible. To the east of KOP-1 there are existing utility poles and a dirt road visible.

Environmental Consequences:

Proposed Action:

The Gold Quarry Meter Station, visible from KOP-1 would be located near existing mining operations on public lands within designated VRM Class IV. For all facilities, whether on public or private lands, the new facilities would be smaller and less obtrusive than existing structures in the immediate vicinity. Portions of the underground pipeline will pass through VRM Class III and will not be visible from KOP-1. Other than small signs to mark the location of the pipeline, there will be no long term indication of the existence of the pipeline. The new facilities and pipeline would be in compliance with the management objectives for VRM for those locations. Painting the equipment in the enclosures to reduce reflection and color contrasts would reduce the visual impact of the facilities. The Visual Contrast Rating Worksheet indicates that the proposed project meets the visual resource management objectives for VRM Classes III and IV.

No Action Alternative:

Under the No Action alternative the EPP above ground facilities would not be constructed and there would be no change to the character of the visual quality of the area. The area would remain heavily impacted by ongoing and expanding mining activities.

Cumulative Effects:

The CESA for visual impacts is the vicinity of the Carlin Trend. The viewshed includes access roads, mining facilities including waste rock storage facilities, heap leach pads, process and administration buildings, and large tailings dams, as well as several electric transmission lines. The proposed mining expansion activities described in Section 3.2 above would be an expansion of the existing visual features located in the CESA. Presently the CESA can be described as a semi-mountainous sagebrush steppe heavily impacted by large mining activities. The visual impacts of the proposed EPP are consistent with the existing mining features, although trivial in comparison to those mining features and transmission lines. It is expected that as a result of the construction of the EPP there would be no incremental adverse impact to visual resources within the CESA.

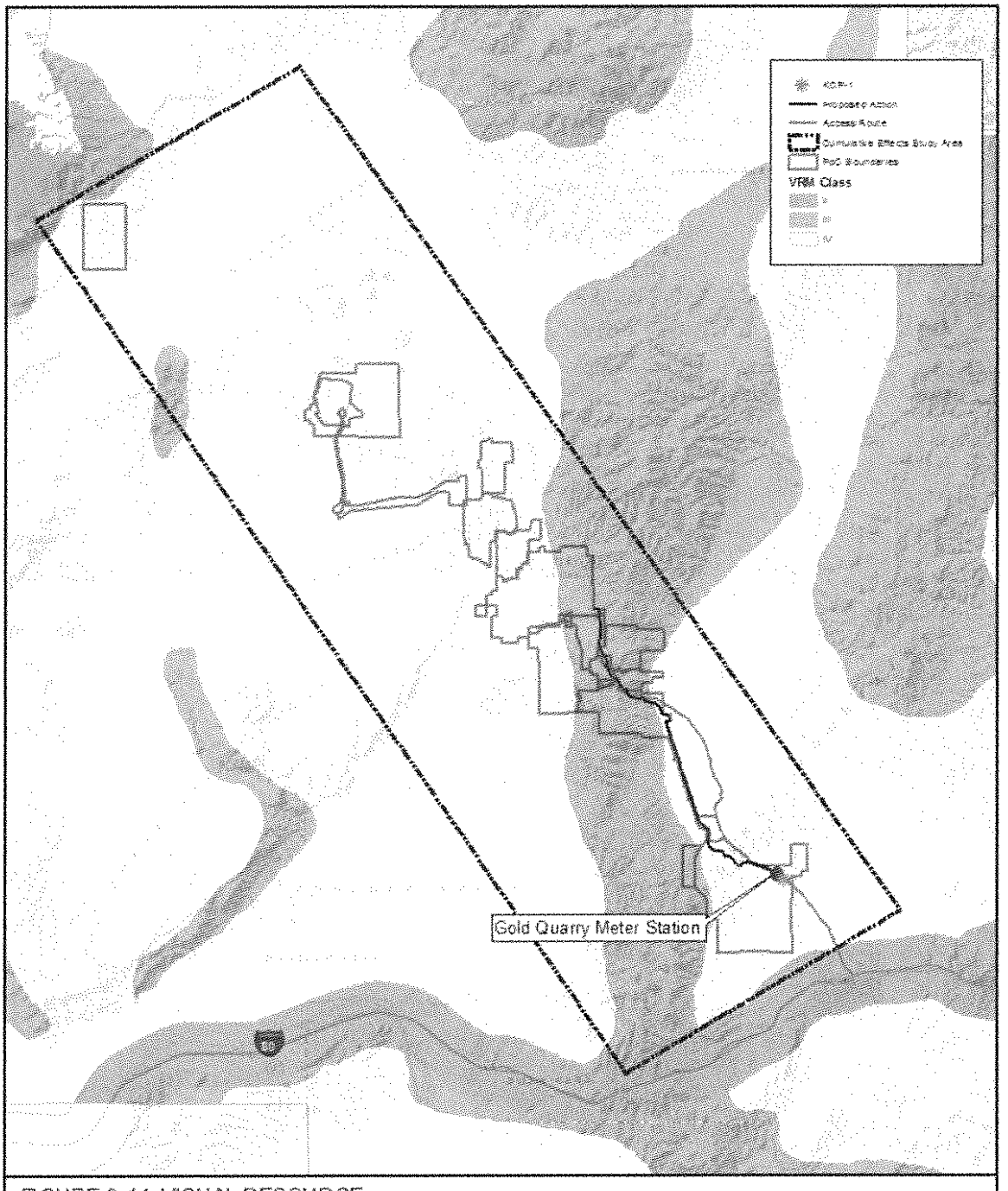
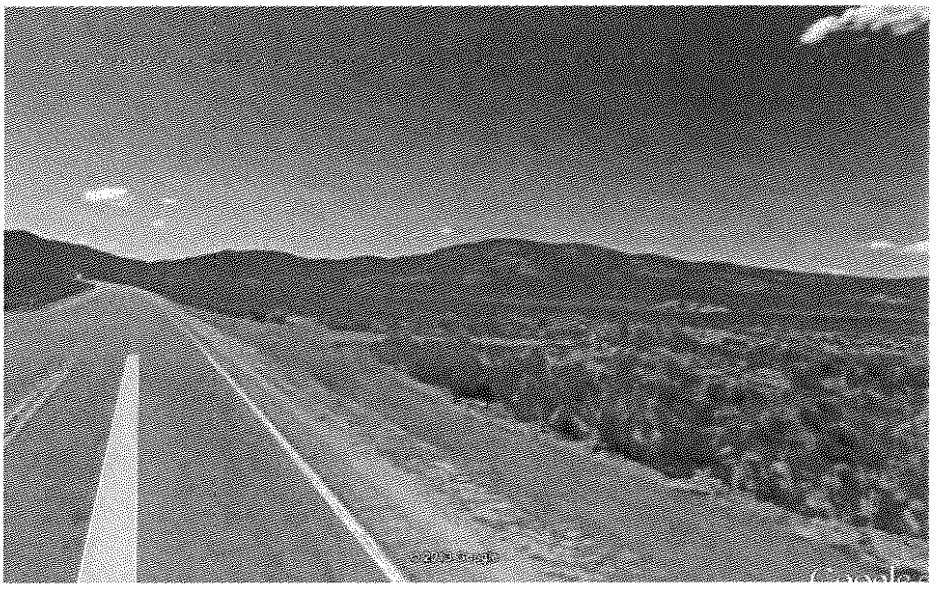


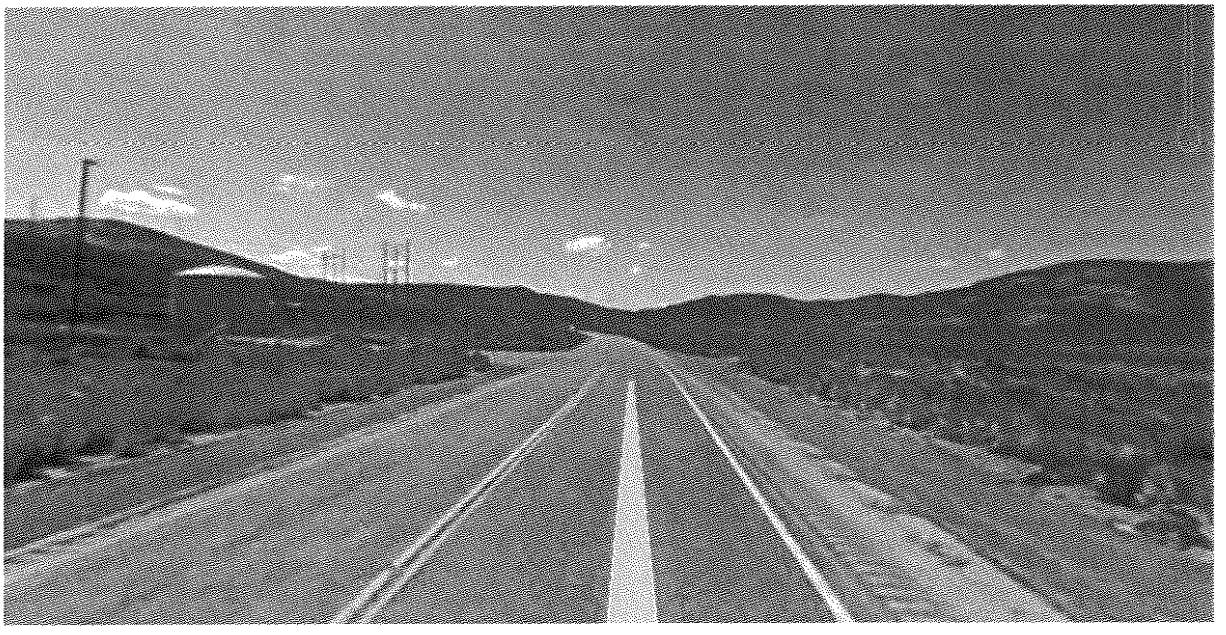
FIGURE 3-14: VISUAL RESOURCE MANAGEMENT CLASSIFICATION AND CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

Figure 3-15 VRM Photos

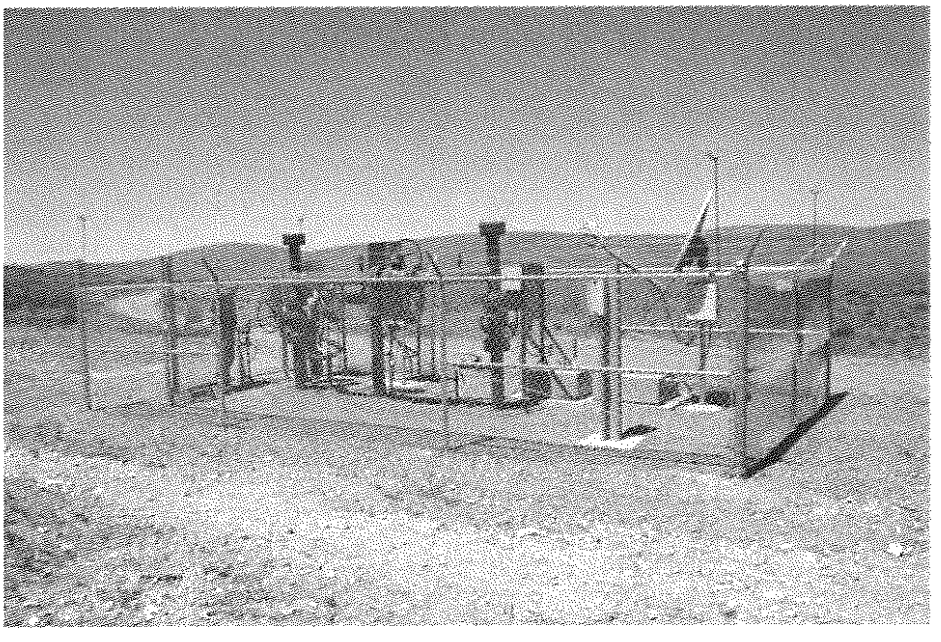


From KOP-1 looking northeast towards proposed Gold Quarry Meter Station

From KOP-1 looking northwest towards existing structures



Overall Photo looking north from KOP-1



Example Meter Station Photo

3.3.9 Socio-Economics Values

Affected Environment

The social and economic values study area for direct and indirect impacts and the Cumulative Effects Study Area (CESA) include Elko and Eureka counties (Figure 3-16). Past, present, and Reasonably Foreseeable Future Actions (RFFAs) occurring within the CESA and considered in cumulative effects are described in Section 3.2. The focus of the analysis is on the major communities nearest the EPP study area, including Elko and Carlin. The EPP is located in Eureka County. Eureka County is ranked 16th of Nevada's 17 counties by population. The EPP project area is most readily accessible via Carlin; however, a majority of the work force will be out-of-state people that will most likely seek temporary accommodations in Elko. By population, Elko, the largest city and the regional trade center for northeastern Nevada, is ranked 5th in Nevada. The study area and CESA were selected because the most notable, although short term social and economic effects would occur where employees are accommodated. The major project-related tax revenues would accrue in Eureka County where the project would be constructed.

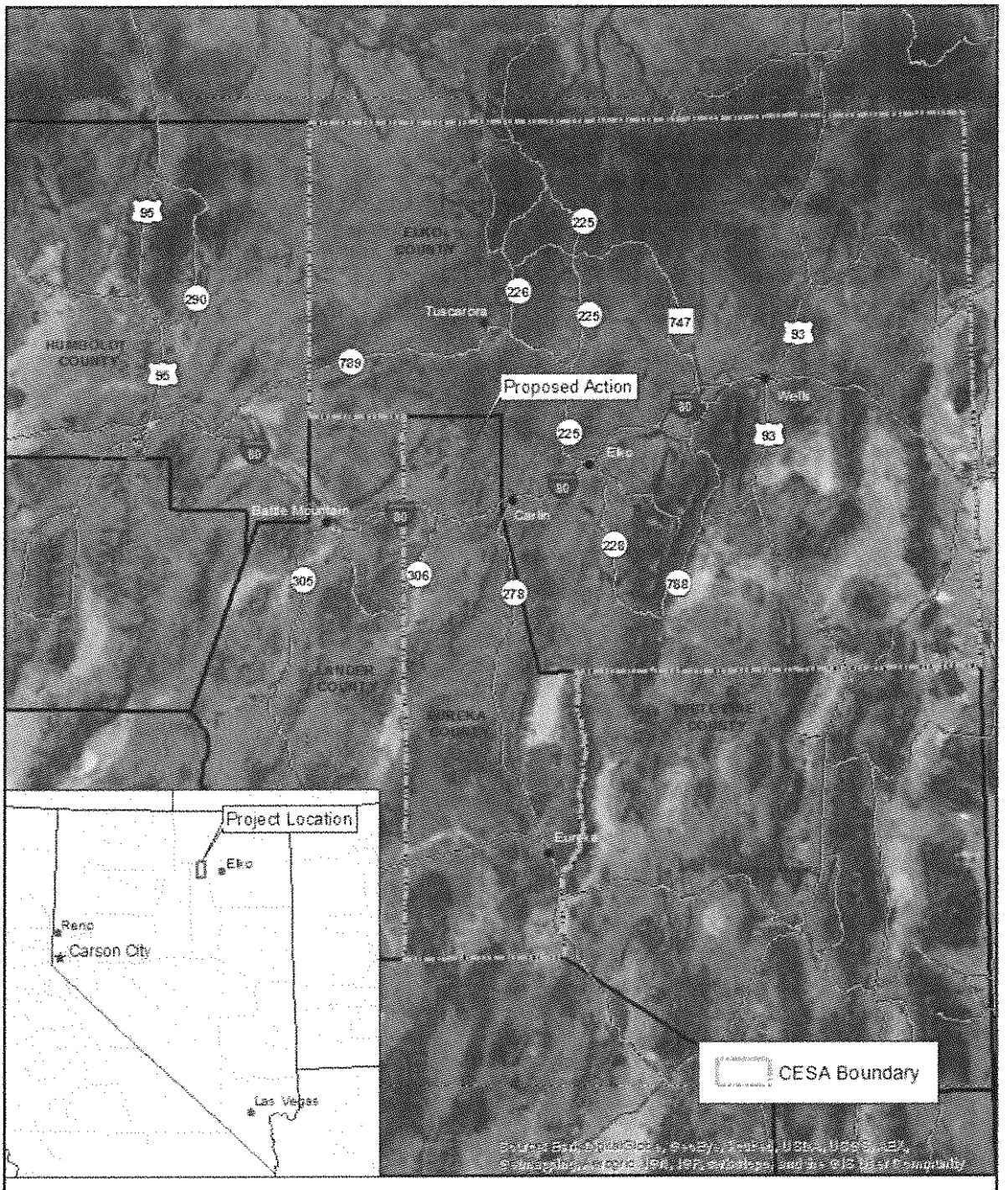


FIGURE 3-16 SOCIO-ECONOMICS CESA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
BACKGROUND ESRI
COUNTIES/ROADS ESRI

The following social and economic values assessment is focused on issues relevant to the proposed project. Construction of the EPP is planned to be 3 to 5 months. The social and economic values that are relevant to a short term project include population and demography, income, economy and employment, short term housing, public facilities and services, and social conditions.

Population and Demography

Based on the 2010 census, Elko has 48,818 people and Eureka County 1,987 people (USCB 2010). Nevada has been one of the country's fastest growing states for much of the past three decades. It also was one of the hardest hit by the recent recession; the state demographer estimates the state lost population between 2008 and 2010. The bulk of growth in Nevada has occurred in urbanized areas, particularly southern Nevada. Elko County experienced very rapid growth in the 1980s, which continued into the 1990s, but tapered off in recent years. Eureka County has trailed the state growth rate by a substantial margin for three decades but was the fastest growing for the four counties in northeastern Nevada since 2000. The most dramatic growth in the CESA has occurred in unincorporated Spring Creek, which is more than six times as large as it was in 1980 (USCB 2010).

As with other construction projects, workers typically choose temporary accommodations based on short term availability, cost for motels and access to restaurants. It is anticipated that most of the construction personnel for the EPP will seek these services in Elko.

The ethnic and racial makeup of Eureka and Elko counties is fairly consistent. As is typical of rural Nevada, they have a lower percentage of Black and Asian people than the state as a whole (**USCB 2010**). They also have lower percentages of Hispanics, although Elko is only modestly lower in this category. The Te-Moak Tribe of Western Shoshone Indians has its headquarters in Elko. Elko County is home to three of the four colonies of the tribe: the Elko Band, South Fork Band, and the Wells Band. A portion of the Duck Valley Indian Reservation also is located in northern Elko County on the Idaho-Nevada border.

Income

Data from 2000 indicated a state income average of $30,986. Average PCPI (per capita personal income) for the CESA in 2000 ranged from $23,757 (76.7 percent of the state level) in Eureka County to $25,418 in Elko County (82 percent of the state level) (BEA 2013). By 2008, the state PCPI had risen to $40,936, an increase of 32 percent. The PCPI for the CESA counties exceeded the state's PCPI growth rate during that time frame, standing at 99.4 percent of the state average in Eureka County, and 91.1 percent in Elko County by 2008 (BEA 2013).

In contrast to PCPI, estimated median household incomes in the CESA are at or above statewide household incomes. The median household income for the state for 2008 was estimated at $56,432, compared with $70,125 for Elko County (124.3 percent of the state level) and $55,090 for Eureka County (97.6 percent) (USCB 2010).

Economy and Employment

Eureka and Elko Counties are major contributors to Nevada's mining economy. The combined natural resources and mining sector employment comprise nearly two thirds of the total state employment in that economic sector; a large majority of the sector statewide is devoted to metal

mining. Eureka and Elko Counties are substantially more dependent on mining than is the state as a whole (NDETR 2009). The employment numbers are based on work location, not residence, which explains why Eureka County has more employees in the natural resources and mining sector than it has residents. Several major mines on the Carlin Trend are located in Eureka County, but most of those mines' workers live in Elko County. Elko County is notably more economically diverse than Eureka County with a larger and broader selection of services. Elko County has substantial casino and hospitality industries and offers a variety of other services, which notably broadens their employment bases.

The combined labor force in Eureka and Elko Counties is currently estimated at 28,275 individuals, approximately 25,981 of whom are employed. The remaining 2,294 unemployed individuals representing 8.1 and 8.8 percent unemployment rate, respectively (NDETR 2013b). This level is notably lower than the 13.0 percent statewide unemployment rate and is somewhat lower than the national rate, estimated at approximately 9.7 percent (NDETR 2013). The pattern of unemployment rates for these two counties has been consistently below the state average for several years. Unemployment rates for these 2 counties have likely risen in the last 3 years, as they have all over Nevada.

Housing

Short-term housing opportunities in the CESA study area are amply available in the City of Elko which is home to 31 motels, hotels, and casinos hosting over 2,000 rooms. There are several mobile home parks and 6 recreational vehicle (RV) parks in the city with approximately 500 spaces. There are several campgrounds in the surrounding area, several of which are on BLM-administered lands.

Community Facilities and Services

The City of Elko obtains municipal water from 18 deep-water wells, with 25 million gallons of storage capacity. The system has a maximum production capacity of 14.5 million gallons per day (mgd) with current usage ranging from 3 mgd to a peak of 13 mgd. Carlin obtains water from one deep-water well and several natural springs. Water is stored in a 2-million-gallon tank. Peak production capacity is 1.4 mgd, averaging approximately 1 mgd.

Elko and Carlin both have wastewater treatment facilities. Elko's is a "fixed film" biological treatment plant averaging 3.5 mgd. Approximately 60 percent of treated water is reused for irrigation. Carlin employs two lagoons with rapid infiltration basins. The City of Elko operates a regional solid waste landfill. At current use rates, it has capacity in excess of 200 years.

Law enforcement for unincorporated areas in Elko County is provided by the County Sheriff. Elko and Carlin police departments are responsible for incorporated area jurisdictions. The Eureka County Sheriff provides law enforcement for rural Eureka County. The Nevada Highway Patrol provides law enforcement on the state highway system.

Fire protection services are provided by numerous agencies throughout the CESA study area. The Elko City Fire Department is the largest of the agencies with 3 staff positions and 15 career firefighters augmented by 34 volunteer positions. The department has 10 major pieces of equipment, including 7 regular engines, 2 smaller specialty trucks, and a specialized airport engine. The department also houses four pieces of Nevada Department of Forestry firefighting

equipment. The Carlin Volunteer Fire Department serves the city and surrounding area with fire protection and ambulance services with a volunteer membership of 33. In addition to the local fire departments, the BLM, U.S. Forest Service, and the Northeastern Fire Protection Department of the Nevada Division of Forestry provide fire protection, primarily in outlying areas where they are primarily responsible for fighting wildland fires. Local, state and federal agencies are all involved in mutual aid/cooperative agreements, supporting each other as appropriate and as needed, depending on the circumstances of each fire.

The Northeast Nevada Regional Hospital in Elko is the principal health care facility for all of northeastern Nevada. It provides 24–hour emergency care and has 75 acute care rooms. The hospital has a full service laboratory, an intensive care unit; both magnetic resonance imaging and computerized aerial tomography scan capabilities, and provides most major medical specialty services. The hospital also provides services to the Elko Band Colony Health Center under an Indian Health Service contract. The Carlin Community Health Center is one of a series of federally supported clinics providing health care to medically underserved areas operated by Nevada Health Centers, a private, non-profit organization. The Carlin clinic is staffed by physicians, physician assistants and nurse practitioners. The center provides service in family medicine, preventative health, women's health, children's health and immunizations, health education, prenatal and newborn care, and pharmacy services.

Social Conditions

Eureka and Elko Counties grew very rapidly in the 1980s due to a boom in mining and related support activities, but stabilized in subsequent years when they experienced years of modest population growth and decline. Growth has resumed in recent years in most counties, but at more moderate rates. The passage of time and the community's ability to weather not only the booms, but also subsequent downturns, have allowed for development of the relatively stable social setting that now exists. Many residents have lived in the area for a number of years, social ties have become established, and residents take pride in their communities. Many of the people place a high priority on maintaining informal lifestyles and small town traditions.

"Social stratification in the area is often defined by income, length of residence, educational attainment, and ethnicity. Local residents earning high incomes are considered to be the most influential in the community. The most powerful groups viewed by residents as making decisions about the area's future include federal and state government, county commissioners, environmental organizations, and large corporations" (BLM 2002b).

Gold prices continue to be a key factor driving the growth or decline of the communities. When prices dropped in the late 1990s, workers were laid off, some mines announced early closures, and expansion plans were delayed. As prices rose recently, the reverse was true. More recently, a downward movement in gold prices has resulted in layoffs in the CESA. Several mines are working towards implementing growth plans to take advantage of the opportunity. Although rural Nevada's larger communities, like Elko are more diversified than they were two decades ago, the mining industry is still an important sector, affecting both the economy and the psychology of area communities.

Environmental Consequences:
The primary issues related to social and economic values include:

- Potential short term effects associated with temporary housing of construction related personnel.
- Potential public finance effects related to increased property tax revenues in Eureka County.

Proposed Action:
Compared to existing and recent mine development, the proposed pipeline project would be a relatively small project. Employing an expected 40 to 50 employees during the 3-5 month construction period, the short term effects of temporary housing and subsistence required would be easily absorbed by the Elko and Eureka Counties. During construction, it is expected that employees would reside in Carlin, Elko or in camper trailers at commercial campground locations within Eureka or Elko County. Currently, that construction period would not be likely to conflict substantially with any other major construction in the CESA, thus no temporary housing shortage would be expected. Propane deliveries would be eliminated for both mine sites with a resultant decrease in need for driver hours and decreased propane sales in the county. It is anticipated the drivers and product would be delivered elsewhere in these counties.

Because much of the equipment for the pipeline operation would be automated, permanent employment for the pipeline itself would be only one full-time person for several months following completion of the pipeline declining to a likely half-time position during the remaining lifetime of the pipeline. Annually, it is expected to employ 2-3 persons for 2-4 weeks each to conduct onsite inspections of the pipeline and to complete regular maintenance.

Based on a Conceptual Tax Obligation calculation summary prepared by PPC, sales and use tax applicable to the parts and materials used on the EPP and an annual property tax based on the fully capitalized construction cost have been estimated. For sales tax, one-third of the cost would be for parts and materials subject to sales tax for Eureka County. Property tax was estimated based on total construction cost, plus sales tax to calculate the Taxable Value with an Assessed Value of 35 percent of the Taxable Value. The property tax rate for Eureka County was estimated based on the average county-wide tax rate of 2.9078 percent (http://www.nvenergy.combusiness/economicdevelopment/county/elko/busoverview.cfm).

Conceptual Tax Obligations are summarized below in Table 13.

Table 13. Conceptual Tax Obligations

Year	Item	Eureka County
Year 1	Sales & Use Tax	$275,000
Year 2 and beyond	Property Tax	$200,000
	Sales & Use Tax	$2,000
	Totals	$202,000

It is highly unlikely that construction and long term operation and maintenance of the EPP would have measureable effects on population and demography, individual and household income, economy and employment, public facilities and services, and social conditions.

No Action Alternative:
Under the No Action Alternative, the BLM would not approve the proposed project and there would be no temporary increase in short term housing and subsistence required during construction of the proposed pipeline. Eureka County would not realize the Conceptual Tax Obligations summarized in Table 13. There would be no impacts to the local propane industry.

Cumulative Effects:
The CESA for social and economic resources is the same two-county area as the direct effects study area (Figure 3-16). Although the proposed construction period is short, 3 to 5 months, the expected life of the EPP is 50 years. Therefore, cumulative effects have been evaluated in the context of both time periods.

In addition to the continuation of existing mining activities, state highway rehabilitation projects, and the RFFAs discussed in Section 3.2 along the Carlin Trend, there are no other major construction activities expected to occur during the anticipated construction period of the EPP. Therefore, the project, if constructed, would continue the pattern of short-term construction projects that have been common in the CESA for the last 30 years with no substantive conflict with any other ongoing construction project for short term housing, subsistence, or public facilities and services. Because the pipeline project has a very small temporary construction and permanent employment impact on Elko and Eureka counties, it would not contribute measurably to cumulative impacts for population and demography, individual and household income, economy and employment, and social conditions, in contrast to new and expanded mining operations at the various mines in and adjacent to Elko and Eureka Counties. The proposed pipeline would simply help maintain the existing level of economic activity (BLM, 2012a).

Over both the short and long term, post construction increased property tax revenues in Eureka County would be a positive effect on County finances as collection of property tax for the EPP requires a small County expenditure utilizing existing County personnel.

3.3.10 Air Quality and Climate Change

Affected Environment:
Air pollutant sources within the EPP study area are contained within Nevada Department of Environmental Protection Bureau of Air Pollution Control Air Basins 051 Maggie Creek Area and 061 Boulder Flat 061 (Figure 3-2) and include existing mining operations and other background sources (BLM 1993, 2010c). Air modeling completed for the North Operations Area and the South Operations Area has shown that, for each of the Newmont and Barrick projects contained within these areas, air pollutant concentrations are localized near the individual project boundaries, and modeled air pollutant concentrations diminish rapidly with distance from project boundaries (BLM 2010c). Furthermore, none of the predicted concentrations for PM-10 particulates, PM 2.5 particulates, carbon monoxide, sulfur dioxide, ozone, and nitrogen dioxide approach or exceed national ambient air quality standards (NAAQS), and are not expected to affect the closest PSD (Prevention of Significant

Deterioration) Class I area (Jarbidge Wilderness) air quality or visibility (BLM 1993, 2010c).

The potential impacts of "greenhouse gas" (GHG) emissions including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO_x), water vapor, and several trace gasses are the subject of on-going scientific research. On a regional and global scale GHG emissions are thought to cause a net warming effect of the atmosphere essentially through insulation. Along with variations in climatic conditions over millennia, GHG levels are thought to vary correspondingly. Across the Earth's surface, industrialization and burning of fossil carbon sources have resulted in increased concentrations which may contribute to overall climatic changes.

Given the varied locations and inconsistency in measurements globally, it would not be possible to determine the spatial and temporal variability and change of climatic conditions as a result of GHG emissions. However, some scientists believe global mean surface temperatures have increased nearly 1°C (1.8°F) over the past 100 years. In addition, predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures would be more likely than increases in daily maximum temperatures.

Precise assessment of GHG emissions and climate change for individual localized activities, such as the EPP, is in its formative phase. It is not currently possible to predict with confidence either the net impact to climate as a result of the EPP or the impact of climate change on the EPP study area during the coming years. The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts for an individual activity. Climate of the study area is typical of the Great Basin high desert with cold, wet winters with precipitation heaviest in the fall, winter, and spring (November through May) and hot, dry summers, when precipitation is lightest (June through October) (Western Regional Climate Center [WRCC] 2009).

Environmental Consequences:

Proposed Action:

Vehicle travel to and from the EPP and trenching activities would temporarily result in fugitive dust. PPC would water construction areas and access roads as needed to minimize fugitive dust during construction. Given the size and scope of the Proposed Action, vehicle and construction equipment emissions during construction activities are not likely to approach a substantive quantity.

Construction of the EPP would be a temporary source of air pollutants including NO_x, CO (carbon monoxide), CO_2 and fugitive dust (PM_{10} and $PM_{2.5}$, less than 10 and 2.5 microns in diameter, respectively). The primary source of these emissions would be exhaust from diesel powered construction equipment and disturbed soil surfaces. Based on the equipment listed in Table 3 (Section 2.1.2), it is conservatively estimated that over a period of 5 months the EPP construction activities would be the source of approximately 31.6 tons of NO_x, 183.4 tons of CO, 31,489 tons of CO_2, and 6 tons total PM_{10} and 2.6 tons total for $PM_{2.5}$ particulate matter. Control of gaseous emissions from diesel engines would be minimized through proper operations and maintenance of equipment. Production of fugitive dust would be minimized through use of

water trucks dedicated to access routes used for daily employee transportation and materials deliveries and for work areas. Upon completion of construction and reestablishment of vegetative cover, all measurable sources of air pollutants would be gone. Operation and maintenance of the EPP would not result in measurable emissions. Elimination of trips to supply propane to the mine would reduce truck emissions compared to the existing situation.

No Action Alternative:

Potential impacts resulting from implementation of the Proposed Action to air quality, climate change and greenhouse gas emissions would be avoided with selection of the No Action Alternative.

Cumulative Effects:

The CESA for air quality is the Nevada Department of Environmental Protection Bureau of Air Pollution Control Air Basins 051 Maggie Creek Area and 061 Boulder Flat 061 (Figure 3-2) that include existing mining operations and other background sources (BLM 1993, 2010c). The CESA for GHG and climate change is worldwide. Given the temporary nature of construction of the EPP relative to larger ongoing permitted activities in the area, the EPP is not expected to result in a measurable incremental impact related to air quality and Greenhouse Gas Emissions. There is no cumulative impact issue of concern related to this project.

4. MONITORING AND MITIGATION

All mitigation and conservation strategy measures proposed by PPC and the BLM to reduce potential impacts from the EPP to a level that is not expected to result in an adverse impact to resources and resource have been included in the Proposed Action as set forth in Chapters 2 and 3 of this EA. Therefore, no additional mitigation or mitigation monitoring is described in this Section.

Please refer to Appendix 3 regarding the Raptor and Migratory Bird Conservation Strategy for the Eureka Pipeline Project.

5. CONSULTATION AND COORDINATION

This EA was prepared by a third party contractor (Wood Rodgers, Inc.) under the guidance of the BLM and in coordination with other local, state, federal, and tribal personnel. Preparation included review of agency files, field surveys, and review of supporting documentation. BLM also issued a press release that was printed in the local newspaper, The Eureka Sentinel. The press release solicited public comment.

5.1 Persons, Groups, Tribes and Agencies Consulted

The following persons, groups, and agencies were contacted during the preparation of this EA.

Eureka County Department of Natural Resources
Eureka County Assessor's Office
Nevada Department of Wildlife – Chett VanDellan and Matt Jeffress
Nevada Natural Heritage Program
Nevada Department of Transportation, District III – Jo Sherwood
United States Fish and Wildlife Service
Newmont Mining Corporation
Barrick Gold of North America, Inc.
NV Energy
Newmont USA Limited/Elko Land and Livestock Company
Barrick Goldstrike Mines

Native American Consultation:
Section 3.3.2 of this EA describes the Native American consultation process for this project.
Confederate Tribes of the Goshute Indian Reservation
Elko Band Council
Shoshone Paiute Tribes of the Duck Valley Indian Reservation
Wells Band Council
Te-Moak Tribe of Western Shoshone
Battle Mountain Band Council
South Fork Band Council
Duckwater Shoshone Tribe
Yomba Shoshone Tribe
Ely Shoshone Tribe
Bureau of Indian Affairs
Western Shoshone Descendants of Big Smoky
Western Shoshone Defense Project
Western Shoshone Committee

5.2 List of Preparers

U.S. Bureau of Land Management - Tuscarora Field Office
Elisabeth Puentes - Project Manager
Deb McFarlane – Assistant Field Manager
Jerrie Bertola - Grazing and Range, Vegetation
Terri Barton – Noxious Weeds

Nycole Burton - Wildlife, special status species, including migratory birds; habitat seeding
John Daniel – Soil, water, and air quality
Beth Bigelow - Cultural Resources, and Native American Concerns
Zack Pratt - Recreation, Visual Resource Management, Wilderness Review

Wood Rodgers, Inc.
Leslie Burnside, Associate Environmental Specialist
Melissa Lindell, Principal Planner
Ashley Santti, GIS Specialist
William Coleman, P.E., Pipeline Design

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Bing Maps: @ Harris Corp, Earthstar Geographics LLC © Microsoft Corporation.

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APPENDIX 1

FIGURES 3-1.2 THROUGH 3-1.11

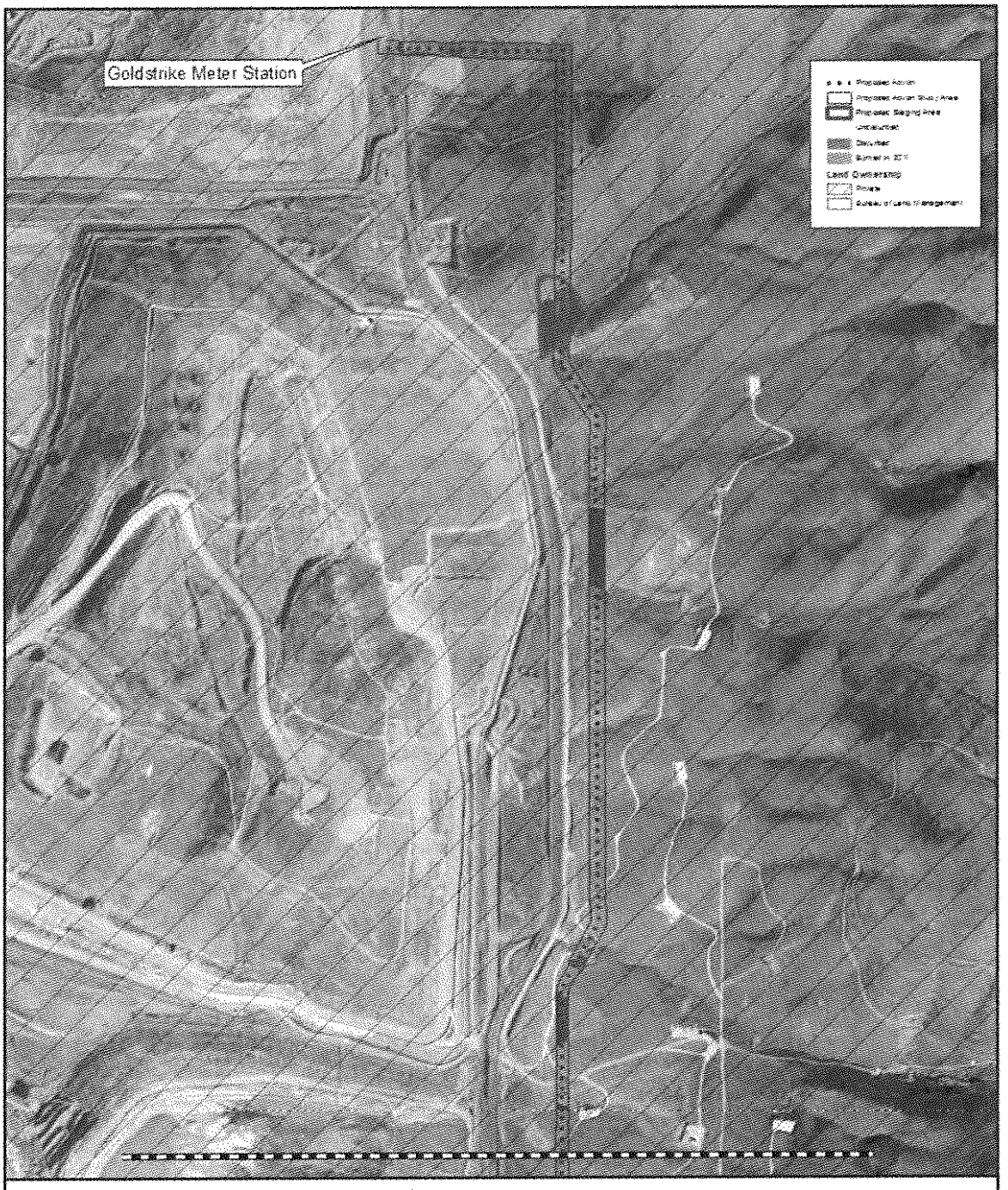

FIGURE 3-1.2 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

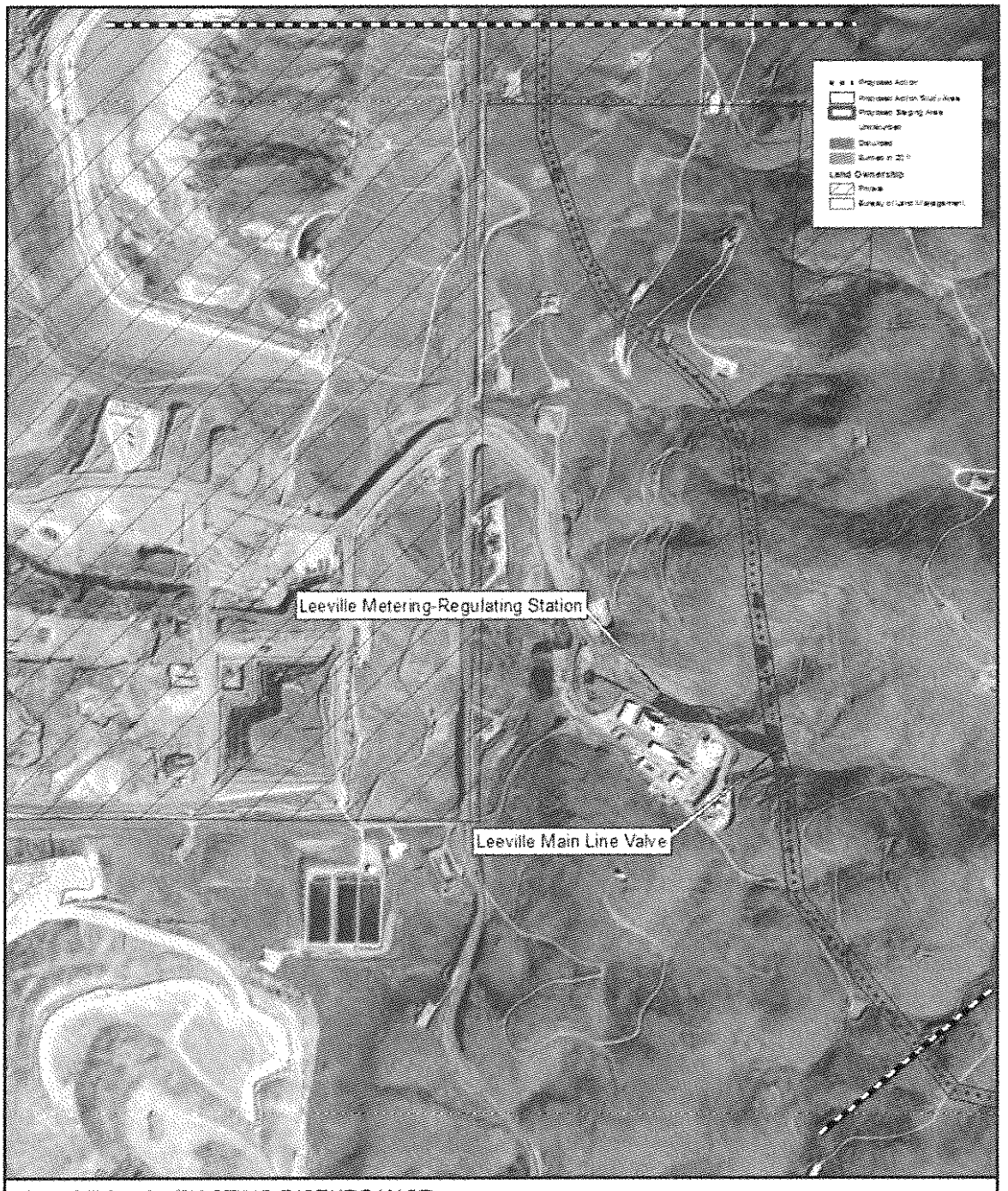

FIGURE 3-1.3 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
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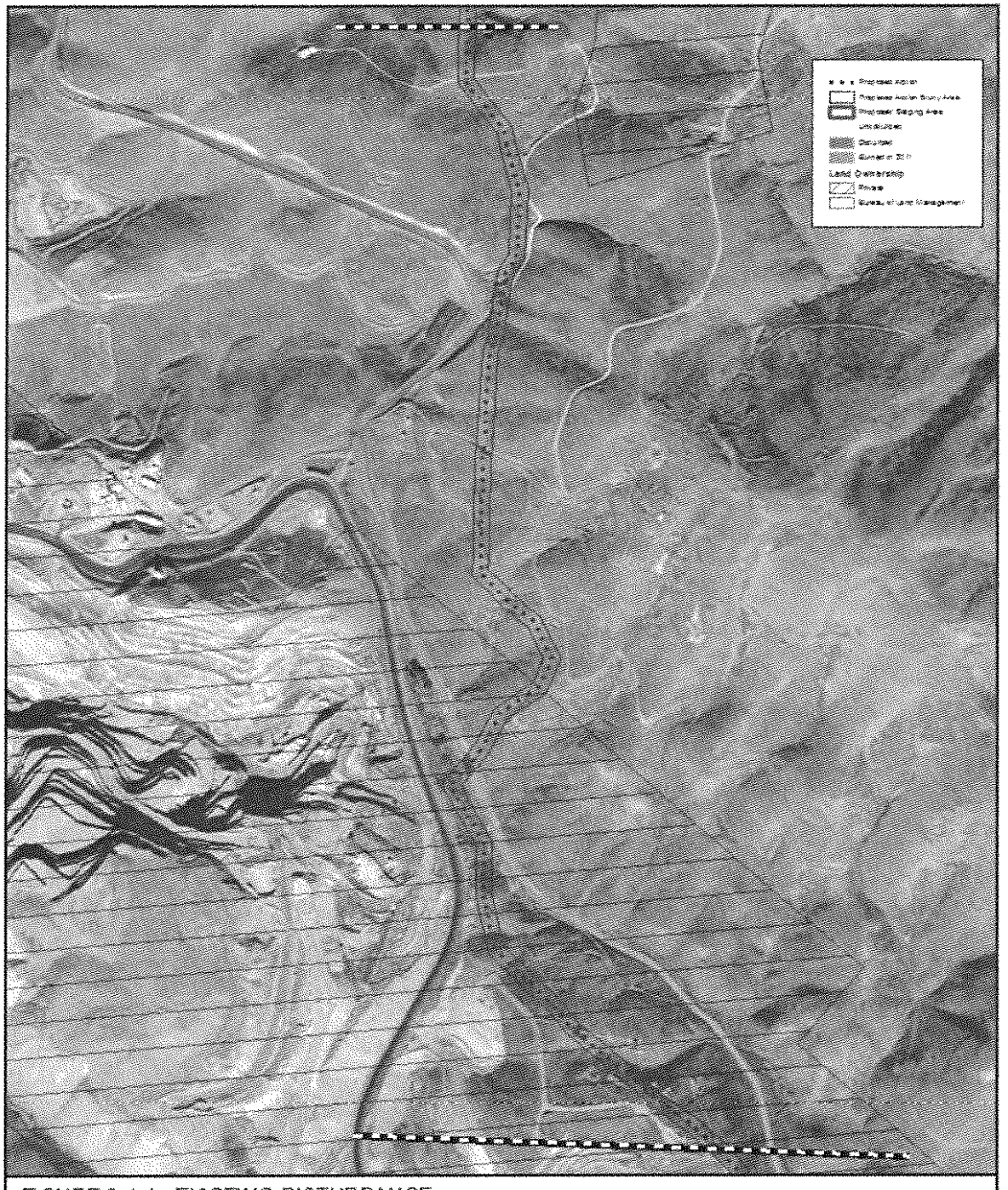

FIGURE 3-1.4 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NORTH

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FEET

NOTES:
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

FIGURE 3-1.5 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES:
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Hoxted, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

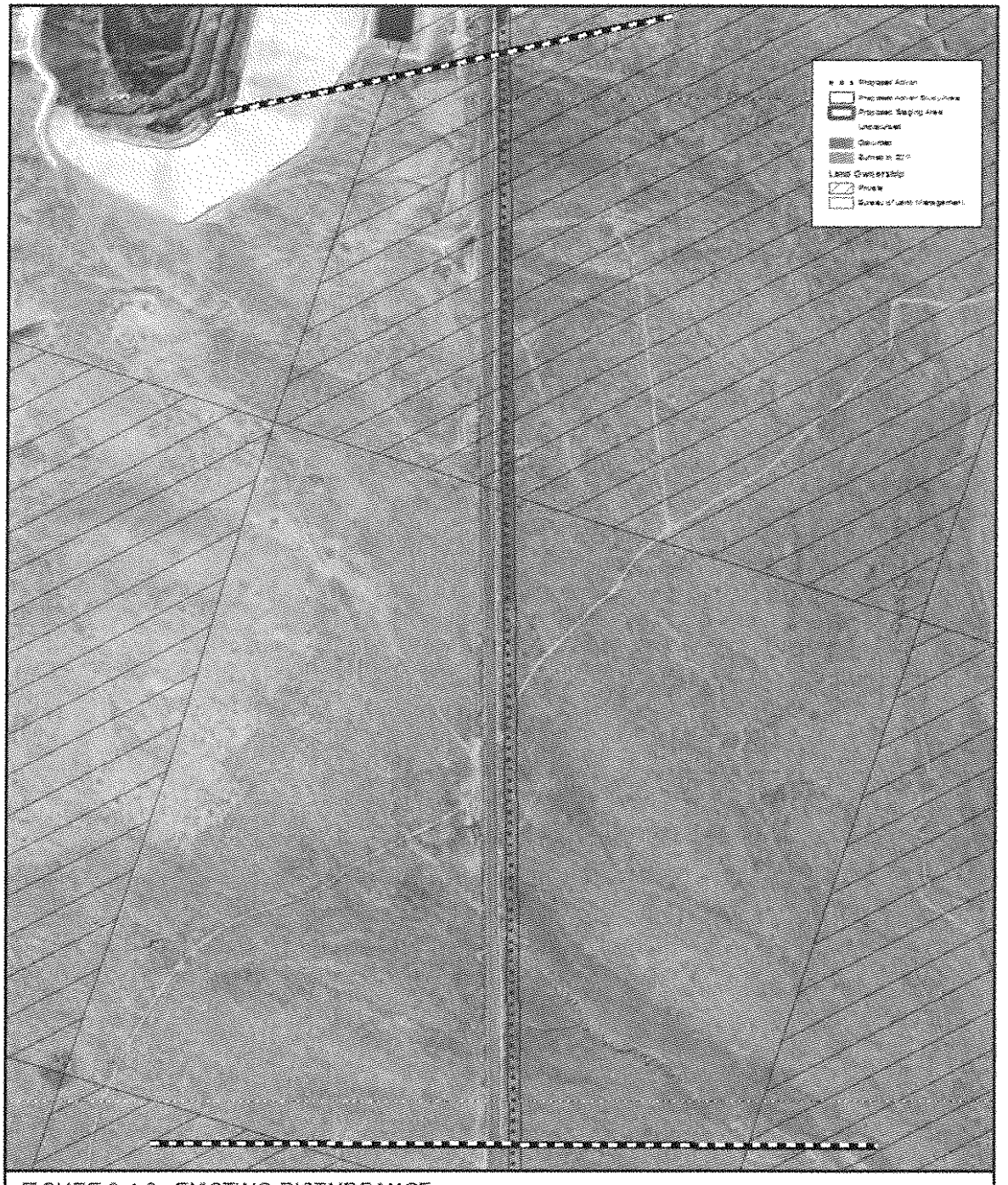

FIGURE 3-1.6 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

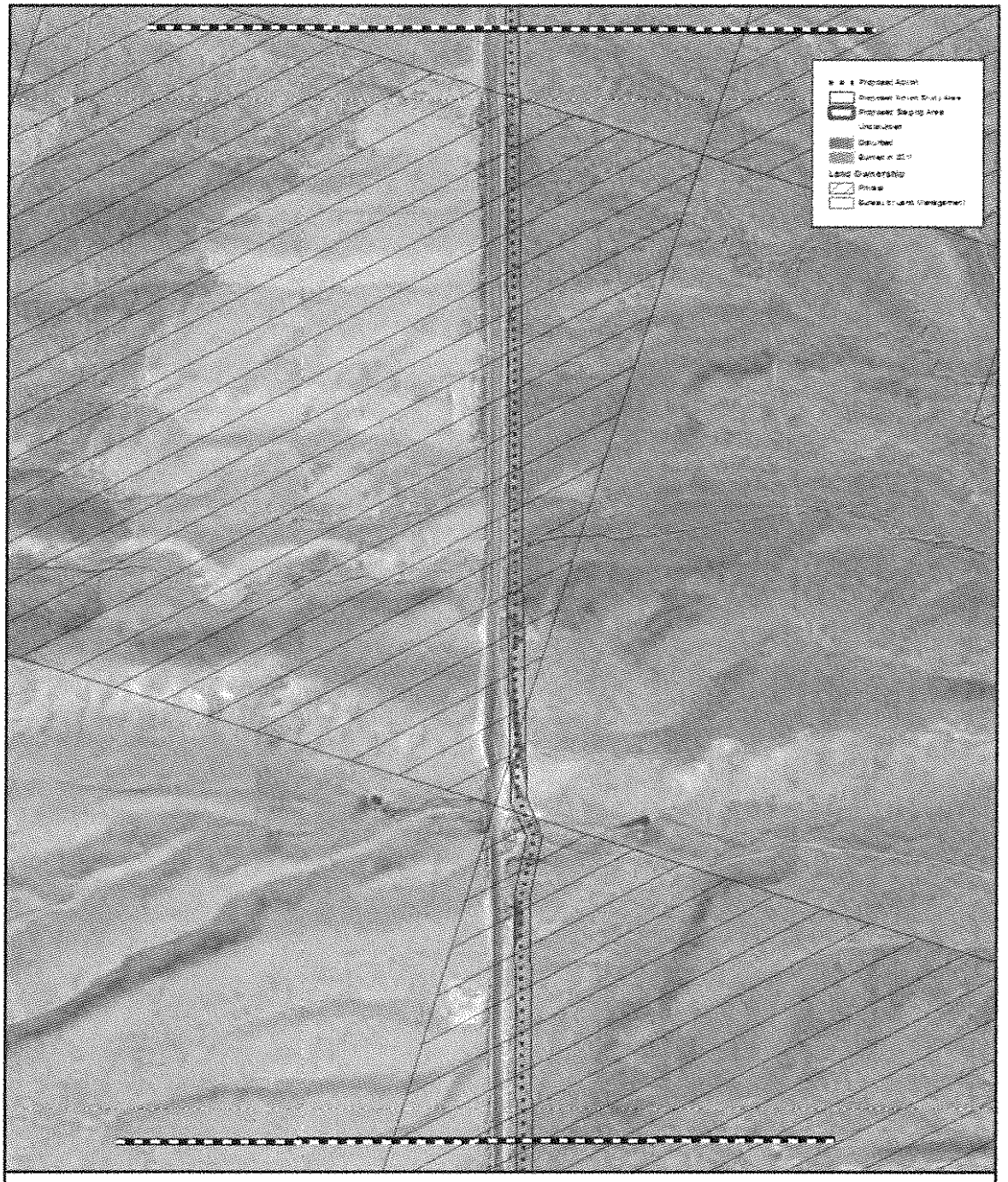

FIGURE 3-1.7 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES:
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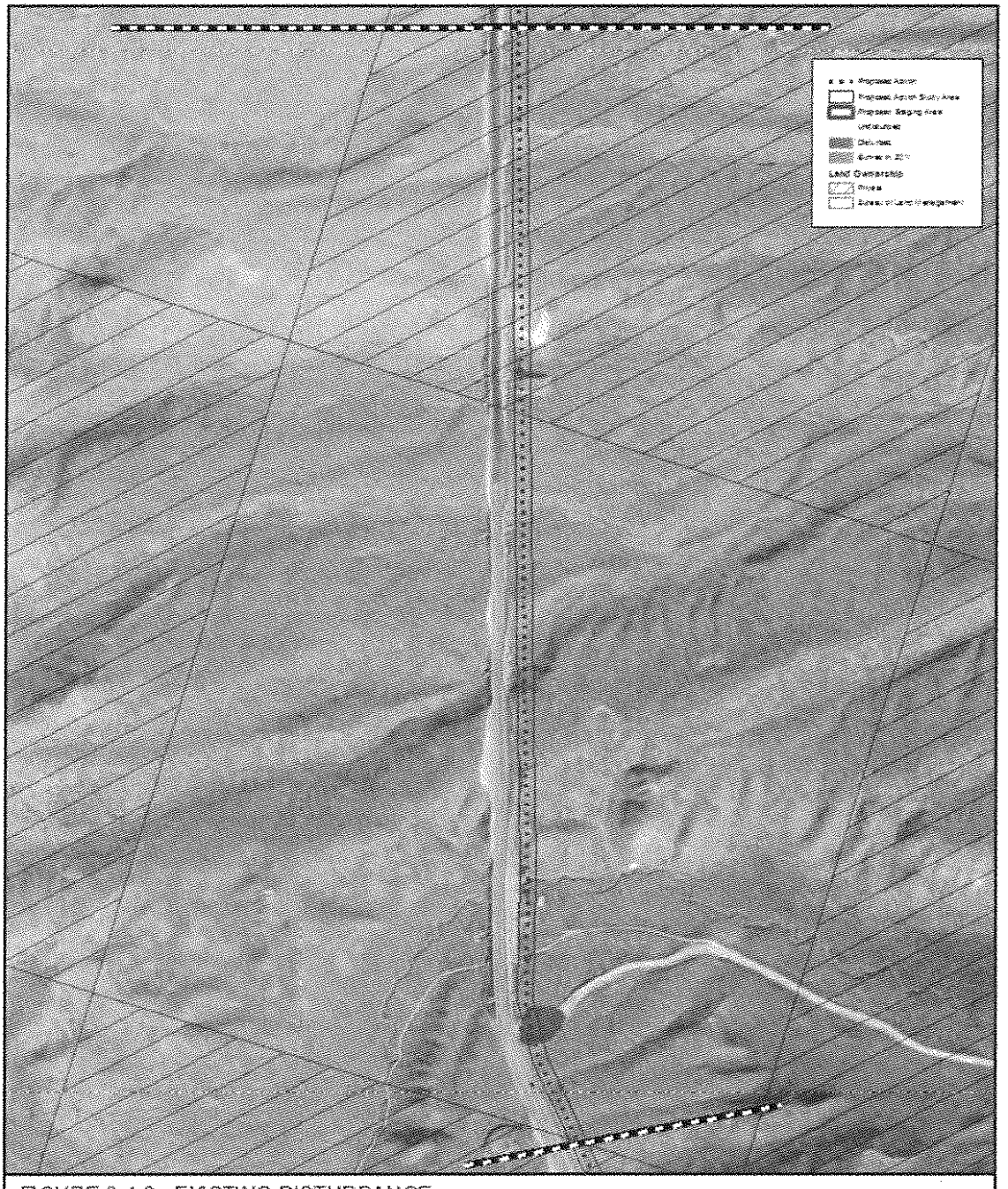

FIGURE 3-1.8 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NORTH

0 500 1,000
FEET

NOTES
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

FIGURE 3-1.9 : EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

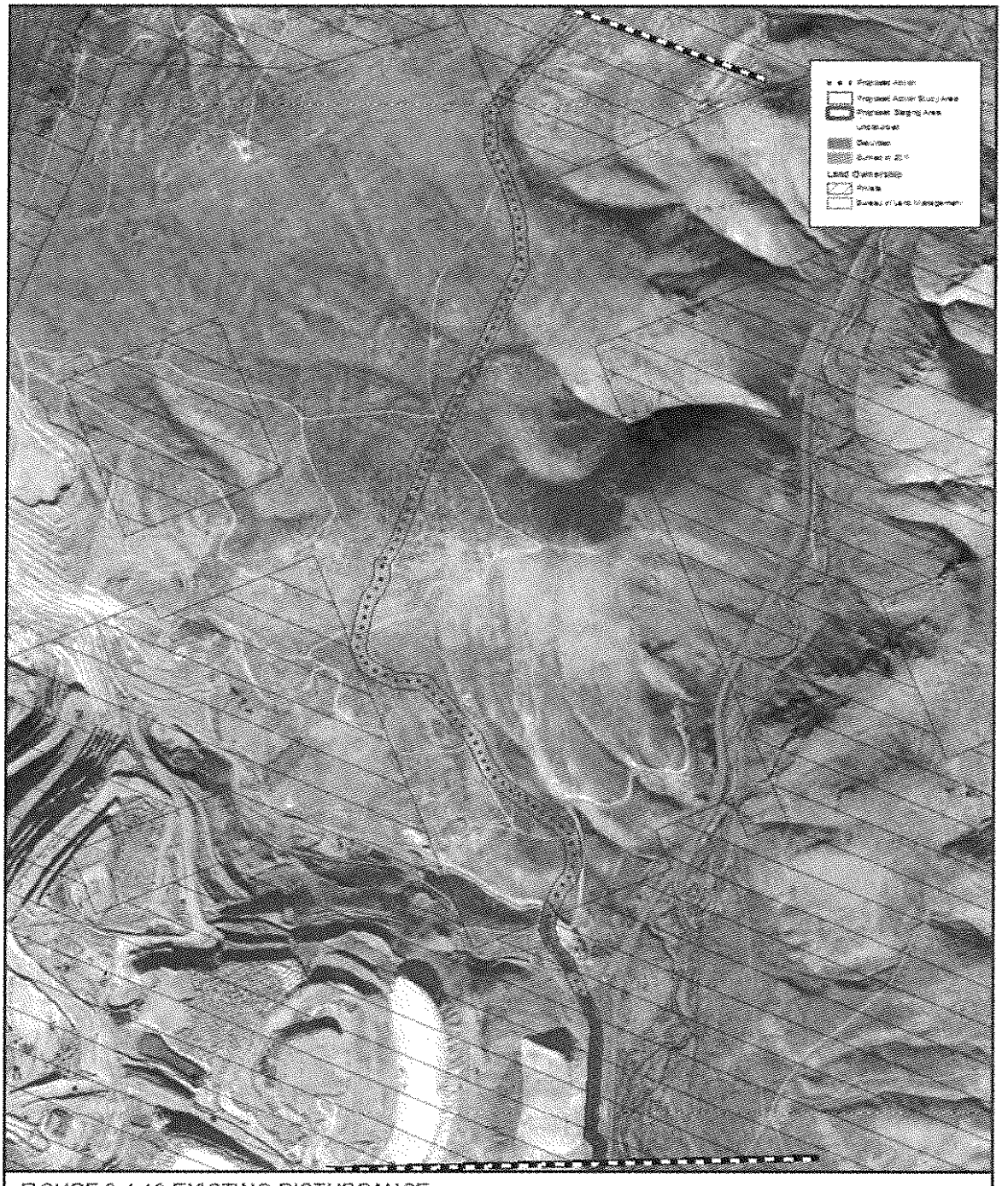

FIGURE 3-1.10 EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NORTH

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FEET

NOTES:
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

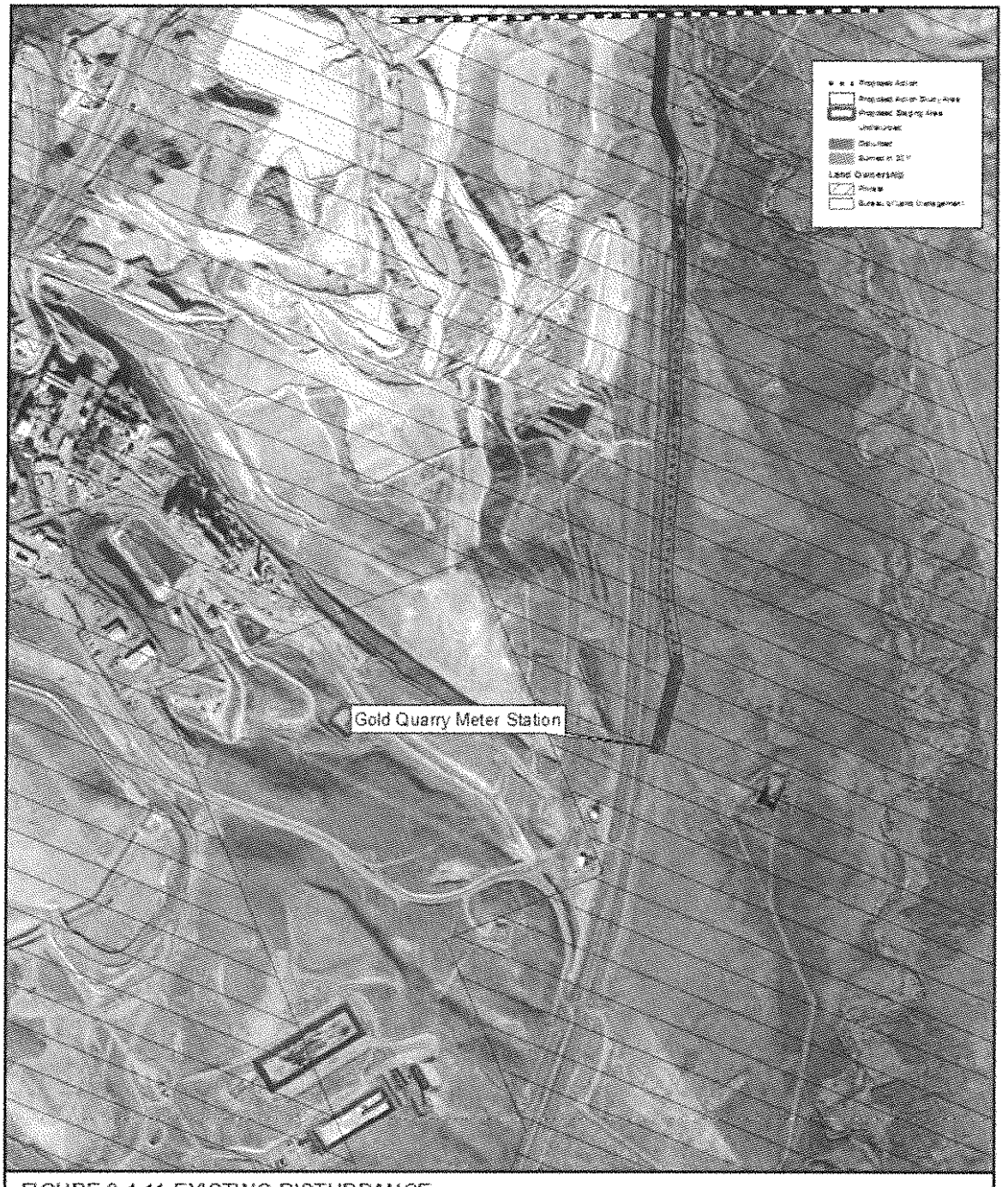

FIGURE 3-1.11 EXISTING DISTURBANCE WITHIN THE STUDY AREA
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NORTH

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Feet

NOTES:
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

APPENDIX 2

SENSITIVE SPECIES HABITAT REQUIREMENTS

Based on queries of the NNHP and the USFWS eleven special status species were identified as potentially occurring within the EPP biological resources study area (temporary ROW) (NNHP 2013, NDOW 2013a, USFWS 2013). The study area is defined as 100 feet wide (50 feet on each side of the centerline) except in areas where the slope is 20 percent or greater. For safety and construction purposes, where the slope is 20 percent or greater construction would require a temporary ROW of 125 feet (62.5 feet on each side of the centerline). Occurrence potential within the study area was evaluated for each species based on their habitat requirements and/or known distribution. Based on these evaluations, five special status wildlife species have been eliminated from detailed analyses. These species include Lahontan cutthroat trout, Nevada viceroy, Columbia spotted frog, Townsend's big eared bat, and Greater Sage-grouse. The six special status wildlife species identified as occurring within the study area are addressed in this EA in Section 3.3.6 and include pygmy rabbit, Western burrowing owl, golden eagle, ferruginous hawk and prairie falcon.

Nevada Viceroy *(Limenitus archippus lahontani)*
This butterfly inhabits moist open or shrubby areas such as lake and swamp edges, willow thickets, valley bottoms, wet meadows, mainly along the Humboldt River and lower tributaries, with additional colonies near Fallon and Fernley. It is a USFWS Species of Concern and a Nevada BLM Sensitive Species (BLM 2001). It is only found in the immediate vicinity of willows, which are the larval host plant. These specific habitat requirements are not available within the EPP study area and thus it is unlikely that this species is present in the EPP study area.

Lahontan Cutthroat Trout *(Oncorhynchus clarkia henshawi)*
Lahontan cutthroat trout generally occur in cool flowing water with available cover of well-vegetated and stable stream banks, in areas where there are stream velocity breaks, and in relatively silt free, rocky riffle-run areas[1] (USFWS 2010). These habitat requirements and thus this species are not present in the EPP study area.

Columbia spotted frog (Great Basin Population) *(Rana luteiventris)*
The Great Basin population range includes eastern Oregon, southwestern Idaho, and the northern drainages of Nevada. Spotted frogs live in spring seeps, meadows, marshes, ponds and streams, and other areas where there is abundant vegetation. They often migrate along riparian corridors between habitats used for spring breeding, summer foraging and winter hibernation. The species is currently a candidate species for listing under the Endangered Species Act. These habitat requirements and thus this species are not present in the EPP study area.

Townsend's big-eared bat *(Corynorhinus townsendii)*
This bat species is found throughout Nevada, from low desert to high mountain habitats. It is concentrated in areas offering caves or mines as roosting sites and preferring caves and mines where the temperature is 54 degrees f (12 degree c.) or less but usually above freezing. Although this species may occur throughout the Carlin Trend mining area, these habitat preferences are not present in the EPP Study area and thus this species in not likely to occur in the EPP Study Area.

[1] USFWS. 2010. http://fws.gov/nevada/protected_species/fish/species/lct.html

Pygmy Rabbit

Pygmy rabbits (*Brachylagus idahoensis*) are typically found in areas of tall, dense big sagebrush cover and are highly dependent on sagebrush to provide both food and shelter throughout the year. Their winter diet consists of up to 99 percent sagebrush (USFWS 2011). Pygmy rabbit burrows are generally found in relatively deep, loose soils of wind-borne or water-born origin. In September of 2010, the U determined that the pygmy rabbit does not warrant protection under the Endangered Species Act, however the Nevada BLM State Office has classified this species as sensitive, and Nevada Natural Heritage has categorized this species as vulnerable to decline.

The EPP Study area may support suitable habitat and thus it is possible for this species to occur within the study area.

Greater Sage-Grouse (sage-grouse)

The Greater Sage-Grouse is found throughout Nevada in sagebrush-dominated habitats[2]. Sagebrush is a key component of sage-grouse habitat on a year-long basis. Sagebrush provides forage and nesting, security, and thermal cover for this species. Moist areas that provide succulent herbaceous vegetation during the summer months are used extensively as brood rearing habitat. Open, often elevated areas within sagebrush habitats usually serve as breeding areas (strutting grounds or lek sites). During winter, sage-grouse often occupy wind exposed areas where sagebrush is available (e.g., drainages, southern or western slopes, or exposed ridges). Considering that, although the study area is located within Preliminary General Habitat, habitat requirements in the study area have been impacted by prior activities leaving available habitat highly fragmented. It is possible that sage-grouse may occasionally be found in the study area, but the study area does not provide important or consistent habit for the sage-grouse.

Burrowing Owl *(Athene cunicularia)*

The western burrowing owl (*Athene cunicularia hypugaea*) breeds throughout Nevada. The majority of the breeding population migrates from northern Nevada during the winter months. However, observations of this owl have been recorded throughout Nevada during all months of the year. Breeding by burrowing owls is strongly dependent on the presence of burrows constructed by ground squirrels and badgers. Prime burrowing owl habitat must be open, have short vegetation, and contain an abundance of burrows. Burrowing owls begin nesting in April, and young typically fledge by August. The western burrowing owl has been designated by the BLM Nevada State Office as a sensitive species and by Nevada Natural Heritage as vulnerable to decline.

BLM Nevada State Office Best Management Practices for the Sagebrush Biome (BLM no date) to assist BLM field offices in the consideration of migratory birds incudes the requirements for pre-disturbance migratory bird nesting surveys as described under Section 2.1.4.

The nearest known burrowing owl population is approximately midway down the SOAPA North-South Haul Road and to the west approximately 1 mile (Figure 3-11)(BLM 2013b) therefore, it is possible that western burrowing owl occur within the EPP study area.

[2] NNSG (Northern Nevada Stewardship Group). 2004. Elko County Sagebrush Ecosystem Conservation Strategy

Golden Eagle (*Aquila chrysaetos*)
The golden eagle, a USFWS Species of Concern, a Nevada State Protected species, Nevada BLM sensitive species, protected under the Bald and Golden Eagle Protection Act and the MBTA is found in a variety of open, usually relatively dry habitats throughout the western United States. In Nevada, it often nests on cliffs above foraging habitat with an adequate prey base including sagebrush flats, pinon-juniper woodland, and salt desert shrub. In proximity to the EPP alignment, three active golden eagle nests have been confirmed (BLM 2013c). The locations are within 1.25, 0.8 and 0.7 miles of the EPP alignment. The closest two of the three locations are topographically screened from the EPP alignment by the Maggie Creek Canyon and State Route 766 which subjects these two nests to constant vehicular traffic noise. In addition, all three nests are separated from the EPP alignment by current mining activity.

Ferruginous Hawk (*Buteo regalis*)
The ferruginous hawk, a USFWS Species of Concern, a Nevada State Protected species, BLM sensitive species, and protected under the MBTA inhabits the open sagebrush grasslands of central and eastern Nevada (BLM 2001). Nest sites are normally located at the interface between pinion or juniper woodland and open sagebrush. Nest trees typically overlook broad expanses of open sagebrush or grassland from which the hawks hunt ground squirrels and rabbits. Ferruginous hawks nest in the tops of isolated trees and sometimes on rock outcrops or even on the ground on ridges overlooking valleys. One ferruginous hawk nest has been confirmed to be active approximately 5.5 miles east of the EPP alignment (BLM 2013c). This location is topographically screened from the EPP alignment with hunting more likely to occur in open sagebrush steppe between the nest and the EPP alignment.

Prairie Falcon (*Falco mexicanus*)
The prairie falcon is a BLM sensitive species and protected under the MBTA. The falcon favors sagebrush steppe habitat in Nevada, nesting on cliff ledges or isolated trees if available, as well as a small mammal diet. Within proximity of the EPP alignment two nests have been confirmed as active within 0.6 mile and 2.3 miles (BLM 2013c). The further location of the two nests from the EPP alignment is topographically screened from the EPP alignment by the Maggie Creek canyon and is subject to vehicular traffic noise along State Route 766. The second and closer location is sited topographically similar to the EPP alignment as the alignment traverses up and over Schroeder Mountain.

APPENDIX 3

RAPTOR AND MIGRATORY BIRD CONSERVATION STRATEGY

EUREKA PIPELINE PROJECT

RAPTOR AND MIGRATORY BIRD CONSERVATION STRATEGY
EUREKA PIPELINE PROJECT
EUREKA COUNTY, NEVADA

Prepared for:

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February 2014

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A Bird Incident Report Form

1.0 INTRODUCTION

1.1 Scope

A Raptor and Migratory Bird Conservation Strategy (CS) is a project-specific document that provides a program designed to reduce the potential risks of indirect harassment, injury or mortality to raptor and migratory birds that may result from the interaction of these animals with Prospector Pipeline Company's (PPC) construction activities for the Eureka Pipeline Project (EPP).

The Bureau of Land Management (BLM) is currently preparing the *Eureka Pipeline Project Environmental Assessment* (EA) (BLM, 2013b). The EA provides a project-specific analysis of the potential impacts to raptors and migratory birds resulting from the proposed EPP. PPC has voluntarily prepared this CS in compliance with federal guidance documents to outline project-specific practices and measures for reducing raptor and migratory bird impacts potentially resulting from the project.

This CS has been developed based on recommendations from the US Fish and Wildlife Service (USFWS) Draft Guidelines for Raptor Conservation in the Western United States (USFWS 2008), and the Memorandum of Understanding between the BLM and the USFWS to Promote the Conservation of Migratory Birds executed in April 2010 (BLM 2010). The goals of the guidelines are to provide measures to:

- Minimize the risk of "take" under various bird protection statues
- Avoid or minimize impacts to sensitive raptor species, and
- Contribute to the improvement in the status of raptor species which have been determined to be experiencing population declines or to be otherwise at risk.

1.2 Goals of the Raptor and Migratory Bird Conservation Plan

The voluntary implementation of this CS would fulfill several goals simultaneously, and fulfillment of each of these goals would contribute to the satisfaction of the ultimate goal of all CSs: to reduce raptor and migratory bird direct and indirect impacts. The goals specific to this CS are to:

1. Identify activities that have potential to result in indirect harassment, injury or mortality;
2. Reduce the potential for indirect harassment, injury or mortality by implementing specific actions;
3. Establish a reporting system to document any incidents of indirect harassment, injury or mortality; and
4. Assist PPC in compliance with state and federal laws regarding raptor and migratory bird species.

1.3 Implementation of the Raptor and Migratory Bird Conservation Strategy

PPC would do the following to implement the CS and thus accomplish the identified goals. Specifically, PPC would:

- Minimize the potential for direct and indirect impacts to nesting birds during the breeding season;
- Conduct raptor behavior monitoring during the breeding season for the active golden eagle and prairie falcon nests (Figure 5), where the breeding season overlaps with the PPC construction season to document PPC construction activities, if any, that appear to result in changes to normal nesting behavior
- Assist in refining criteria and protocols to further bird conservation through sharing of monitoring data with the BLM, Nevada Department of Wildlife (NDOW) and U.S. Fish and Wildlife Service (USFWS); and
- Ensure accurate and detailed incident reporting.

1.4 Benefits of a Raptor and Migratory Bird Conservation Strategy

The foremost goal of a CS is to reduce the potential for impacts resulting in injury or mortality to raptors and migratory birds. PPC's voluntary implementation of a CS would ensure compliance with the state and federal regulations described in the following section.

1.5 Federal and State Raptor and Bird Protection Laws, Regulations and Policies

1.5.1 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712), which is administered by USFWS, is the cornerstone of migratory bird conservation and protection in the United States. It implements four treaties that provide for international protection of migratory birds. The MBTA states: "it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill ...possess, offer for sale, sell...purchase...ship, export, import...transport or cause to be transported...any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is comprised in whole or part, of any such bird or any part, nest, or egg thereof." (16 U.S.C. 703.) The word "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." (50 CFR 10.12.) In 1972, an amendment to the MBTA resulted in bald eagles (*Haliaeetus leucocephalus*) and other birds of prey being included in the definition of a migratory bird. The MBTA currently protects more than 800 migratory bird species, including waterfowl, shorebirds, seabirds, wading birds, raptors, and songbirds (USFWS, 2008).

1.5.2 Bald and Golden Eagle Protection Act

Under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d), bald eagles and golden eagles (*Aquila chrysaetos*) are provided additional legal protection beyond that provided by the MBTA. The BGEPA makes it unlawful to import, export, sell, purchase, barter, possess or take any bald eagle or golden eagle, their parts, products, nests, or eggs. As used in the BGEPA, "take" includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing an eagle. (16 U.S.C. 668c.)

1.5.3 Endangered Species Act

The Endangered Species Act (ESA) (16 U.S.C. 1531-1544) is administered by USFWS and the Commerce Department's National Marine Fisheries Service (NMFS). USFWS has primary responsibility for terrestrial and freshwater organisms, while NMFS has responsibility for marine species. These two agencies work with other agencies to plan or modify federal projects so that they would have minimal impact on listed species and their habitats. Protection of species is also achieved through partnerships with the states, with federal financial assistance and a system of incentives available to encourage state participation.

Section 9 of the ESA makes it unlawful for a person to "take" a listed species. (16 U.S.C. 1538.) Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." (16 U.S.C. 1532(19).) Through regulation, the word "harm" has been defined by the Secretary of the Interior as "an act which actually kills or injures wildlife...by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering." (50 CFR 17.3.) However, authorization for "incidental take" can be obtained from USFWS for take of listed species that would occur as a result of an otherwise lawful activity. (See 16 U.S.C. 1536, 1539.)

1.5.4 BLM Policy

BLM has implemented policies for special status species found on BLM managed lands. BLM's list of special status species includes species that are listed or proposed for listing under the ESA and species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. Additionally, all federal candidate species, proposed species, and delisted species (for five years after delisting) would be conserved BLM sensitive species (BLM 2008).

1.5.5 Nevada Regulations

The State of Nevada has identified wildlife species that are declining in their range throughout Nevada or are otherwise rare and at risk of extinction. Sensitive and protected animal species are protected in Title 45 of Nevada Revised Statutes (NRS) (NRS 501.100 through 503.104). Classification of wildlife species and related regulations are detailed in Chapter 503 of Nevada Administrative Code (NAC).

1.6 Enforcement of the MBTA, BGEPA, and ESA

The USFWS Office of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement but also through fostering relationships with individuals and industries that proactively seek to eliminate impacts to migratory birds. While it is not possible under the act to absolve individuals, companies, or agencies from liability if they follow these recommended guidelines, the Office of Law Enforcement and the Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals, companies, or agencies who have made good faith efforts to avoid the "take" of migratory birds. The voluntary implementation of this CS is intended to proactively seek to eliminate impacts to migratory birds potentially affected by EPP construction activities.

2.0 STUDY AREA

2.1 Project Description

The EPP is an approximately 18 mile, 12-inch diameter underground natural gas transmission pipeline, located in Eureka County, Nevada, designed and constructed of welded steel, externally-coated, high-pressure line pipe (Figure 1). The EPP would begin at the existing Goldstrike Meter Station which is located on private property within the Barrick Goldstrike Mine operations boundary. The pipeline alignment would be generally along established roadways towards the Newmont Leeville and Gold Quarry Mine north of Carlin. About 3 miles southeast of the Goldstrike Meter Station is the Leeville Mine. A 3- or 4- inch diameter turnout and above ground regulating/metering station would be constructed at the Leeville Mine in order to supply natural gas to that mine. At this same point a 12-inch Main Line Valve (MLV) would be installed in the 12-inch transmission pipeline. From this point the transmission pipeline would extend to the Gold Quarry Mine where a second above ground regulating/metering station would be constructed to supply natural gas to the Gold Quarry Mine. The regulated gas from the Gold Quarry Meter Station would be introduced into the existing Newmont-owned 6-inch pipeline to the millworks at the Gold Quarry Mine (Figure 2).

Installation of the EPP would result in approximately 270 acres of disturbance in the study area of which 59 acres is already disturbed. Approximately 17 acres would be for staging and storage within existing disturbed land, and 0.71 acre would be permanent disturbance on public and private land attributed to above ground facilities. Temporary disturbance would be approximately 94 acres on public land and 117 acres on private land. The Proposed Action would reclaim 211 acres including that previously damaged by wildfire.

2.2 Study Area

For biological resources the study area and temporary ROW are the same and are defined as follows: 100 feet wide (50 feet on each side of the centerline) except in areas where the slope is 20 percent or greater. For safety and construction purposes, where the slope is 20 percent or greater construction would require a temporary ROW of 125 feet (62.5 feet on each side of the centerline). Installation of the EPP under the proposed action would result in approximately 270 acres of disturbance in the study area of which 59 acres is already disturbed. Approximately 17 acres would be for staging and storage within existing disturbed land, and 0.71 acre would be permanent disturbance on public and private land attributed to above ground facilities. Temporary disturbance would be approximately 94 acres on public land and 117 acres on private land. The Proposed Action would reclaim 211 acres including that previously damaged by wildfire. Existing and proposed disturbance is summarized in Table 1 below by existing land surface type within the study area.

Within the study area the following land surface type definitions have been applied; undisturbed - land surface when viewed from an aerial photograph (Microsoft Virtual Earth) that currently supports sufficient vegetation cover to assign a natural vegetation community type; disturbed – land surface when viewed from an aerial photograph (Microsoft Virtual Earth) that is currently graded and lacks sufficient vegetation cover to assign a natural vegetation community type; burned – land areas that have been damaged by wildfire including those that have been seeded and are at some level of restoration from 2001 through 2013 (BLM 2013b).

Table 1. Disturbance Associated with the Proposed Action

Activity	Private Land (Acres)			Public Land (Acres)		
	Upland Undisturbed*	Upland Disturbed* (roads/mining activity)	Upland Burned**	Upland Undisturbed*	Upland Disturbed* (roads/mining activity)	Upland Burned**
Existing/ Proposed Clearing/ Trenching & Backfill of pipe alignment (Study Area)	104	31	12	92	12	2
Proposed Clearing of vegetation on staging areas (Study Area)	1	15	0	0	1	0
Total Proposed Disturbance – 270 acres (Study Area)	105	46	12	92	13	2
Total Proposed Disturbance Private/Public 270 acres (Study Area)	163			107		

Sources:

*Disturbed, undisturbed upland or riparian habitat digitized using: Bing Maps: @ Harris Corp, Earthstar Geographics LLC © Microsoft Corporation.

**Burned in 2011. Bureau of Land Management. 2013b. Tuscarora Field Office GIS. 2011 Fires, Fire History, Received January 2012 & August 2013

2.3 Vegetation

The study area is dominated by sagebrush steppe communities including basin and Wyoming big sagebrush is dominate on deep, salt-free soils with a perennial and annual grass understory. Perennial grass species include bluebunch wheatgrass, Thurber needlegrass, and Sandberg bluegrass (Cronquist et al. 1972)(Figure 3). Approximately 73 acres of the study area have been disturbed by previously permitted exploration activity including roads and drill pads, wildfires from 2005 and later, pipeline and transmission line construction, and mining activities. Vegetation on the undisturbed portion of the EPP study area is typical of upland Great Basin sagebrush/bunchgrass plant community. Major vegetative species present in undisturbed areas include: Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), Douglas rabbitbrush (*Chrysothamnus vicidiflorus*), spiny hopsage (*Grayia spinosa*), Sandberg bluegrass (*Poa Sandbergii*), bottlebrush squirreltail (*Elymus elmoides*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass (*Achnatherum thurberianum*), Indian ricegrass (*Achnatherum hymenoides*), lupine (*Lupinus spp.*), arrowleaf basalmroot (*Balsamorhiza sagittata*), phlox (*Phlox spp.*), and aster (*Aster spp.*). No tree dominant plant communities are present in the study area (Wood Rodgers 2013). Vegetation on areas damaged by wildfire is recovering, both from natural revegetation and from reclamation and restoration efforts by the BLM and others. The wildfire damaged areas would take many years, perhaps decades, to recover the habitat values that existed before the wildfire.

2.4 Soils

Soils within the EPP study area are dominated by well-drained soils on mountains and hills, with some well-drained soils on high terraces and alluvial fans, and a minor amount of area with well-drained soils on low terraces and alluvial fans (NRCS 2006). The Proposed Action includes provisions to concurrently stabilize disturbed areas and seed existing undisturbed areas to minimize loss of the soil resource. During construction, water trucks would be employed to minimize loss of soil as a result of fugitive dust. Following construction, operation and maintenance of the pipeline would not require any extensive future ground disturbing activities.

2.5 Installation of the Pipeline

Pipeline installation would be much like a moving assembly line process, with sections of the pipeline being completed in stages. First, the width of temporary ROW for the pipeline would be cleared and bladed smooth as needed to provide a safe working surface for the installation crew. After blading is completed, 40-foot, externally-coated lengths of pipe would be laid out end-to-end along the intended route within the permitted ROW boundary, a process referred to as "stringing" the pipe. The next step in the process would be for the 40-foot long pipe sections to be welded together to form longer continuous lines of pipe that are prepared for underground installation. Welds are inspected for integrity. Coating would be then applied to the welded pipe ends to complete the external coating for corrosion prevention. Specific sections of the pipe may be bent, if needed, using specialized equipment to fit the contour of the pipeline's path. Once these continuous lines of pipe are readied, commercial trenching and excavating equipment excavate alongside the staged pipe. These trenches are typically four to six feet deep, as the regulations require the pipe to be at least 36 inches below the surface. In certain areas, however, including road crossings and where water features are present, the pipe could be buried deeper as

needed to provide additional protection for the pipe or to allow for the trajectory required by alternative pipeline methods such as horizontal drilling. Road crossings may be cased (the carrier pipe placed within a larger diameter protective pipe) or pipe with a slightly thicker wall would be utilized. When the pipeline crosses State Route 766, construction would use the horizontal directional drill technique to avoid interference with highway traffic. Thicker walled, more heavily coated pipe may be used where water features are present. Given the soil conditions and the standards for construction, the pipe and coating must be protected against damage during and after installation. This would be accomplished by segregating the rocks from the native soil, "bedding" the excavated trench with the fines, laying the pipe in the trench then covering the pipe with more fines to keep rocks away from the coating. After that, the remaining native soil containing the rocks would fill the trench to grade. This carefully controlled process ensures against damage to the pipe and coating during installation and afterward. Keeping the rocks at a safe distance away from the pipe during installation would help prevent any rocks from contacting the pipe during settlement. Where suitable growth medium occurs, soils would be segregated simultaneously with trenching activities to allow growth medium to be placed back at the surface of the trench backfill.

Once the pipe is welded, bent, coated, and inspected it would be lowered into the previously-excavated trenches. This would be accomplished with specialized construction equipment known as side-booms acting to lift the pipe in a level manner and lower it into the trench. Once lowered into the ground, the trench would be filled in carefully to ensure that the pipe and its coating retain their integrity. The last step in pipeline construction would be the hydrostatic test. This consists of filling the pipeline with water and pressurizing to a pre-determined, engineered pressure greater than the MAOP to check for leaks. Water for the hydrostatic test and for dust abatement during construction would be obtained from the Goldstrike, Gold Quarry or Leeville Mine sources, or agricultural sources.

A list of equipment and operators/employees required to construct the EPP is summarized in Table 2. Construction activities would be expected for a minimum of 12 weeks up to a maximum of 20 weeks.

Table 2. EPP Proposed Construction Equipment/Operators

Equipment Quantity	Equipment Description	Operators /Employees
6	Semi-Truck - Pipe Delivery	4
2	Vacuum Lifter or Crane	2
2	D8, D9, D10 Dozer - Blade and/or Loader	1
1	Trencher - Track Unit	1
2	Excavator - Track Unit	2
2	Backhoe	2
6	Side-Boom Tractor	4
2	Super Padder - Track Unit	1
1	HDD Unit	4
1	Pipe Bender - Track Unit	1
4	Dump Truck	4
2	Stakebed Truck - w/Stinger	2
6	Welding Truck	12
4	Water Truck (w/cannon)	4
2	Fuel/Lube Truck	2
9	Pickup	9
1	55HP New Holland Ford Tractor	1
1	Great Plains 8' wide no-till drill seeder	
1	185HP John Deere 4760 Tractor	1
2	10' wide side-by side Haybuster Drill Seeder	
1	Polaris 6 wheeler ATV with broadcast seed and harrow	1
58	**Subtotal**	**58**
	Other Non-Craft Employees	
	Construction Foreman	1
	Construction Inspector	2
	Site Engineer	1
	Surveyor	2
	Compliance Specialist	1
	Construction Laborers	10
	Subtotal	**17**
58	**Total**	**75**

3.0 SPECIES OF INTEREST

3.1 Sensitive Species Criteria and Utilization

In this CS, the term "sensitive species" encompasses all bird species occurring within or near the study area that are protected by any one or more of the laws, policies, or regulations described in Section 1.5 of this document. Specifically, this includes:

- All bird species that are listed as threatened or endangered species or are proposed or candidates for listing under the ESA of 1973 as amended;
- All bird species protected under the MBTA;
- Bald and golden eagles protected under the BGEPA;
- All bird species that the state of Nevada protects through NRS 501.100-503.104, NRS 527.050, and/or NRS 527.60-527.300; and
- All species identified as BLM Sensitive Species in Nevada.

3.2 Sensitive Species Occurring Within or in Proximity to the Study Area

According to the EA prepared for the project (BLM, 2013b), a concise list of protected wildlife species occurring in the study area was compiled from data from the USFWS; the BLM Sensitive Species list for Nevada; the Nevada State Protected, Threatened, and sensitive species lists in NAC 503.030, NAC 503.050, NAC 503.075, and NAC 503.080; and from Nevada Natural Heritage Program. Biologists from the USFWS, BLM, and Nevada Department of Wildlife (NDOW) were consulted to obtain additional input regarding sensitive species. The EA analyzes the potential likelihood of each identified species to occur within the study area. Table 3 lists the raptor species that BLM has documented as having confirmed active nests in proximity to the study area.

Table 3. Sensitive Bird Species Occurring in Proximity to the Study Area

Species Name		
Common	**Scientific**	**Habitat**
Golden eagle	*Aquila chrysaetos*	Often nests on cliffs above foraging habitat with an adequate prey base including sagebrush flats, pinon-juniper woodland, and salt desert shrub
Prairie falcon	*Falco mexicanus*	Favors sagebrush steppe habitat, nesting on cliff ledges or isolated trees if available
Red-tailed hawk	*Buteo jamaicensis*	Sagebrush, grassland, riparian, and pinion-juniper
Ferruginous hawk	*Buteo regalis*	Nest sites are normally located at the interface between pinion or juniper woodland and open sagebrush. Nest trees typically overlook broad expanses of open sagebrush or grassland from which the hawks hunt ground squirrels and rabbits
Western burrowing owl	*Athene cunicularia*	Prime burrowing owl habitat must be open, have short vegetation, and contain an abundance of burrows. Breeding by burrowing owls is strongly dependent on the presence of burrows constructed by ground squirrels and badgers.

Most bird species that occur within or in proximity to the study area would be considered protected species under the MBTA, as the act protects all native birds commonly found within the Elko District, with the exception of gallinaceous species (upland game birds) and introduced, non-native species.

3.2.1 Birds

A variety of common bird species typical of the sagebrush and grassland communities are anticipated to occur in the study area. These birds are typically present within the respective Great Basin habitats from spring through fall. Species expected to occur within the study area include American robin (*Turdus migratorius*), horned lark (*Eremophila alpestris*), chipping sparrow (*Spizella passerine*), Brewer's sparrow (*Spizella breweri*), mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), sage thrasher (*Oreoscoptes montanus*), and the common raven (*Corvus corax*).

Upland game bird species commonly found within the study area include chukar (*Alectoris chukar*) and mourning dove (*Zenaida macroura*). Chukar are typically associated with perennial water sources, mesic areas, and rugged slopes or rock outcrops. They are resident breeders in dry, open, and often hilly country that nest in scantily lined ground scrapes laying eight to 20 eggs. Chukar feed on insects and a wide variety of seeds, including cheatgrass. Rocky habitats in the study area are the primary habitat for this species. Chukar were observed within the study

area in August 2013 (Wood Rodgers 2013). Mourning dove are found in a wide range of habitats usually in close proximity to water and are most likely to occur in the study area during spring, summer and fall (BLM 2012b).

Although a large portion of Greater sage-grouse habitat has been removed by mining activities within the Carlin Trend, incidental use of the area by Greater sage-grouse does still occur outside of concentrated mining activities (BLM 2013b). The remaining fragmented habitat has been categorized by the BLM as Preliminary General Habitat (PGH). Greater sage-grouse are discussed in more detail in Section 3.3.6 of the EA.

3.2.2 Raptors

Raptors known to occur within or in proximity to the EPP study area include red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), prairie falcon (*Falco mexicanus*), and ferruginous hawk (*Buteo regalis*) (N.Burton 2013b)(Figure 4). Ferruginous hawk, golden eagle and prairie falcon are discussed in more detail under Section 3.3.6 Special Status Species.

The red-tailed hawk is associated with a variety of habitats including sagebrush, grassland, riparian, and pinion-juniper and is one of the most common and widespread hawks in North America. It is protected under the MBTA and Executive Order (EO) 13186 (66 FR 3853). Two active red-tailed hawk nests have been confirmed to be located within 1 mile of the EPP alignment.

3.2.3 Migratory Birds

As stated above, Migratory Bird species are protected under the MBTA and EO 13186. Pursuant to the EO a draft MOU among the BLM, USFS, and USFWS was drafted in order to promote conservation and protection of migratory birds. The EO provides guidance to agencies to promote BMPs for conservation of migratory birds. As a result, the BLM Nevada State Office prepared Migratory Bird BMPs for the Sagebrush Biome to assist BLM field offices in the consideration of migratory birds in land management activities presented in Section 3.3.6 (BLM no date).

In addition to the red-tailed hawk discussed above, the prairie falcon, ferruginous hawk, golden eagle and western burrowing owl (*Athene cunicularia hypugaea*) are protected under the MBTA. These species are discussed in more detail under Section 3.3.6 Special Status Species as they have been designated by the BLM Nevada State Office as sensitive species.

BLM Nevada State Office Best Management Practices for the Sagebrush Biome (BLM no date) to assist BLM field offices in the consideration of migratory birds incudes the requirements for pre-disturbance migratory bird nesting surveys as described under Section 2.1.4.

The western burrowing owl (*Athene cunicularia hypugaea*) breeds throughout Nevada. The majority of the breeding population migrates from northern Nevada during the winter months. However, observations of this owl have been recorded throughout Nevada during all months of the year. Breeding by burrowing owls is strongly dependent on the presence of burrows constructed by ground squirrels and badgers. Prime burrowing owl habitat must be open, have short vegetation, and contain an abundance of burrows. Burrowing owls begin nesting in April,

and young typically fledge by August. The western burrowing owl has been designated by the BLM Nevada State Office as a sensitive species and by Nevada Natural Heritage as vulnerable to decline.

The nearest known burrowing owl population is approximately midway down the South Operations Area Project Area North-South Haul Road and to the west approximately 1 mile (Figure 1)(BLM 2013a) therefore, western burrowing owl may potentially occur within the EPP study area.

The golden eagle, a USFWS Species of Concern, a Nevada State Protected species, Nevada BLM sensitive species, protected under the Bald and Golden Eagle Protection Act and the MBTA is found in a variety of open, usually relatively dry habitats throughout the western United States. In Nevada, it often nests on cliffs above foraging habitat with an adequate prey base including sagebrush flats, pinon-juniper woodland, and salt desert shrub. In proximity to the EPP alignment, three active golden eagle nests have been confirmed (N. Burton 2013). The locations are within 1.25, 0.8 and 0.7 miles. The closer two of the three locations are topographically screened from the EPP alignment by the Maggie Creek Canyon, and State Route 766 subjects the nests to constant vehicular traffic noise. All three are separated from the EPP alignment by mining activity.

The ferruginous hawk, a USFWS Species of Concern, a Nevada State Protected species, BLM sensitive species, and protected under the MBTA inhabits the open sagebrush grasslands of central and eastern Nevada (BLM 2001). Nest sites are normally located at the interface between pinion or juniper woodland and open sagebrush. Nest trees typically overlook broad expanses of open sagebrush or grassland from which the hawks hunt ground squirrels and rabbits. Ferruginous hawks nest in the tops of isolated trees and sometimes on rock outcrops or even on the ground on ridges overlooking valleys. One ferruginous hawk nest has been confirmed to be active 5.5 miles east of the EPP alignment (BLM 2013a). This location is topographically screened from the EPP alignment with hunting likely to occur in open sagebrush grasslands between the nest site and the EPP alignment.

The prairie falcon is a BLM sensitive species and protected under the MBTA. The falcon favors sagebrush steppe habitat in Nevada, nesting on cliff ledges or isolated trees if available, and a small mammal diet. Within proximity of the EPP alignment two nests have been confirmed as active within 0.6 mile and 2.3 miles (N. Burton 2013). The further location of the two nests from the EPP alignment (2.3 miles) is topographically screened from the EPP alignment by the Maggie Creek canyon and is likely subject to vehicular travel noise along State Route 766. The second and closer location (0.6 mile) is sited topographically similar to the EPP alignment as the alignment traverses up and over Schroeder Mountain.

In addition to raptors, greater sage-grouse are known to occur in the vicinity of the study area, but sage-grouse habitat has been removed from the biological study area by previous activities (BLM 2013a).

4.0 EPP THREAT ASSESSMENT

The following are project construction and operation activities that may pose mortality or injury threats to raptor and bird species in the study area.

4.1 During Construction

Construction activities for the EPP are expected to begin early summer and be completed over approximately 12 weeks. If weather or other factors result in an interruption in construction, activities would be stopped and would restart as soon as possible to minimize the overall duration of the construction period.

4.1.1 Employee, construction materials and equipment movement

Construction, site stabilization and seeding of the EPP would not require the construction of any new roads. Existing roads being used by current mining operation activities would be used to access the temporary construction ROW. As described above, approximately 197 acres of intact sagebrush habitat would be temporarily disturbed to clear a portion of the temporary ROW. Some passerine species use newly cleared areas for foraging. Additionally, should any mortality occur from wildlife-vehicle collisions, scavenging species (e.g. turkey vultures) may begin to forage along project roads.

Construction activities would also be a minor source of noise in addition to that which already occurs along existing roads associated with current mining activities.

4.2 Post-Construction

Once construction activities are complete, the pipeline and facilities would be remotely monitored and operated by PPC's qualified operations personnel on a real-time, 24/7 basis utilizing SCADA (Supervisory Control And Data Acquisition) technology at PPC's Rancho Cordova, California Gas Control Center. Pipeline personnel would be available at the Gas Control Center and locally to provide operational support for the pipeline, and to be available to respond to routine and emergency operating conditions as needed.

The EPP would require a minimum annual visual inspection of the pipeline route in its entirety. Each visual inspection would include the required annual leak detection, pipeline marker inspection, and cathodic protection inspection and testing. These inspections are non-invasive and cause no greater disturbance than driving or walking the pipeline corridor. PPC would use existing roads to facilitate required inspections. In addition, PPC would schedule inspections, if at all possible, to minimize or avoid activities during the raptor nesting seasons.

It is very unlikely that long term impacts would result from ongoing pipeline operations. Operations of the EPP would include a very low level of noise (<8 dB at 3 feet and zero dB at 9 feet from the thermoelectric generator) from equipment at the three surface above-ground stations, maintenance and safety inspections, and the physical presence of the three surface stations. The closest of any of the three stations to either of the two nests requiring monitoring, is approximately 3 miles (Figure 4). The above ground facilities would not provide suitable nesting habitat given their low profile and their close proximity to current human activity levels.

4.3 Potential Causes of Raptor and Bird Injury or Mortality

4.3.1 Collision with Vehicles and Equipment

The potential for raptor and bird species to collide with construction vehicles and equipment under the Proposed Action would be present when species are in flight during dawn and disk hours or adverse environmental conditions, such as rain, fog, strong winds, or other similar periods of low visibility. Raptor and bird species are susceptible to potential collisions with project vehicles along the existing access roads in the study area as well as the highways leading to the area.

Raptor and bird species may also subject to collision with vehicles and equipment when flying while distracted. Potential distractions could include foraging, territorial chases, escape from predators, nearby human activity, or other such action that results in aggressive and swift flight, or erratic and fear-driven flight. The potential for collisions with vehicles or equipment under the Proposed Action is considered to be low as these vehicles are low to the ground, travel at relatively slow speeds, and would not generally pose a threat to flying raptors and birds. Additionally, the current levels of human activity in immediate proximity to the EPP alignment would further reduce the potential for raptors and birds to be active in the temporary construction ROW during construction.

4.3.2 Horizontal Direction Drilling (HDD)

Specialized equipment would be used to drill a generally horizontal pilot hole beneath the surface of the ground from one side of the crossing to the other. The path of the small diameter pilot hole would be at a sufficient depth under the crossing area to support the entry and exit angles for the drilling of the pilot hole. Drilling fluid sumps consisting of water and bentonite clay would be used in a closed-loop system to lubricate the drill. Upon completion of the pilot hole, the hole would be reamed with a larger drill bit to a larger diameter sufficient to accommodate the external diameter of the pipeline. A specially prepared pipe string would be pulled back through the reamed hole from the bore exit side to complete the crossing. Once installed, the ends of the pipe string would be tied-in to the pipeline on either side of the crossing.

Any source of water in an otherwise arid environment has the potential to attract raptors and birds. However, it is not anticipated that these sumps would be a significant source of injury or mortality for these species. No toxic or hazardous materials would be used during HDD, thereby eliminating the potential for mortality. Additionally, these sumps would only be in use while HDD is being conducted. The noise produced by HDD and the presence of personnel in the area would likely deter any species from approaching the sumps.

4.4 Effects to Raptor and Bird Species

4.4.1 Effects from Project Construction

Direct impacts would occur to raptors and migratory birds since the project construction would remove approximately 197 acres of potential hunting/foraging habitat for these species. Most of this habitat consists of highly fragmented big sagebrush and varying levels of grass understory, both perennial and annual grass species. The project would not restrict bird migration

throughout the area; however, it may temporarily remove a small portion of the available western burrowing owl nesting and foraging habitat and raptor hunting habitat in the area.

Although most birds are highly mobile, construction clearing and grading activities may result in bird injury or death via damage to occupied burrows as they may hide in their burrows and not be able to flee in time. Disturbances to occupied burrows for western burrowing owl would be avoided by having a qualified monitoring biologist conduct a nesting bird survey pre-disturbance so that occupied burrows can be identified and an appropriate buffer established through coordination with the BLM wildlife biologist. Increased noise levels during construction may cause birds to avoid the area temporarily, possibly disrupting normal behavior patterns.

Increased noise levels have been shown to adversely affect golden eagles and prairie falcons during important life cycle events such as courting and nesting. Confirmed active nests for both are present within proximity to the study area. General reactions to noise and disturbance can include:

- Agitation behavior (displacement, avoidance, and defense);
- Increased vigilance at nest sites;
- Change in forage and feeding behavior; and
- Nest site abandonment.

Raptors confirmed to be nesting within proximity to the EPP study area have been subject to human induced noise due to mining activity that has occurred since 1965 in the North Operations Area and 1981 in the South Operations Area. Thus, although they may be initially aware of new or increased noise in proximity to confirmed active nest sites, it is not anticipated that project construction activity noise would affect these nest sites.

Pursuant to the USFWS Guidelines (USFWS 2008), Figure 5 presents a "line of sight analysis" for both active nest locations. For the golden eagle nest site, the EPP construction activities would be in line of sight of the nest, however, that line of sight is interrupted by current mining activity. For the prairie falcon nest, the EPP alignment is located on the same topographic feature and at a similar elevation as the nest site, although a portion of this line of sight is also interrupted by current mining activity. It is not anticipated that project construction activities would affect the golden eagle nest site given the distance and intervening mining activities, however it is unknown if there would be an effect on the prairie falcon nesting behavior.

In addition to performing migratory bird nesting surveys for western burrowing owl, if necessary, given the potential for impact to nesting success due to the increase in human presence and construction noise associated with construction of the EPP, the Proposed Action includes provisions for a qualified biologist to confirm activity of the golden eagle and prairie falcon nests. If either or both of these nest are confirmed active, when EPP construction begins at either end of the two raptor monitoring zones (Figure 5, Appendix 3), PPC's qualified biologist would start nesting behavior monitoring and continue monitoring until the qualified biologists determines that EPP construction activities are not resulting in abnormal nesting behavior, construction is completed within that monitoring zone, the raptor fledges young or the nest becomes inactive.

If abnormal nesting behavior is documented, the qualified biologist would determine the severity of the abnormal behavior and consult with the BLM wildlife biologist to determine the appropriate course of adaptive management to be applied to construction activities. The goal of the nest behavior monitoring is to assess if potential construction-related impacts (noise or human presence) may disrupt the nesting success of the subject raptor. For EPP construction occurring outside the nesting season, and outside of the two raptor monitoring zones (Figure 5, Appendix 3), nest behavior monitoring is not required.

4.4.2 Effects from Project Operations

Post-construction, the EPP would require annual visual inspection of the pipeline route in its entirety. These inspections are non-invasive and cause no greater disturbance than driving or walking the pipeline corridor. PPC would use existing roads to perform required inspections. In addition, PPC would schedule inspections, if at all possible, to minimize or avoid inspection activities during the raptor nesting seasons. Therefore, it is not anticipated that project operations would affect the nest sites.

5.0 RAPTOR AND BIRD PROTECTION MEASURES AND MODIFICATIONS

5.1 Collision

As presented previously, there may be low risk to raptors and birds to collide with construction vehicles and equipment. These vehicles would be low to the ground and are not likely to pose a risk of collision. Given their low stature, raptor and bird collisions, if any, would likely involve individuals flying low (landing or taking off). Construction personnel would be required to travel in accordance with the active mine site speed limit of ≤ 35 mph and would be instructed to exercise caution while driving or operating construction equipment so as to further minimize the likelihood of collision.

5.2 HDD Sumps

As mentioned previously, raptor and bird use of the HDD sumps is not anticipated to result in a measureable impact. However, all sumps would be designed with gently sloping side, and those sumps utilizing a plastic liner would be designed with escape ramps (e.g., a board), allowing any birds or other wildlife to be able to walk out of the sump.

5.3 General Raptor and Bird Protection Measures

These general protection measures would be in place throughout the life of the proposed project construction activities and would serve to reduce any potential impacts to raptor and bird species on a daily basis.

Habitat for western burrowing owl occurs west of SOAPA North-South Haul Road within 1 mile of the haul road. Therefore, there is potential for this species to occur within the EPP study area. Given that the EPP construction activities would begin in January and likely be completed prior to the LOP for this species, it is unlikely that that any burrowing owls would be impacted. If weather or other factors delay or interrupt the construction schedule and extend it into the burrowing owl LOP, PPC's qualified biologist would coordinate with the BLM wildlife biologist for requisite pre-disturbance surveys for western burrowing owl and appropriate active burrow

buffers to be protected with temporary construction fencing to avoid impact to potentially active burrows.

In addition to performing migratory bird nesting surveys for western burrowing owl, if necessary, given the potential for impact to nesting success due to the increase in human presence and construction noise associated with construction of the EPP, the Proposed Action includes provisions for a qualified biologist to confirm activity of the golden eagle and prairie falcon nests. If either or both of these nest are confirmed active, when EPP construction begins at either end of the two raptor monitoring zones (Figure 5, Appendix 3), PPC's qualified biologist would start nesting behavior monitoring and continue monitoring until the qualified biologists determines that EPP construction activities are not resulting in abnormal nesting behavior, construction is completed within that monitoring zone, the raptor fledges young or the nest becomes inactive.

If abnormal nesting behavior is documented, the qualified biologist would determine the severity of the abnormal behavior and consult with the BLM wildlife biologist to determine the appropriate course of adaptive management to be applied to construction activities. The goal of the nest behavior monitoring is to assess if potential construction-related impacts (noise or human presence) may disrupt the nesting success of the subject raptor. For EPP construction occurring outside the nesting season, and outside of the two raptor monitoring zones (Figure 5, Appendix 3), nest behavior monitoring is not required.

6.0 IMPLEMENTATION AND ADAPTIVE MANAGEMENT ACTIONS

6.1 PPC Policy

PPC would voluntarily adopt and implement the raptor and migratory bird protection measures as described in this CS to reduce the potential for disturbance, injury, and mortality.

6.2 Avoidance and Minimization

PPC has agreed to several measures to avoid and minimize impacts to raptor and migratory bird species during project construction and operation that are discussed in Section 5 of this document. No toxic or hazardous fluids would be used during HDD, and sumps would be designed to allow birds to exit the area.

In order to minimize impacts to migratory birds during construction activities, PPC would strive to avoid land-clearing activities such as vegetation removal during the bird breeding season (March 31 to July 31). These dates may be modified by BLM based on specific site and weather conditions. If land-clearing activities take place during the bird breeding season, a qualified biologist would conduct preconstruction surveys in the affected area to identify nests and breeding birds.

During operation of the EPP, inspection vehicles would travel on existing roads to minimize impacts to the undisturbed and recovering habitat in the study area, which would minimize habitat impacts to bird species during inspection activities.

6.3 Assessment and Implementation Approach

Assessment and implementation of this CS involves two approaches described further below: Preventative and Reactive. The Preventative approach would be utilized on a day-to-day basis during construction of the EPP, while the Reactive approach would only be utilized in the unlikely event that an incident occurs.

6.3.1 Preventative Approach

Preventative measures would include all of the Construction Measures/Design Features described in this document which have been included as a part of the Proposed Action in the EA (Section 2.1.4) to avoid or minimize potential impacts. These measures include surveys for migratory bird nests and confirmation of active golden eagle and prairie falcon nests. Confirmed active nests would be monitored during construction within the monitoring zones depicted on Figure 5. Preventative measures attempt to avert potential for raptor and migratory bird impacts before they occur.

6.3.2 Reactive Approach

The reactive approach would include implementation of adaptive management actions in the unlikely event injury or mortality has occurred. If incidents occur, PPC would respond appropriately through documentation using the Reporting System (Section 7.0). These reports would be provided to the USFWS, NDOW, and BLM. The reported incident would be assessed by the three agencies in collaboration with PPC to determine whether the incident justifies implementation of adaptive management actions. This determination would include several factors, including the raptor or species involved, whether that species is listed as threatened or endangered, the rarity of the species, the effects on the population level of that species, and consideration of previous mortality resulting to that species in the study area, or as a result of interaction with the EPP. Adaptive management actions would be developed based on many of these same factors. The development of specific adaptive management actions would occur collaboratively among the USFWS, NDOW, BLM, and PPC, and would be based on scientific data, effective actions implemented at similar projects, new technology developed during the life of the project, and other similar or related information. The success of the techniques shall be determined collaboratively as well.

Not all incidents would warrant implementation of adaptive management techniques, but the unlikely injury or mortality of a golden eagle or prairie falcon, or several western burrowing owl would likely warrant adaptive management measures be implemented.

6.4 Permit Compliance

At this time, it is not anticipated that federal or state permits regarding raptor or migratory bird species are necessary for the EPP. Should circumstances make it necessary to obtain federal and/or state permits, PPC would work with the federal and state resource agencies listed in Section 6.9 to determine which permits are necessary and to acquire relevant permit applications. Under no circumstances would PPC intentionally perform any activity requiring a permit without first obtaining the proper permit or authorization to do so.

6.5 Personnel Training

In order to effectively implement the CS, PPC would ensure that all construction and operational inspection personnel complete training on the issues and protocols outlined in the CS. This training would ensure that all appropriate personnel understand the CS and their responsibility with regard to raptor and migratory bird protection and regulatory compliance.

6.6 Raptor and Migratory Bird Enhancement Options

PPC would continue to protect natural resources and promote actions that benefit local and regional raptor and migratory bird populations. PPC would limit construction disturbance in the temporary construction ROW to that necessary for safe and efficient installation of the EPP. Vegetation outside of the temporary construction ROW corridor would be undisturbed and maintain nearby nesting, hunting and foraging habitat for raptor and migratory bird species. PPC would not construct new roads in association with construction or operations of the EPP.

6.7 Quality Control

During construction activities and future inspection activities for the EPP, PPC would periodically assess various parameters and protection measures as described in this CS to ensure that it is as efficient and effective as possible. Parameters that PPC would assess periodically include:

- Assessing incident reporting procedures to ensure that discoveries of bird injuries and mortalities are properly documented;
- Assessing response to bird injury or mortality to ensure that appropriate actions are taken in a timely manner;
- Assessing compliance with company procedures to ensure that personnel are consistently following company methods for raptor and migratory bird-safe construction, required nest monitoring during construction, injury or mortality reporting during construction and during required annual pipeline inspection.

Daily observations, internal operating procedures, and personnel input would be applied to assessments during the periodic reviews of the CS. Revisions and updates to the CS would be made in consultation with the USFWS, BLM, and NDOW. Revisions and updates to the CS would be addressed with personnel at the project site.

6.8 Key Resources

PPC would coordinate with the following key resources, as needed to assist in providing expertise in permitting, raptor and migratory bird populations and behavior, and bird-safe construction and design features:

- USFWS;
- NDOW;
- BLM;
- Nevada Natural Heritage Program;
- Great Basin Bird Observatory.

These resources would be utilized as necessary and would further ensure that PPC has a successful and effective CS. Resources other than those listed may also be consulted, including consultants, company specialists, and other natural gas and mining facilities with proven effective raptor and migratory bird protection programs.

7.0 RAPTOR AND MIGRATORY BIRD REPORTING SYSTEM

7.1 Purpose of the Raptor and Migratory Bird Reporting System

In order to assess the effectiveness of the CS and prioritize raptor and migratory bird protection needs, PPC would report all raptor nest behavior results, and any raptor and migratory bird injury or mortality in accordance with the methodology below. All appropriate PPC personnel, including construction subcontractors would be provided with instruction on implementing the methodology and properly reporting any monitoring, injury and mortality incidents. Reporting would be standard practice by PPC for the duration of the construction as well as during annual inspections of the EPP if such inspections occur during the nesting period for migratory birds..

7.2 Reporting System Elements

7.2.1 Detection During Construction

To improve the probability that raptors and birds that have suffered injury or death do not go undetected, PPC construction and operational inspection personnel would be directed to remain alert for raptors and birds within the study area and near the active construction areas. Detection of injured or deceased birds in the field would occur through incidental observations by PPC personnel in the field during construction and inspection activities.

7.2.2 Response and Documentation for Injury or Mortality During Construction

In the event that a raptor or migratory bird injury or mortality is detected, PPC personnel would record the circumstances and conditions associated with the injury or death to the extent observable. PPC personnel would be provided with a standardized Bird Incident Report Form for recording the necessary information when an incident is detected. An example form is provided in Appendix A. Information recorded would include: date, time of detection, location of detection, photograph of the bird (if possible), apparent cause of injury or mortality including "unknown", and if possible, the species of the bird. This information would be submitted to the PPC designated representative in the field for submittal to the BLM wildlife biologist.

7.2.3 Remedial Action During Construction

Based upon the information gathered and reported on Bird Incident Report Forms, PPC's Environmental Specialist in coordination with the BLM wildlife biologist would determine whether implementation of remedial protection measures is warranted and to be implemented by PPC. This determination would be dependent on the likely cause of the incident, frequency of incident occurrences, the species that suffered injury or mortality, the likely effectiveness of proposed remedial actions, and agency input and guidance.

Given the proposed period of construction and applicable Limited Operation Periods, construction activities would be allowed to continue while a determination of remedial measures to be applied by PPC was underway.

7.2.4 Reporting

Bird Incident Report Forms, if any, would be collected by PPC's Environmental Specialist and reported via email to the BLM wildlife biologist. On a weekly basis hard copy forms would be submitted to the BLM wildlife biologist.

Although this form would be for submittal to the BLM, copies would be maintained by PPC's Environmental Specialist should regulatory agencies request the data. PPC's Environmental Specialist would also complete the USFWS's online "Bird Fatality/Injury Report", an online database of voluntarily submitted incidents of bird mortalities and injuries. The intent of the database is to gain information that can be used to prevent future bird injury or mortality. Mortality of a golden eagle or prairie falcon would be immediately reported to the BLM.

7.2.5 Disposal Procedures for Injured, Deceased, and Nesting Birds

The USFWS issues permits to take, possess, or transport bald and golden eagles under the BGEPA. Considering that mortality of a golden eagle is unlikely to result from construction and operation of the EPP, a take permit under the BGEPA is not warranted at this time. Under the MBTA, it is unlawful to collect, salvage, or otherwise have in possession any raptor or raptor part, including feathers, without a state and federal permit

PPC construction and operational inspection personnel are strictly prohibited from handling or transporting an injured migratory bird or disposing of a migratory bird carcass. As a result, in the unlikely event that such injury or mortality is observed, PPC's qualified field biologist or Environmental Specialist would contact the BLM or NDOW immediately to report the incident and arrange for retrieval and receipt of the injured bird or carcass. In the unlikely event that eagle mortality occurs, PPC's Environmental Specialist would meet with the agencies subsequent to agency retrieval of the carcass to determine if further remedial measures should be implemented.

8.0 MONITORING GOLDEN EAGLE AND PRAIRIE FALCON NESTS

Monitoring the confirmed active golden eagle and prairie falcon nest (Figures 4 and 5) would most likely follow the survey methodology and protocols outlined in the USFWS Interim Golden Eagle Technical Guidance and Protocols (Pagel et al., 2010) for ground surveys or other methodology acceptable to USFWS, BLM, and/or NDOW. This survey protocol is intended to standardize procedures to monitor active nests within the potential direct and indirect impact areas of planned or ongoing projects where disturbance may cause take. Additionally, the protocols intend to minimize potential observer related disturbance to active nests by requiring that surveys are conducted by qualified biologists.

When EPP construction activities enter the nest monitoring zones depicted on Figure 5, PPC's qualified biologist would confirm nesting activity for each of the two nests. If confirmed active, the qualified biologist would start nesting behavior monitoring and continue monitoring until the qualified biologists determines that EPP construction activities are not resulting in abnormal nesting behavior, construction is completed within that monitoring zone, the raptor fledges young or the nest becomes inactive. If abnormal nesting behavior is documented, the qualified biologist would determine the severity of the abnormal behavior and consult with the BLM

wildlife biologist to determine the appropriate course of adaptive management to be applied to construction activities. The goal of the nest behavior monitoring is to assess if potential construction-related impacts (noise or human presence) may disrupt the nesting success of the subject raptor. For EPP construction occurring outside the nesting season, and outside of the two raptor monitoring zones (Figure 5, Appendix 3), nest behavior monitoring is not required.

Goals and Objectives of Monitoring:

- Record and report occupancy and productivity of the nests;
- Document nesting chronology;
- Evaluate whether and which EPP construction activities or other conditions may be affecting nesting behavior; and
- Evaluate if the nesting territory within the study area becomes abandoned.

The two nests that have been identified by the BLM biologist for monitoring are the golden eagle nest near the north portion of the EPP alignment and the prairie falcon nest on Schroeder Mountain (Figure 4). Observation points would be established to offer an unobstructed view of the nest locations and surrounding habitat without influencing nesting behavior. The use of cameras would be considered. All birds that are observed during each monitoring period would be documented, especially those of other raptor species, particularly if courtship, territorial, or similar behavior is noted.

Monitoring of raptor nesting behavior would be reported daily to the BLM during the monitoring period for each of the designated nests. In addition to submittal of daily monitoring reports, within 30 days following completion of EPP construction site stabilization and seeding activities a final report would be compiled and submitted to the BLM wildlife biologist for further distribution. The report would detail methodology, dates and times of active nest monitoring, species encountered, other raptor behavior observed, observed use of or behavior around EPP construction activities, nesting behavior (courtship, nest building, incubating, feeding, etc.), and any observed nestling and/or fledgling.

In the event that abnormal nesting behavior is detected during PPC's monitoring of the two designated nest sites, the BLM and PPC's wildlife biologists and PPC's Environmental Specialist would coordinate to determine the potential causal source of the abnormal behavior, and if and what adaptive management measures should be implemented.

In the event that new raptor or migratory bird nesting site is observed through monitoring or incidental observations within or in proximity to the study area, PPC personnel would note the circumstances and conditions associated with the nest site. The noted information would be used by the BLM wildlife biologist and PPC's Environmental Specialist to determine if the nest and its location would potentially be subject to risk of injury or mortality to the nesting birds, and if the nest should be added to the monitoring program.

9.0 ADAPTIVE MANAGEMENT

If adaptive management measures become necessary as set forth above, the BLM, USFWS and PPC would have the opportunity to contribute to developing site-specific adaptive management measures, should they be warranted.

Over the course of construction and operational inspections of the EPP, PPC's Environmental Specialist would review daily nest behavior monitoring data and incident reports, as appropriate. This information would be used to prioritize, in collaboration with the agencies, applicability of adaptive management actions as well as scheduling and methods for annual operational inspections. PPC understands that ensuring the protection of sensitive bird species would be a dynamic process that may require changes to construction and inspection methods to avoid impacts to raptors and migratory birds. Close coordination with the agencies would be important in managing and adapting this plan to future conditions.

10.0 LITERATURE CITED

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FIGURES

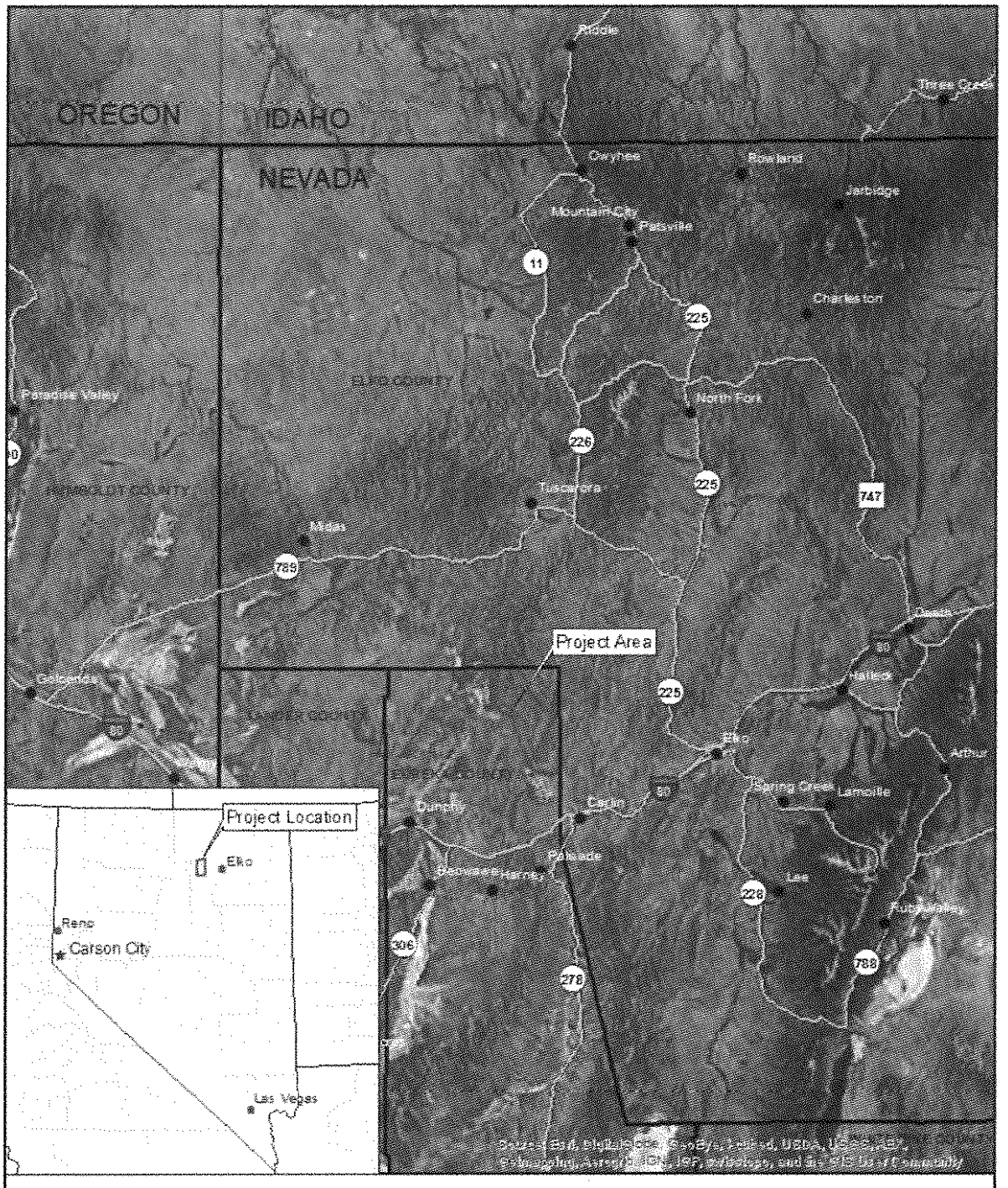


FIGURE 1: PROJECT LOCATION
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

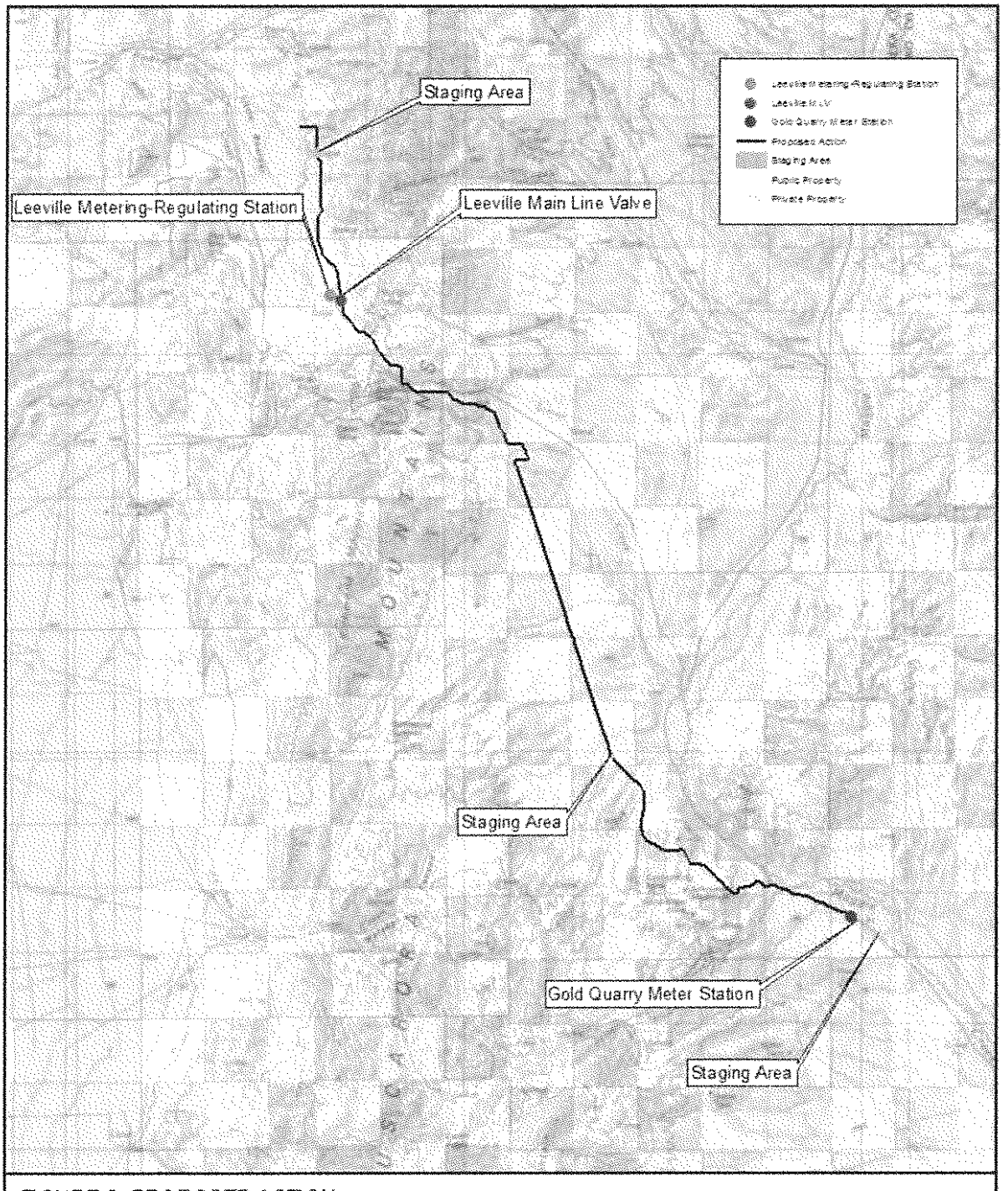


FIGURE 2: PROPOSED ACTION
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES:
OWNERSHIP: BLM
BACKGROUND:
COPYRIGHT © 2013
NATIONAL GEOGRAPHIC
SOCIETY

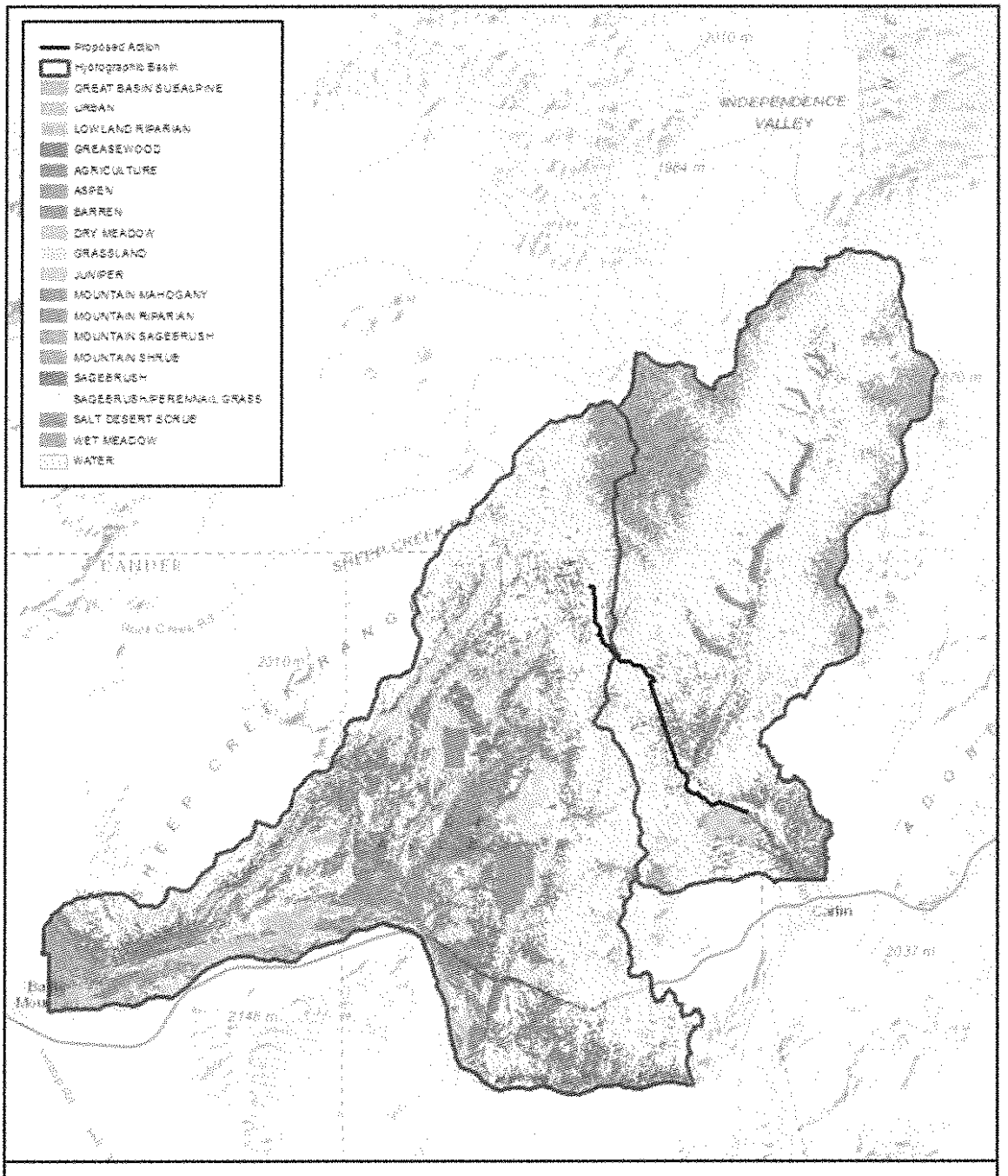


FIGURE 3: VEGETATION COMMUNITIES
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

BACKGROUND SOURCES ESRI, DELORME, NAVTEQ, TOMTOM, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, AND THE GIS USER COMMUNITY
VEGETATION: USGS (NV GAP 1991)
HYDROGRAPHIC BASINS: NDR

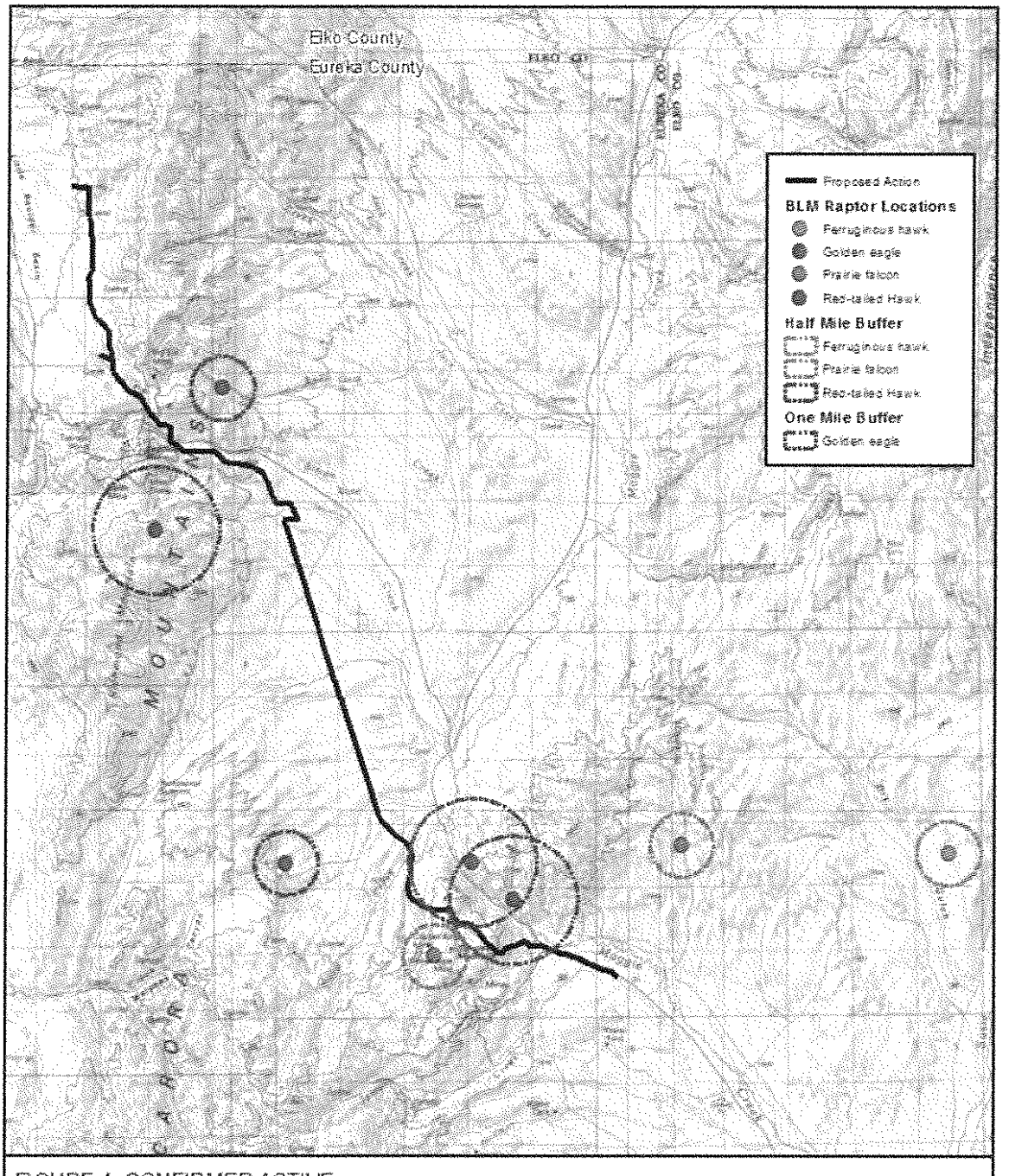


FIGURE 4: CONFIRMED ACTIVE MIGRATORY BIRD HABITAT AND RAPTOR NEST SITES
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
BACKGROUND COPYRIGHT© 2013
NATIONAL GEOGRAPHIC SOCIETY, I-CUBED
RAPTOR LOCATIONS: BLM

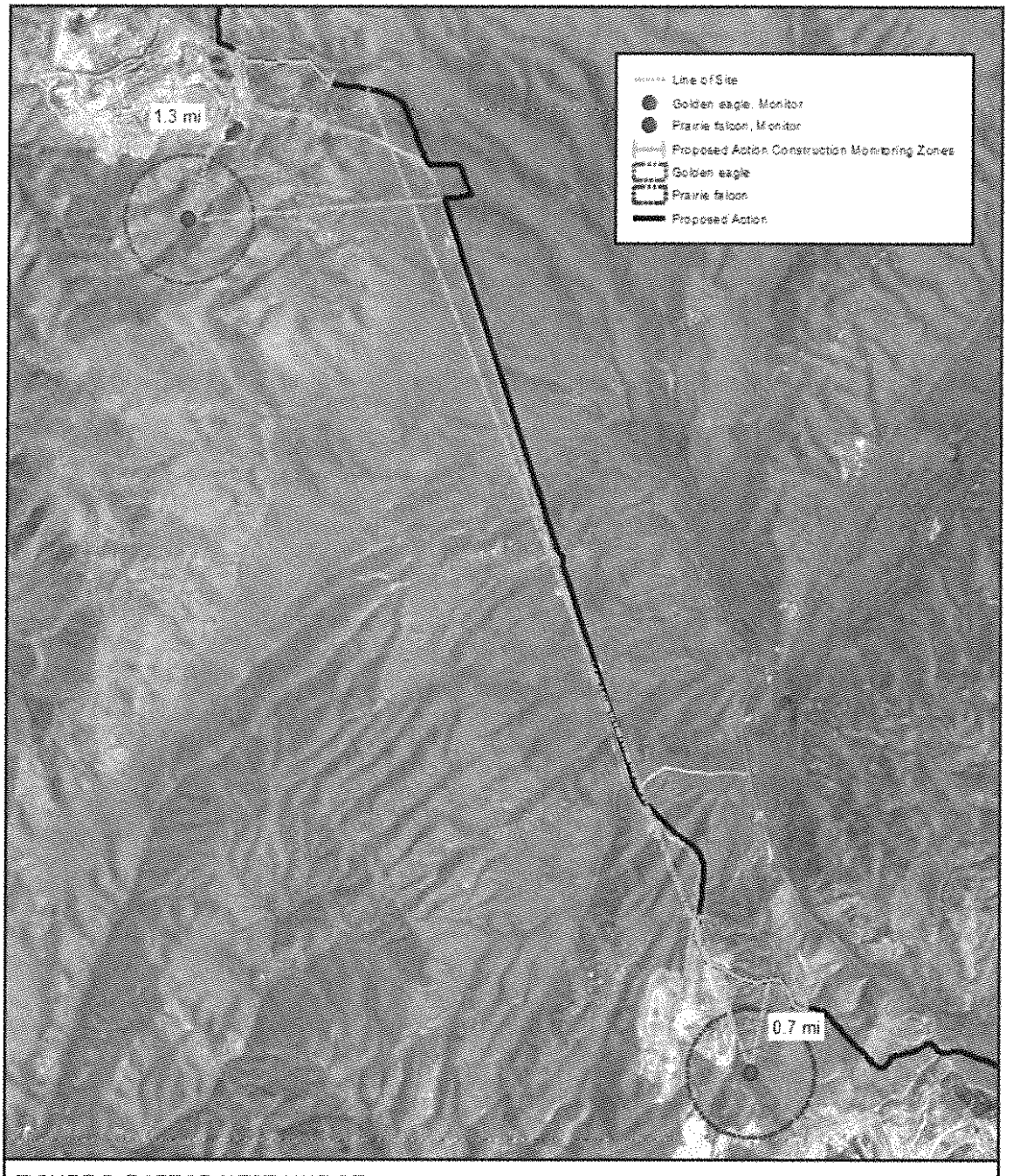


FIGURE 5: RAPTOR NEST LINE OF SITE ANALYSIS AND MONITORING EXTENT
EUREKA PIPELINE PROJECT
ENVIRONMENTAL ASSESSMENT
JANUARY, 2014

NOTES
BACKGROUND SOURCE: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER

APPENDIX A

NDOW Bird Incident Report Form

NEVADA DEPARTMENT OF WILDLIFE — HABITAT BUREAU

Industrial Artificial Pond Permit · Quarterly Wildlife Mortality Report Form

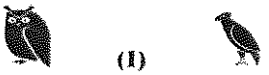
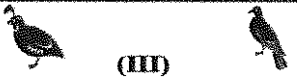
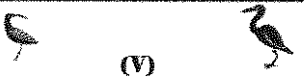
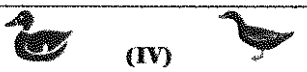
Project Title: _____ Permit #: _____

Address: _____ County: _____

City: _____ State: _____ Zip: _____

Mine ID #_____Report Year: _____ Quarter: Jan - Mar ☐ Apr - Jun ☐ Jul - Sep ☐ Oct - Dec ☐

Wildlife Mortality Identification

 **(I) Raptors**	 **(III) Upland Game**	 **(V) Shorebirds**
(II) Songbirds	 **(IV) Waterfowl**	**(VI) Mammals**

Please list number and species under each category (DO NOT leave blank)

Example:

RAPTOR (I)	0
SONGBIRD (II)	1 sparrow, 2 wren
UPLAND GAME (III)	1 quail
WATERFOWL (IV)	3 mallard, 1 bufflehead, 1 gadwall
SHOREBIRD (V)	0
MAMMAL (VI)	4 mice, 2 skunk, 1 ground squirrel
OTHER	2 lizards, 1 rattlesnake

Mortalities Associated <u>with</u> Permitted Pond Solutions or Structures

	Number and Species Identification *(DO NOT leave blank)*
RAPTOR (I)	_____
SONGBIRD (II)	_____
UPLAND GAME (III)	_____
WATERFOWL (IV)	_____
SHOREBIRD (V)	_____
MAMMAL (VI)	_____
OTHER	_____

(Report Mortalities <u>NOT</u> Associated with Permitted Pond Solutions or Structures on Back of Form)

REPORTER:_____ DATE:_____

ADDRESS:_____ CITY:_____

STATE:_____ ZIP:_____ PHONE:_____ E-MAIL:_____

Mortalities <u>Not</u> Associated with Permitted Pond Solutions or Structures

Number And Species Identification *(DO NOT leave blank)*

RAPTOR (I) .....
SONGBIRD (II) .....
UPLAND GAME (III) .....
WATERFOWL (IV) .....
SHOREBIRD (V) .....
MAMMAL (VI) .....
OTHER .....

(Report Mortalities Associated with Permitted Pond Solutions or Structures on Front of Form)

Remarks:

Please comment on any circumstances which you feel may be important, particularly when you feel one or more mortalities may have occurred under unusual conditions.

Please send form to the appropriate regional office listed below:

<u>WESTERN REGION</u>
NEVADA DEPARTMENT OF WILDLIFE
WESTERN REGION MINING BIOLOGIST
815 E. FOURTH STREET, WINNEMUCCA, NV 89445
TELEPHONE: (775) 623-6505
COUNTIES: CARSON CITY, CHURCHILL, DOUGLAS, HUMBOLDT, LYON, MINERAL, PERSHING, STOREY, WASHOE

<u>SOUTHERN REGION</u>
NEVADA DEPARTMENT OF WILDLIFE
SOUTHERN REGION MINING BIOLOGIST
4747 VEGAS DRIVE, LAS VEGAS NV 89108
TELEPHONE: (702) 486-5127 EXT. 3612
COUNTIES: CLARK, ESMERALDA, LINCOLN, NYE

<u>EASTERN REGION</u>
NEVADA DEPARTMENT OF WILDLIFE
EASTERN REGION MINING BIOLOGIST
60 YOUTH CENTER ROAD, ELKO, NV 89801
TELEPHONE: (775) 777-2368
COUNTIES: ELKO, EUREKA, LANDER, WHITE PINE

D R A F T (Pending Decision)
FINDING OF NO SIGNIFICANT IMPACT
FOR
Prospector Pipeline Company's Eureka Pipeline Project
DOI-BLM-NV-N020-2014-0002-EA
ROW Application NVN-092048

I have reviewed Environmental Assessment DOI-BLM-NV-N020-2014-0002-EA (February 2014). After consideration of the environmental effects as described in the EA, and incorporated herein, I have determined that the proposed action with the project design specifications (environmental protection measures) identified in the EA will not significantly affect the quality of the human environment and that preparation of an Environmental Impact Statement (EIS) is not required.

Prospector Pipeline Company (PPC) applied for a right-of-way for an approximately 18 mile long natural gas pipeline to supply natural gas from the North Elko Pipeline for delivery to the Newmont Leeville and Gold Quarry Mines. The proposed twelve-inch diameter pipeline and its expected impacts are fully described in the EA and maps contained therein accurately show the proposed location of the pipeline.

I have determined the proposed action is in conformance with the approved Elko Resource Management Plan and is consistent with the plans and policies of neighboring local, county, state, tribal and federal agencies and governments. This finding and conclusion is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts described in the EA.

Context: The project area is located in Eureka County of Nevada. The proposed pipeline would extend from the North Elko Pipeline Goldstrike Meter Station which is located on private property within the Barrick Goldstrike Mine to the Newmont Leeville and Gold Quarry Mines north of Carlin. The pipeline alignment would be established within existing disturbance areas to the furthest extent possible (primarily mining activity disturbance). The EA has maps and descriptions of the proposed location.

The proposed pipeline would carry natural gas from the North Elko Pipeline to the Leeville and Gold Quarry Mines, providing a reliable supply of natural gas and eliminating the need for current seasonal propane usage. The project would improve energy efficiency, reduce emissions, and enhance safety. The proposed pipeline would have an estimated 50 year operating life.

Intensity:

1) *Impacts that may be both beneficial and adverse.*
Because the pipeline would be located underground there are few, if any, impacts that would exist beyond the direct disturbance to vegetation and the time required for it to be reestablished along the pipeline route. One benefit of that disturbance would be that the pipeline would effectively act as a firebreak until new vegetation is established.

2) *The degree to which the proposed action affects public health or safety.*
The proposed action would not likely affect public health or safety. The EA describes the risks associated with underground natural gas pipeline and how those risks are managed and minimized by current design and construction requirements and through stringently enforced operating procedures. Through implementation of these measures, the public health and safety risks associated with projects like the proposed action have been reduced to minimal levels. During construction of the proposed pipeline an emergency response protocol as described in the EA will be followed.

3) *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*
Construction activities would be conducted with an awareness that vertebrate fossils, and cultural resources may be exposed during pipeline excavation activities. Prior to construction mobilization to the project area, a qualified specialist will provide the construction contractors with Resource Sensitivity Training to allow the contractors to be aware of the potential to inadvertently unearth and to identify potentially unique items in the unearthed trench soils.

During excavation for installation of the proposed pipeline, in areas that could disturb previously undisturbed Tertiary sediments, excavation activities would be conducted with a paleontological monitor present. The proposed pipeline ROW has been located through coordination with the BLM and project archaeologists based on the results of the project Class III cultural resources inventory such that potential direct impact to all known historic properties would be avoided during construction.

Limited Operating Periods (LOPs) were designed to protect mule deer, raptors, and other wildlife from human-caused disturbances by minimizing the type, spatial extent, and timing of project activities permitted. Construction activities would not be authorized to occur within certain spatial limits during those LOPs unless environmental protection measures and construction methods are applied that can measurably avoid impacts to these species.

4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*
None of the issues identified during the NEPA process and analyzed in the EA were deemed to be highly controversial.

5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*
The proposed pipeline's design, construction and operating and maintenance procedures are based upon standard and proven technology, materials and protocols that meet or exceed industry standards. The design, construction, operation and maintenance of the proposed pipeline would be reviewed, inspected and monitored by the Nevada Public Utilities Commission. There are no risks associated with the proposed pipeline that would be considered unique or unknown within the gas transmission pipeline industry.

6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*
The location of the proposed pipeline is in conformance with the Elko Resource Management Plan. The proposed pipeline would not create precedent given that the recently completed North Elko Pipeline already provides natural gas to an existing mine. The proposed pipeline would deliver natural gas from the North Elko Pipeline to two existing mines. Substituting natural gas for the propane and diesel fuels previously used to support mining operations is viewed as beneficial since the proposed pipeline would make it possible to use a cleaner burning fuel that is delivered to the site with less risk and eliminates the dust and air pollution associated with tanker truck delivery.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*
No significant cumulative impacts have been identified in the EA.

8) *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources.*
The pipeline was sited to avoid all sites that could be potentially eligible for National Register listing, and to minimize the potential for loss or destruction of any other types of scientific, cultural, or historical resources.

9) *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA of 1973.*
The project will not affect a listed species or its habitat. The pipeline study area may support incidental use by Greater sage-grouse, a "warranted but precluded" species. Due to the current extent and level of mining activity within the Carlin Trend which includes the proposed pipeline preferred alignment, the proposed pipeline study area supports fragmented PGH. Leks have been removed or abandoned and bordering undisturbed areas are not consistently utilized by Greater sage-grouse. Therefore, proposed pipeline construction activities would not likely adversely affect their incidental use of the area in summer and winter.

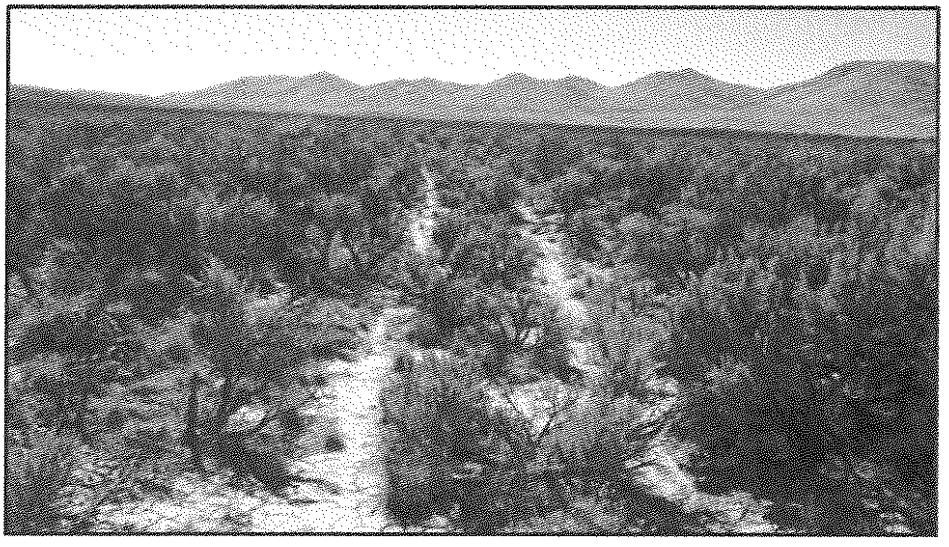
10) *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*
The proposed action will not violate or threaten to violate any Federal, State, or local law or requirement imposed for the protection of the environment.

3/3/2014

Richard E. Adams, Field Manager **Date**

A Class III Archaeological Inventory Conducted on Behalf of the Eureka Pipeline Project, Eureka County, Nevada.

LOCATION-SPECIFIC INFORMATION HAS BEEN REMOVED FROM THIS REPORT



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Bureau of Land Management Report CRR 01-3030

January, 2014

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1.0 Administrative Summary

The Tuscarora Field Office (Elko District) of the Bureau of Land Management (BLM) received an application in 2013 for a grant of right-of-way on public land to accommodate a proposed natural gas pipeline. Prospector Pipeline Company (PPC) proposes to construct and operate an approximately 17 mile underground natural gas pipeline, to supply natural gas from the recently completed North Elko Pipeline to the Gold Quarry and Leeville mines, both Newmont Mining Corporation operations. The pipeline, referred to as the Eureka Pipeline Project (EPP), will be located on BLM and private lands in Eureka County, Nevada. Elements of the EPP will include the pipeline itself, three above-ground stations (Goldstrike Meter Station, Leeville Main Line Valve, and Gold Quarry Meter Station), and four temporary storage areas. Access will be via existing roads or along the temporary right-of-way.

The pipeline will require a permanent right-of-way 30 feet in width (15 feet either side of the pipeline centerline). The temporary right-of-way during construction will be 100 feet in width (50 feet either side of the centerline), except in steep areas where the temporary right-of-way will be 125 feet in width. Ongoing maintenance of the pipeline on public lands will be performed within the 30-foot permanent right-of-way. Overall, the temporary right-of-way encompasses about 258 acres.

An Area of Potential Effect (APE) has been defined that includes all project elements. For purposes of this archaeological investigation, the APE extends 150 feet to either side of the proposed project centerline. This APE is sufficiently wide to include the permanent and temporary construction rights-of-way, and a substantial buffer. The APE is also sufficiently inclusive that all above-ground facilities and storage areas are addressed. Archival research indicated that 92.7 percent of the APE had been examined previously.

A primary objective of the archaeological inventory was the identification of an alignment that had a minimal impact on significant cultural resources. If during field work it was felt that the proposed route passed through a potentially National Register eligible site, efforts were to be made to re-route the alignment so as to avoid impacts. No such re-routes were required. Zeier & Associates, LLC conducted a Class III inventory which resulted in the examination of 49.4 acres, all on private land. No BLM administered lands were examined as a result of this inventory.

Seventeen previously recorded sites are present within the APE. All have been subject to previous consultations regarding National Register eligibility and a project effect determination. Two sites were determined to be National Register eligible and were treated in advance of a proposed undertaking. Many of the previously recorded sites were subsequently impacted as a result of authorized actions. On examination of existing case file data, BLM determined that existing eligibility determinations and treatment levels are adequate, and that there was no need to revisit previously recorded sites within the APE.

A previously recorded site located outside the archival study area should by logical extension cross the APE. This is the Victory Highway (CrNV-12-9948 - 26EU4649). We were able to locate the historic road alignment within the APE. It is recommended that recorded segments of the old highway contribute to the National Register eligibility of that resource. It is recommended that the proposed pipeline be constructed within existing disturbance, thereby reducing the potential for any

additional impact to the Victory Highway. If these recommendations are adopted, then the proposed EPP will not have an effect on this specific National Register eligible property.

Three isolated artifacts and one archaeological site were identified as a result of the present inventory effort. Appendix E of the Protocol Agreement between the BLM and the Nevada State Historic Preservation Office (SHPO) states that isolated artifacts are not eligible for listing on the National Register of Historic Places. As a result, EPP-related impacts to these isolates need not be considered further. The site is a lithic scatter consisting of 100-150 flakes with a maximum density of five flakes per square meter. It is recommended that this prehistoric period site is not National Register eligible. If these recommendations are adopted, then the proposed EPP will not have an effect on a newly recorded National Register eligible property.

Table 1. A Summary of Previously Recorded Sites in the APE

EXCLUDED

Table 2. A Summary of Recorded Sites in the APE

EXCLUDED

2.0 Project Description

The proposed project is a linear, 17±-mile underground natural gas pipeline, located in Eureka County, Nevada (Figure 1), and is referred to as the Eureka Pipeline Project (EPP). The purpose of the proposed project is to supply natural gas to the Gold Quarry Mine and the Leeville Mine. The proposed pipeline will tie into the recently completed North Elko Pipeline (NEP) at the Barrick Goldstrike Mine. From there, it will extend south to the Gold Quarry and Leeville mines, both Newmont Mining Corporation operations. Once completed, the EPP will be remotely monitored and operated by qualified operations personnel on a real-time, 24/7 basis utilizing SCADA (Supervisory Control And Data Acquisition) technology at the applicant's Rancho Cordova, California, Gas Control Center.

The EPP is intended to supply low cost, clean burning natural gas to fuel equipment at the Gold Quarry Mine and the Leeville Mine. The Leeville Mine currently receives no natural gas service and relies on propane and diesel delivered by truck. The Gold Quarry Mine receives natural gas service for only a portion of the year and relies on propane and diesel delivered by truck the remainder of the year. The proposed project will provide public benefits due to increased energy efficiency, emissions reductions and economic advantages to the Newmont mining operations. With the availability of reliable natural gas supply, the Leeville Mine will likely convert its equipment from propane and petroleum based fuels to natural gas, using the most current combustion technology. The availability of natural gas is beneficial for a number of reasons, including an increase in overall energy efficiency through a more complete combustion of fuels, requiring less overall fuel to produce the same amount of energy; lower emissions levels than the petroleum based fuels currently in use; and cost savings to Newmont given current and projected future pricing for natural gas and propane.

The EPP will tie into the North Elko Pipeline in the southeast corner of the Little Boulder Basin at the Goldstrike Mine property. From there it extends east and then south across foothills along the west flank of the Tuscarora Mountains for a little over two miles. The line then turns southeast, extending along the north side of Rodeo Creek to the proposed Leeville Main Line Valve location. The line continues to the crest of the Tuscarora Mountains. From there, it crosses the upper most reaches of Simon Creek and SR 766, ending toward the edge of foothills that line the east flank of the Tuscarora Mountains. This southeast oriented stretch of the alignment is about 3.5 miles in length. At that point, the alignment turns south-southeast and runs adjacent to an existing haul road for approximately 7.5 miles. Toward the south end of this section the alignment crosses Soap Creek. Shortly after that crossing, the alignment turns east-southeast and crosses over Schroeder Mountain. At the southeast edge of this mountain block, the alignment extends along the edge of SR 766 to its termination. Along this last stretch, the alignment crosses James Creek just upstream of where it flows into Maggie Creek.

2.1 Project Elements

The proposed EPP consists of a limited number of project elements (Figure 2). Each will be described separately.

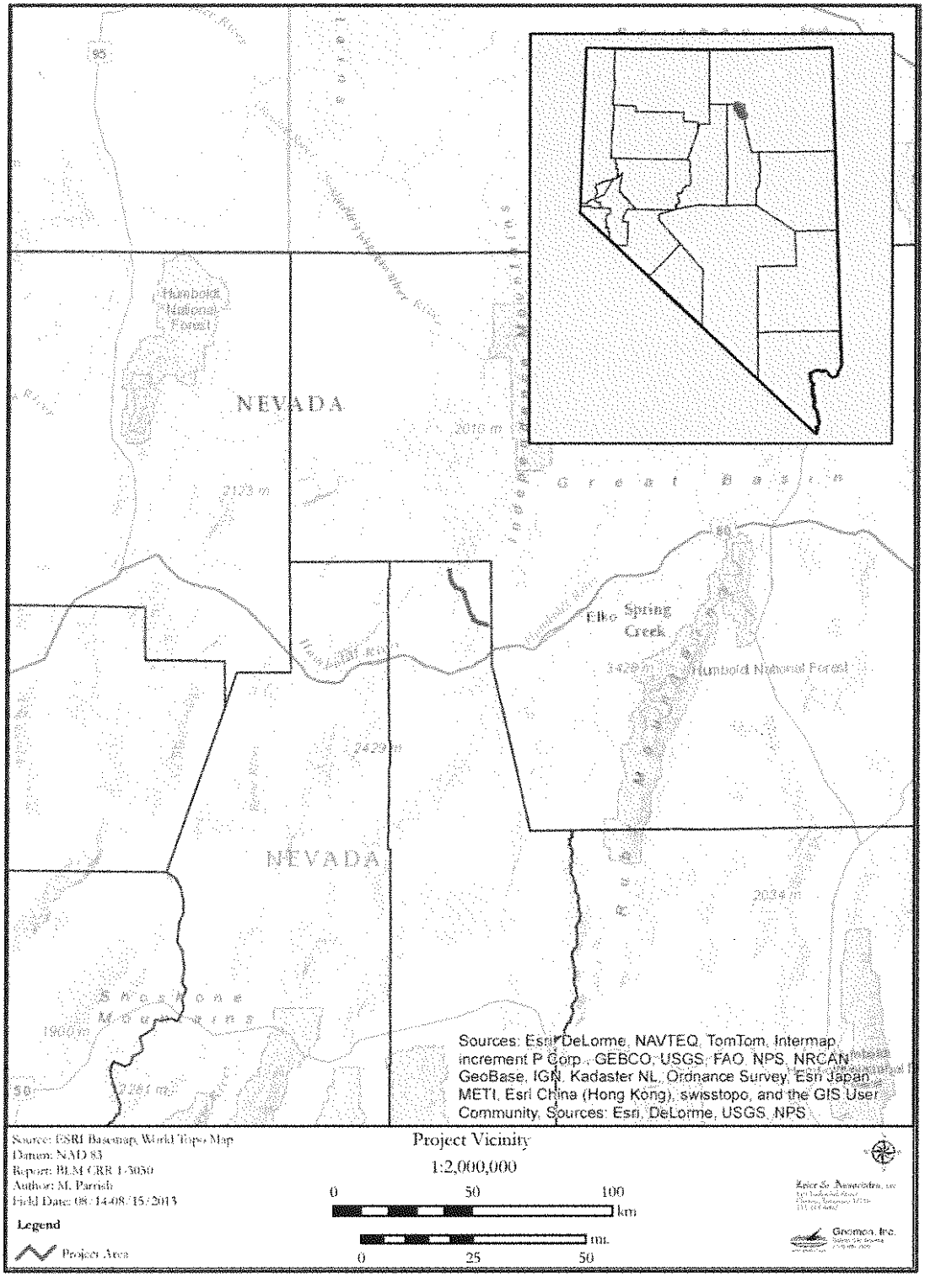

Figure 1. Project Vicinity

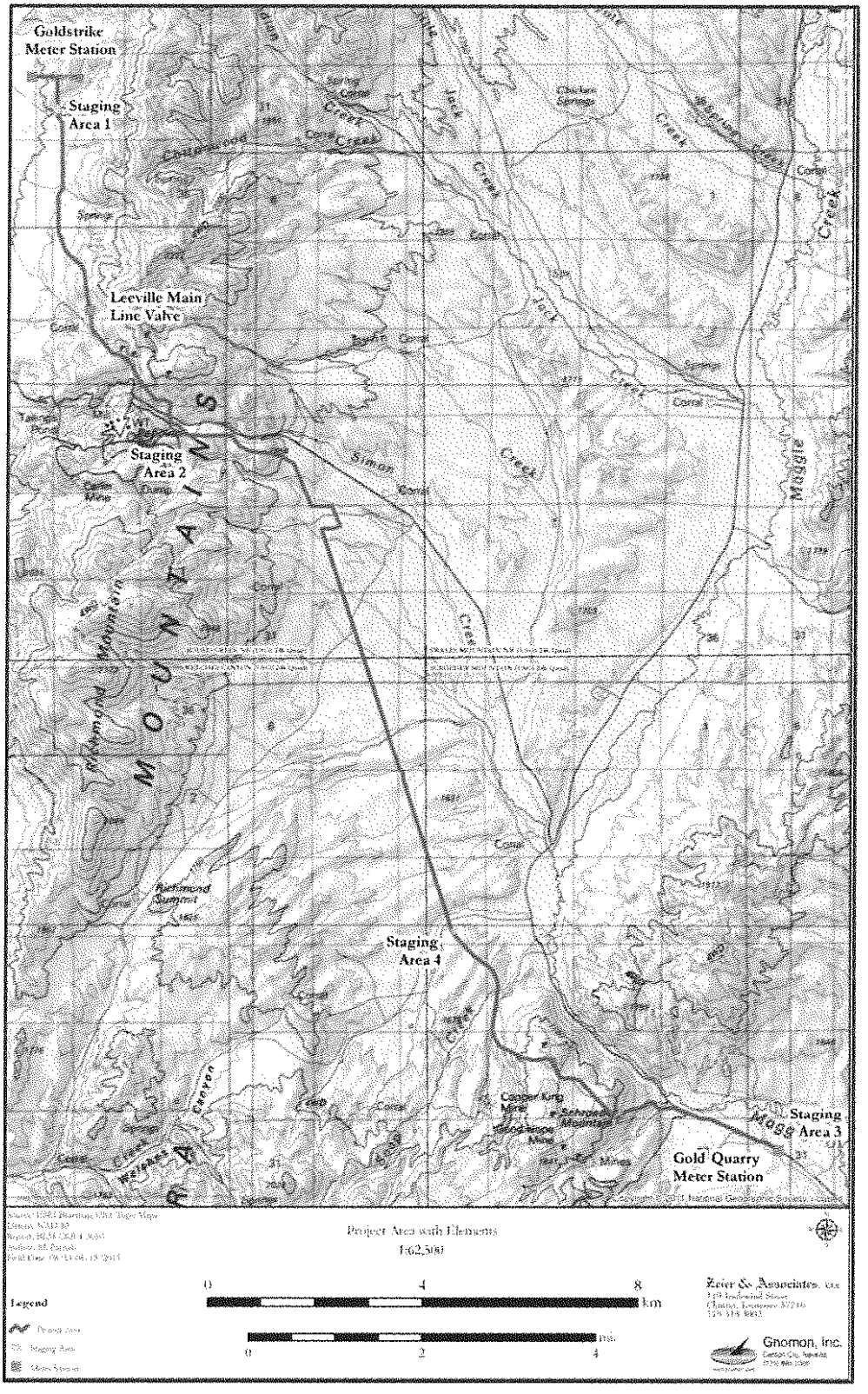

Figure 2. Project Location and Elements

2.1.1 The Pipeline

The EPP will be designed, constructed, operated, and maintained in accordance with U.S. Department of Transportation (DOT) regulations specified in 49 CFR 191, 192, and 199 "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" adopted by the Public Utilities Commission of Nevada (PUCN) pursuant to Nevada Administrative Code 704.460, and administered by the PUCN. The pipeline will consist of approximately 17± miles of welded steel, externally coated, high-pressure line pipe, buried to a depth to provide a minimum of 36-inches of cover from the top of the pipe to grade. The diameter of the pipeline will be 12 inches. To protect against external corrosion, the pipeline will be equipped with cathodic protection equipment consisting of buried anodes, test stations, and one or more DC current rectifiers (to be sited at facilities where a power source is available). The pipeline will be adequately identified with surface pipeline markers to facilitate its location post-construction.

Construction equipment will include conventional pipeline track-based trenchers and excavators, rubber tired backhoes, side-boom tractors, soil conditioning machines, welding trucks, pickup trucks, and flatbed tractor-trailers. Construction will consist of open trenching, embedding the pipe in conditioned native material and backfilling the trenches. Due to the relatively small pipe diameter, excess soil is anticipated to be minimal and will be distributed within the permanent right-of-way area. Disturbed areas will be re-vegetated with a seed mix approved by the BLM on public lands or as prescribed by the private landowner(s) on their property.

Pipeline installation resembles a moving assembly line with sections of the pipeline being completed in stages. First, the width of temporary right-of-way for the pipeline will be cleared and bladed smooth to provide a safe working surface for the installation crew. After blading is completed, 40-foot, externally-coated lengths of pipe are laid out end-to-end along the route within the permitted temporary right-of-way, a process referred to as "stringing" the pipe. The 40-foot long pipe sections are then welded together to form longer continuous lines that are then prepared for underground installation. Some sections of the pipe are bent using specialized equipment to fit the contour of the pipeline's path. Once these continuous lines of pipe are readied, commercial trenching and excavating equipment excavate alongside the staged pipe. These trenches are typically four to six feet deep. In certain areas (road crossings and where water features are present) the pipe may be buried deeper to provide additional protection. Road crossings may be cased (the carrier pipe placed within a larger diameter protective pipe) or constructed of slightly thicker pipe. Thicker walled, heavily coated pipe is likely to be used where water features are present. Once the pipe has been welded, bent, coated, and inspected it is lowered into the excavated trench. Side-booms are used to lift the pipe and lower it into the trench. The trench is then filled, ensuring that the pipe and its coating retain their integrity.

The EPP will cross several natural drainages. Construction methods applied at these crossings will depend on a combination of factors, including soil characteristics and the presence of flowing water. Where creeks and drainages are dry, the open-cut method will be employed. Conventional trenching and excavation equipment is used to excavate through the crossing area. Once the trench is established, the pre-bent, fabricated pipe segment is installed. Where flowing water is present and soil conditions warrant, construction crews will install bridging within the temporary construction easement to allow for the passage of construction equipment. Horizontal Directional Drilling (HDD) or dry-ditching will be applied, as field conditions permit. With the

HDD Method, specialized equipment would be used to drill a generally horizontal pilot hole beneath the surface of the ground from one side of the crossing to the other. The pilot hole will then be reamed to a larger diameter, one sufficient to accommodate the external diameter of the pipeline. A specially prepared pipe string will be pulled through the reamed hole from the bore exit side to complete the crossing. Once installed, ends of the pipe string are tied into the pipeline on either side of the crossing. Dry-ditching in flowing water involves the diversion of the water flow around the area to be crossed utilizing a system of flumes or pumps and hoses. Once the water diversion is be established, the crossing area can be trenched as with the open-cut method. After the pipe is installed in the trench and backfilled, the diversion is removed and water flow restored in the original channel.

2.1.2 Above Ground Facilities

Above ground facilities will be required to support delivery of natural gas to Newmont's Leeville and Gold Quarry Mines, and providing safety and maintenance isolation along the pipeline alignment. It is anticipated that all above ground facilities will be secured within compounds surrounded by 8-foot high chain link fencing.

2.1.2.1 Goldstrike Meter Station

The Goldstrike Meter Station is an existing facility located on private property within the Goldstrike Mine. The EPP will "tap into" this meter station utilizing existing valves and piping. This will be the starting point for the EPP.

2.1.2.2 Leeville Main Line Valve

The Leeville Main Line Valve (MLV) station will be located within Newmont's Leeville Mine property on public land and will serve as an operational isolation valve on the EPP as well as provide a lateral connection through which to deliver gas to the Leeville Mine. This small footprint station will be approximately 450± square feet in size (15 feet wide by 30 feet long for a total of .010± acres). In its capacity as an isolation valve, equipment will be installed to remotely monitor the pressure of gas through the pipeline and enable the automatic, rapid shutdown and isolation of the upstream and downstream portions of the EPP in the unlikely event of an emergency. The isolation valve could also be activated during the course of normal maintenance activity. Solar panels and/or thermoelectric generation will be used as the power source at this location.

2.1.2.3 Possible Main Line Valve

To provide the EPP with additional operational isolation, it is possible that a main line valve may be installed at a suitable location somewhere between the Leeville MLV and the Gold Quarry Meter Station. This MLV would be located on private land. A decision on whether to include this additional MLV will be made during the design phase. If constructed, this MLV would be similar in size, design, and function as the Leeville MLV.

2.1.2.4 Gold Quarry Meter Station (Delivery Point)

The Gold Quarry Meter Station will be at the southern terminus of the EPP. The station will be located on private property within the Gold Quarry Mine boundary, and will require an approximate 10,000± square foot area (0.23± acres), measuring 100 feet by 100 feet. The facility will accommodate the station piping equipment, and appurtenances needed for the safe, efficient delivery of natural gas to the Gold Quarry Mine. Such equipment may include, but not necessarily be limited to, valves, meters, instruments, regulators, controls, computerized remote terminal units, master telemetry via either satellite or other commercial means, a device for the receiving of pipeline pigs, and any equipment for the cathodic protection of the pipeline from external corrosion. A small building will be installed to house some or all of the aforementioned equipment. Power for the equipment at this station will either be sourced from the Gold Quarry Mine's existing electrical infrastructure or generated onsite using natural gas through thermoelectric, thermoelectric/solar hybrid, or fuel cell technology.

2.1.3 Temporary Project Elements

Extensive stockpiling of pipe is not anticipated. Rather, four small, temporary equipment storage areas were identified for possible establishment along the EPP corridor (see Figure 2). They are as follows:

- Storage Area 1 - T36N, R50E, Section 26 (projected); near the Goldstrike Meter Station; 3.7 acres.
- Storage Area 2 – T35N, R50E, Section 13; near the Leeville Mine; 5.3 acres.
- Storage Area 3 - T34N, R52E, Section 31; near the Gold Quarry Meter Station; 13.2 acres.
- Storage Area 4 - T34 N, R51E, Section 16; near Schroeder Mountain; 1.34 acres.

Access to the EPP corridor will be along existing state and county roads. The most direct access from the south is via SR 766, which extends from Carlin to the Goldstrike Mine. For much of its length, the EPP corridor extends along or immediately adjacent to existing dirt roads. Wherever possible, these roads will be used during project construction. In places where the EPP corridor extends across country, access will be confined to the immediate construction right of way.

2.2 Land Status

The EPP will cross public land administered by the BLM, as well as private property. As described above, permanent easements will be required at two (possibly three) locations to accommodate above ground facilities. To the extent possible, the pipeline corridor has been located adjacent to existing disturbed areas including roadways. Extending from the north to the south, the project corridor extends through the following townships:

- T36N R50E, Section 29 (NE4), Section 28 (W2), Section 33 (W2).
- T35N R50E, Section 2 (W2), Section 11 (NE4 of NW4, NE4, E2of SE4), Section 12 (SE4), and Section 13 (E2 of NW4, NE4).
- T35N R51E, Sections 19 (NW4, S2 of NE4, E2 of SE4), Section 30 (NE4of NE4), Section 29 (W2 of NW4, SW4), and Section 32 (E2 of NW4, SW4 of NE4, W2 of SE4).

- T34N R51E, Section 5 (E2), Section 4 (SW4 of SW4), Section 9 (W2), Section 16 (E2 of NW4, SW4 of NE4, SE4), Section 21 (NE4), Section 22 (W2), Section 27 (N2), Section 26 (SW4 of NW4, S2), Section 25 (S2 of SW4, SW4 of SE4), Section 36 (N2).
- T34N R52E, Section 31 (NW4).

The EPP will be located on a combination of private lands and public lands administered by the BLM. The 17± mile pipeline will require a permanent right-of-way on public and private land of 30 feet in width (15 feet on each side of the pipeline centerline) for a total of 61± acres (Table 3). The pipeline will require a temporary right-of-way during construction of an additional 70 feet in width, for a width of 100 feet, totaling 206± acres. For safety and construction purposes, in areas where the slope is 20 percent or more the pipeline will require a temporary right-of-way of an additional 95 feet in width, which would be a total of 125 feet in width, totaling 258± acres (if the entire pipeline route were greater than 20 percent slope, which it is not). Ongoing maintenance of the pipeline will be performed within the 30-foot permanent right-of-way. Additional permanent right-of-way (or easements) totaling 0.54± acres will be required at two locations (possibly three) to accommodate above ground facilities (Leeville MLV 0.04± acres, Gold Quarry Meter Station ±0.46 acres, and third possible MLV 0.04± acres).

Table 3. Eureka Pipeline Proposed Project Summary Table

Type of Land	Miles	Permanent ROW for alignment (acres)	Permanent ROW for above ground facilities (acres)	100 foot Temporary ROW during construction (acres)	125 foot Temporary ROW during construction (acres) – areas >20% slope
BLM Land	7±	25	0.04	85±	106±
Private Land	10	36	0.5	121±	152±
Total	17± miles	61± acres	0.54± acres	206± acres	258± acres

Note: ± quantities are approximate and will be refined during the design phase.

Approximately 7± miles of the pipeline will cross public land (25± acres of required permanent right-of-way including 0.04± acres for an above ground facility; 85± acres of temporary right-of-way, or 106± acres in areas where the slope is 20 percent or greater). Approximately 10± miles of the pipeline will cross private land (36± acres of permanent right-of-way including 0.5± acres for above ground facilities; 121± acres of temporary ROW, or 152± acres in areas where the slope is 20 percent or greater). The tap at the existing Goldstrike Meter Station will utilize existing facilities and the parallel line for the EPP will be located in approximately 200± feet of existing private right-of-way (previously reviewed as a part of the NEPP). To minimize disturbance, the pipeline has been located within Barrick's and Newmont's Plan of Operation boundaries, in areas that appear to have been previously disturbed by mining activity. A right-of-way will be required from the BLM for where the proposed project crosses public lands. Right-of-way agreements will be secured with Newmont for those portions of the proposed project crossing private land.

A majority of project-related impacts are considered temporary. They are impacts related to use of access routes and ground disturbance as the pipeline route is excavated and the pipeline installed. Reclamation will occur immediately after completion of the pipeline. Long term impacts relate primarily to ongoing operation of the pipeline. They include a low level of noise from

equipment at the three surface stations, maintenance and safety inspections, and the physical presence of the surface stations.

2.3 Area of Potential Effect

An Area of Potential Effect (APE) has been defined that includes all project elements. For purposes of this archaeological investigation, the APE extends 150 feet to either side of the proposed EPP centerline. This APE is sufficiently wide to include the permanent and temporary construction rights of way, and a substantial buffer (Figure 3).

Two new above ground facilities are proposed: the Leeville Main Line Valve, and the Gold Quarry Meter Station. The third associated above ground facility - the Goldstrike Meter Station - is currently existing. All three facilities are located within the temporary right-of-way and, as a result, are within the APE as originally defined. Four storage areas are proposed, all located near but outside of the temporary right-of-way. Those four areas are considered a part of the APE. Acreage data for the APE, broken down by project element, are provided in Table 4.

Table 4. APE Acreage, by Land Status, EPP

	BLM	Private	Total
Alignment	264.8	386.3	651.1
Storage Area 1	-	3.7	3.7
Storage Area 2	-	5.3	5.3
Storage Area 3	-	13.2	13.2
Storage Area 4	1.3	-	1.3
Total	266.1	408.5	674.6

A vast majority of the APE has been examined as a result of previous inventories (625.2 acres, or 92.7 percent of the total APE). Acreages inventoried as a part of the present effort, broken down by land status, are provided in Table 5.

Table 5. Inventoried Acreage, by Land Status, EPP

	BLM	Private	Total
Alignment	-	32.8	32.8
Storage Area 1	-	3.7	3.7
Storage Area 2	-	-	-
Storage Area 3	-	12.9	12.9
Storage Area 4	-	-	-
Total	-	49.4	49.4

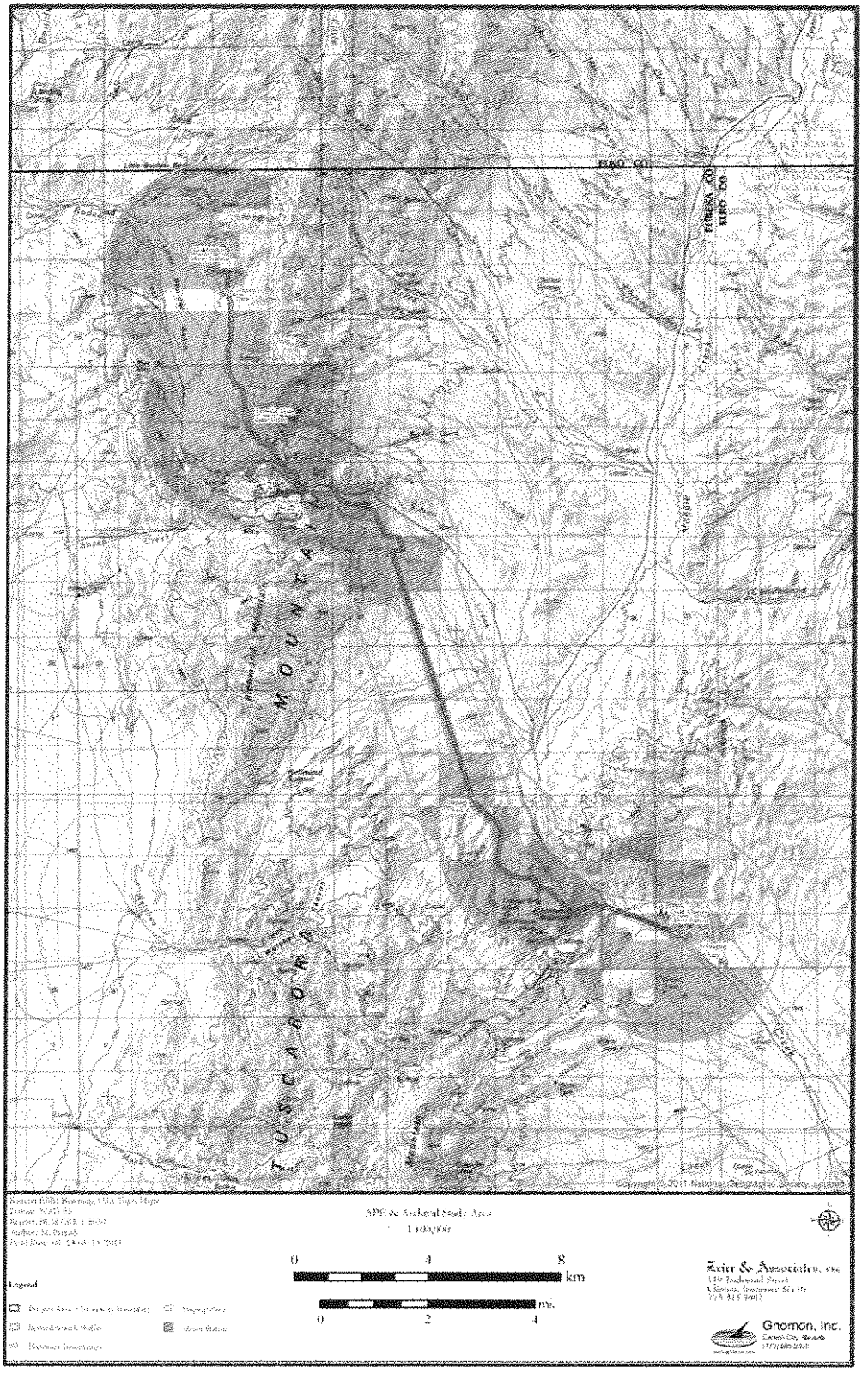

Figure 3. Archival Study Area and Area of Potential Effect

2.4 Field Personnel and Dates of Inspection

Project related cultural resource activities were conducted by Zeier & Associates, LLC, with the assistance of Gnomon, Inc. Shelly Tiley assisted the BLM in ethnographic data collection tasks associated with an earlier adjacent project and that information is reiterated here. Zeier & Associates received a project authorization to conduct archival research on June 24, 2013. Mike Drews of Gnomon conducted a NVCRIS database search in early July, 2013. Drews and Mary Parrish (Gnomon) conducted a detailed examination of BLM records in Elko on July 26 and 27, 2013. History related archival research tasks were carried out by Charles Zeier of Zeier & Associates during July, 2013.

Zeier & Associates received a project authorization to conduct fieldwork on July 29, 2013. That authorization allowed for a non-collection, Class III inventory of previously un-surveyed portions of the proposed APE. We conducted field work between August 15 and 18, 2013. Jeremy Hall (Gnomon) served as field supervisor during all phases of field work. Mary Parrish (Gnomon) served as a field crew member. Site form preparation tasks were carried out by Charles Zeier of Zeier & Associates, and Jeremy Hall and Mike Drews of Gnomon. Report preparation tasks were conducted largely by Charles Zeier with the assistance of Jeremy Hall.

3.0 Prehistoric and Historic Overview

3.1 Archival Research Results

3.1.1 Previous Archaeological Studies

An archival study area was defined that extended one mile out from the EPP centerline and two miles out from above-ground features. Information regarding previously conducted cultural resource studies was collected for the archival study area from NVCRIS and files maintained by the BLM.

Research indicates that 90 studies (Attachment One) have been carried out in part or in whole within the archival study area. Of the 35,797-acre archival study area, some 20,990 acres (58.6 percent) have been examined previously. Of the previous reports, 71 document inventories, 1 is an inventory and testing report, 6 are eligibility assessments, 4 are data recovery plans, 3 are reports of actual data recovery efforts, 3 are Class I overviews or Class II reconnaissance reports, 1 is a monitoring report, and 1 is a paleontological report. The reports vary in age from 1976 to 2011. A distribution of report age by decade is provided in Table 6. As is evident, most work in the archival study area was carried out in the 1980s and 1990s when mining operations in the study area were undergoing expansion.

Table 6. Inventory Report Age, By Decade.

	Archival Study Area		Inventory Corridor	
Period	Number	Percentage	Number	Percentage
1974 - 1983	10	11.1		
1984 - 1993	42	46.6	16	55.2
1994 - 2003	24	26.7	9	31.0
2004 - 2013	14	15.6	4	13.8
	90	100.0	29	100.0

In addition, archival data were also reviewed for the immediate APE (150 feet either side of the proposed pipeline centerline). Of the 674.6-acre APE, some 625.2 acres (92.7 percent) have been examined previously as part of 29 studies (shaded in gray in Attachment 1). Only 49.4 acres of the APE do not appear to have been inventoried previously. Inventories represented in the potential inventory corridor show a roughly similar distribution by age as those in the archival study area. Of the three oldest reports, one is associated with an inventory of the Carlin Mine and another is an inventory by NDOT of a highway corridor. Of the reports dating between 1984 and 1993, nine date to the 1980s and the other nine date to the 1990s.

Examination of inventory reports intercepted by the APE reveals that the majority reflect work conducted to current Class III inventory standards. Apparent exceptions are listed below, but in each case appear to be supported by inventories conducted at a Class III standard.

- 1-1049 (Dailey 1987): The report did not clearly state what inventory standard was applied. This was a linear inventory performed in advance of constructing a power line and a buried water line. The area was subsequently inventoried at a Class III level as part of inventories 1-1651 (Newsome and Tipps 1997) and 1-1746 (Tipps and Newsome 1993).
- 1-1756 (Tipps 1994): This is a data recovery report. The area addressed was inventoried previously as part of 1-1725 (Newsome 1993), a Class III level inventory.
- 1-2530 (Schroedl 2006): This is a treatment planning document. The area addressed was inventoried previously as part of 1-1126 (Johnson 1987), a Class III level inventory.
- 1-2809 (Adams 2011): This is a Class I overview or previous inventory efforts. The area addressed was inventoried previously.

Based on our examination of BLM file data, it appears that reports reflected in the APE have gone through formal BLM / SHPO consultation regarding site eligibility and project effect. In many cases, ground disturbance has occurred subsequently.

3.1.2 Previously Recorded Sites

A total of 245 archaeological sites has been recorded within the archival study area. Of these the vast majority are prehistoric in age (226 or 92.2 percent). Four sites (1.6 percent) are multi-component, containing both historic and prehistoric period materials. Only 12 (4.9 percent) historic period sites have been recorded previously within the archival study area. One site is noted as being proto-historic in age, and the remaining two sites are paleontological sites. The general lack of historic period sites is somewhat surprising, especially given the amount of ranching and mining related activities that have occurred throughout the region, but especially toward the south end of the archival study area. Of the recorded sites, 83 are on BLM administered lands (33.9 percent), while the remainder are on private land (162 or 66.1 percent). National Register eligibility recommendations were noted for most of the sites. Based on readily available data, 36 sites (14.7 percent) are listed as National Register eligible. Some 201 sites (82.0 percent) are recommended as not eligible for National Register listing. For the remaining 8 sites, eligibility information was not readily available.

Of the 230 prehistoric sites, the ubiquitous lithic scatter is the most common type (155 or 67.4 percent. The next most common type is the isolated artifact, typically an isolated flake, projectile point, or other lithic tool (63 or 27.4 percent). Of the lithic scatters, several contain only a few items and in these cases the differentiation between a "lithic scatter" and an isolated flake is not pronounced. Lithic scatters with ground stone (n=10) and lithic scatters with associated lithic sources (n=3) are present but clearly not abundant. Some 35 prehistoric sites (or components) are noted as National Register eligible. Of these, 30 are lithic scatters, 3 are lithic scatters with ground stone, and 2 are lithic scatters associated with a lithic source.

Of the historic period sites, four can be related directly to mining. The remainder reflect isolated artifacts or small debris scatters. Only three of the historic period sites are National Register eligible. It is noted that a segment of the Victory Highway has been recorded outside of but near the archival study area (site number 12-9948). Quite likely, this early alignment of the Victory Highway passes through the archival study area and potentially the inventory corridor.

Seventeen previously recorded sites are present within the potential inventory corridor. Of those, 15 are prehistoric in age, 1 is historic in age, and 1 contains both a prehistoric and a historic component. Of these sites, two were determined to be National Register eligible. Both of those sites have undergone treatment.

- Site 12-11428, an extensive prehistoric period lithic scatter, was documented during an inventory (Newsome 1993 [1-1725]) conducted in advance of proposed haul road construction. A data recovery plan was prepared, approved by BLM and SHPO, and implemented (Tipps 1994 [1-1756]). Treatment activities included controlled surface collection and excavations. Following treatment, the haul road was constructed.
- Site 12-12466 is a multi-component site consisting of a prehistoric period lithic scatter and a historic period prospect area. The site was recorded as part of an inventory (Newsome 1996 [1-2026]) conducted in advance of a proposed mine plan of operation amendment. Based on consultation between BLM and SHPO, the historic component was determined to be National Register eligible based on criteria A and D. The prehistoric component was determined not to be National Register eligible. A data recovery plan was prepared (Schroedl 2006 [1-2530]), approved by BLM and SHPO, and implemented (Schroedl 2007 [1-2608]). Treatment activities included development of a historic context for the Lynn Mining District and limited back hoe testing of site features.

The remaining 15 sites were determined not to be National Register eligible. The eligibility determinations are supported by agency correspondence demonstrating consultation with SHPO.

In summary, examination of NVCRIS and BLM records indicates that most of the proposed project corridor has been inventoried previously at a Class III standard. Only two areas along the corridor have not been examined. Previous inventory work reflected in the proposed corridor was conducted more than 10 years ago. While a few early inventories are represented, those areas have either been re-inventoried as part of later work, or have since been developed (for example, areas addressed by early inventories in the Carlin Mine area have since been eradicated through subsequent mine development). Most inventory in the proposed corridor reflects work dating to the 1990s and the early 2000s. Much of that work was performed by P-III in anticipation of various mine plans or specific developments. Many of those planned actions were subsequently implemented. As a result, a fair amount of the proposed project corridor has undergone some level of previous disturbance.

Based on its review of archival research results, the BLM determined that the earlier inventory reports are adequate and that EPP related inventory work could be limited to previously unexamined areas. The BLM also determined that existing eligibility determinations and treatment levels are adequate, and that there was no need to revisit or update previously recorded sites along the proposed corridor.

3.1.3 BLM Land Use Records

BLM inventory standards require that specific sources of information be examined. The following sections provide results of our review of those sources.

3.1.3.1 GLO Township Maps

General Land Office township maps are available for the EPP corridor (http://www.nv.blm.gov/landrecords/). Depending on the township, they date from as early as 1871 through the 1990s (Table 7). None of the dated sets extend over the entire project corridor. In some cases, only portions of a township were mapped.

Table 7. GLO Map Availability by Township

Township	GLO Map Dates
T36N R50E	1873, 1885, 1987 (all partial)
T35N R50E	1922 (partial)
T35N R51E	1871, 1922 (partial)
T34N R51E	1871, 1921 (partial). 1930 (partial), 1992
T34N R52E	1878, 1893, 1904 (partial), 1983 (partial)

Improvements noted on the available mapping in or near the EPP corridor are listed in Table 8. Entries are organized by township. An emphasis is placed on improvements located in or near the archival study area. It is noted that only major roads are noted in the table. Some maps, especially later ones, often show other what appear to be minor roads segments.

Table 8. Improvements Noted on GLO Maps.

Township	Year	Improvement
T34N R51E	1871	The Carlin and Bull Run Road is shown running along Maggie Creek (sections 1, 2, 10, 11, 15, 22, 23, 25, and 26)
T34N R51E	1871	The W. James House is shown in Section 36
T34N R51E	1871	Snow's House is shown in Section 10
T34N R51E	1921	The "Lincoln Highway" is shown in Section 26
T34N R51E	1921	Mining claims associated with the Good Hope Mine are depicted in sections 27, 34, and 35. The mill site is shown in Section 26
T34N R51E	1921	Fryer's House is shown in Section 28
T34N R51E	1921	The Copper King Mine (shaft and cabin) are shown in Section 28
T34N R51E	1921	Numerous roads and trails are shown
T34N R51E	1992	An abandoned telephone line is shown in sections 20 and 21
T34N R51E	1992	A mill building and a cabin are shown in Section 2
T34N R51E	1992	Numerous power lines, telephone lines, fences, and roads are shown
T34N R52E	1878	The Carlin to Tuscarora Road is shown, extending through sections 20, 29, and 32
T34N R52E	1878	A road is shown running along the south edge of Maggie Creek in Section 31
T34N R52E	1893	The Carlin to Tuscarora Road is shown, extending through sections 6, 7, 17, 18, 20, 29, and 32
T34N R52E	1893	A road is shown running along the south edge of Maggie Creek in Section 31
T35N R50E	1922	A north to south road listed as "to Beowawe" is shown in sections 3, 10, 15, 20, 21, and 22
T35N R50E	1922	"Prospect holes" and "dumps" are shown in Section 4
T35N R50E	1922	A "shaft", "tent", and a cabin are shown in Section 3
T35N R50E	1922	A "tunnel", "holes", and "trench and holes" are shown in Section 2
T35N R50E	1922	The Big Six Mine is shown in sections 11 and 12, also a road leading to the mine

Township	Year	Improvement
T35N R50E	1922	Section 12 also contains references to placers, a pump house and tank, house, tent frames, and a corral
T35N R50E	1922	Section 11 contains placers and a shaft
T35N R50E	1922	Inclines associated with the Blue Wing Mine are shown in sections 15 and 16
T35N R50E	1922	A location noted as "Goldville" is depicted in Section 13.
T35N R50E	1922	Another road runs east to west, connecting to the north south road in Section 10. It then extends east through sections 13, 14, and 15 with a branch that extends north to the Big Six Mine.
T35N R50E	1922	A shaft is noted in Section 24
T35N R50E	1922	The Top Notch Tunnel and D. Berning's House are shown in Section 22
T35N R50E	1922	A shaft is shown in Section 26
T35N R51E	1871	The Carlin to Bull Run Road is shown in sections 12, 13, 24, 25, 35, and 36
T35N R51E	1871	Another road branches off of the Bull Run Road in Section 24 and extends NW through sections 14, 10, and 3
T35N R51E	1871	The B. Simmons House is shown in Section 25, adjacent to the Bull Run Road
T35N R51E	1922	An east-west road noted as "to Carlin" is shown in Section 18
T35N R51E	1922	An east-west road noted as the "Carlin to Goldville Road" is shown in Section 19
T35N R51E	1922	Several houses are noted in Section 8

One major road corridor is noted. The Carlin to Bull Run (and later Tuscarora) road appears as early as 1871. This road extended north from Carlin, closely following Maggie Creek. This corridor is now occupied by State Route 766 and then a county road. Most other early (late 1800s) improvements also are roads.

Mining activities do not appear on GLO maps of the area until the 1920s. Most are associated with the Lynn District and are focused around the Big Six Mine. Numerous cabins, tent camps, and the community of Goldville make their appearance during this period. Within the archival study area, mining appears to be restricted to sections surrounding the Big Six.

Ranching related activities are almost non-existent on the reviewed GLO maps. Only an occasional corral is noted.

Settlement of the area is reflected by several named locations. These include houses occupied by W. James (1871), Snow (1871), Fryer (1921), and B. Simmons (1871). Cursory examination of census data does not provide definitive information regarding these individuals. It is likely that they were involved in some aspect of the ranching industry. Patterson et al. (1969:592) make reference to early ranch families who settled north of Carlin. They included S. Pierce, C. Boyden, James Clark, and James Griffin, all of whom were in the area by 1868. Of interest, no improvements associated with these individuals were noted on GLO maps. The community of Goldville and several houses are shown in the Lynn Mining District during the 1920s.

3.1.3.2 Master Title Plats

BLM Master title plats available on line (http://nv.blm.gov/landrecords/) were examined to determine the location and nature of previously authorized land uses along the EPP corridor. Of interest were land uses located partially or completely within sections through which the proposed EPP project corridor passes. Results of the search are provided below in Table 9. Results are listed

by township and section and, as a result, land uses that involved multiple sections are listed more than once.

Table 9. Uses Noted on BLM Master Title Plats

Serial Number	Land Use	Date	Township Range	Section
N47775	Power line & access road (45' ROW)	1988	34N/51E	4
5924	Fence line		34N/51E	4
N47775	Power line & access road (45' ROW)	1988	34N/51E	22
0134	Fence line		34N/51E	22
Elko 01655	Right of way		34N/51E	22
0119	Fence line		34N/51E	25
N47775	Power line & access road (45' ROW)	1988	34N/51E	26
0044	Fence line		34N/51E	26
N67173	Highway right of way	1966	34N/51E	26
Elko 01655	Right of way		34N/51E	26
N31116	Communication cable	1981	34N/51E	36
N46404	Pipeline right of way	1987	34N/51E	36
0119	Fence line		34N/52E	31
27-84-0055	Patent	1984	34N/52E	31
N59357	Patent - Land exchange?	1966	34N/52E	31
N47775	Power line & access road (45' ROW)	1988	35N/50E	2
1106	Fence line		35N/50E	2
N77030	Access road		35N/50E	2
N48045	Access road	1988	35N/50E	2
N47775	Power line & access road (45' ROW)	1988	35N/50E	11
N48045	Access road	1988	35N/50E	11
N64876	Pipeline right of way	1964	35N/50E	11
N64893	Transmission line right of way	1965	35N/50E	11
N47775	Power line & access road (45' ROW)	1988	35N/50E	12
N64806	Telephone line	1964	35N/50E	12
N87385	Seismic tower		35N/50E	12
N54682	Communication site & access road	1991	35N/50E	12
N87945	Communication site		35N/50E	12
1107	Fence line		35N/50E	13
5659	Fence line		35N/50E	13
1070002	Patent	1934	35N/50E	13
1107	Fence line		35N/51E	19
5659	Fence line		35N/51E	19
1019656	Patent	1928	35N/51E	19
572	Pond		35N/51E	30
N47775	Power line & access road (45' ROW)	1988	35N/51E	32
N60525	Fence line (10' ROW)	1996	36N/50E	28
N60654	Pipeline & access road	1996	36N/50E	28
681	Land treatment		36N/50E	28
1106	Fence line and cattle guard		36N/50E	28
27-97-0029	Patent	1997	36N/50E	28
27-94-0013	Patent	1994	36N/50E	29
681	Land treatment		36N/50E	29
N60525	Fence line (10' ROW)	1996	36N/50E	33
681	Land treatment		36N/50E	33

The issued rights-of-way date from 1928 through 1997. The oldest appear to be mineral patents. As such, they represent a transfer of title and do not necessarily represent an improvement old enough to be considered a cultural resource. Range improvements (many undated) noted on the Master Title Plats are limited to fences, some of which have associated cattle guards at road crossings, and ponds. Several "land treatments" are depicted on the Master Title Plats. These represent revegetation efforts initiated after major rangeland fires.

3.1.3.3 Federal Land Patents

A database maintained by the BLM (http://www.glorecords.blm.gov/patentsearch) was accessed to determine if federal land patents had been issued for sections through which the proposed EPP corridor passes. Results of the search are provided in Table 10. The patents are listed chronologically. In most cases, the patents include lands in addition to those located in sections through which the EPP corridor will pass. Only EPP corridor sections are listed in Table 10.

Table 10. Federal Land Patents Along the EPP Corridor

Accession Number	Patentee	Patent Date	Township Range	Sections
NVNV000024	Central Pacific Railroad Company	1877	34N/51E	25
NVNV000030	State of Nevada	1884	34N/51E	22
NVNV000031	Central Pacific Railroad Company	1886	34N/52E	31
NVNVAA-000017	State of Nevada	1890	36N/50E	28, 29, 33
NVNV000017	State of Nevada	1890	34N/51E	4, 22, 26, 36
NVNV000045	Central Pacific Railroad Company	1894	34N/51E	25
NVNV000031	Central Pacific Railroad Company	1894	34N/52E	31
NVNV000101	Central Pacific Railroad Company	1896	34N/51E	25
NVNV000196	Central Pacific Railroad Company	1902	34N/52E	31
NVNV000046	Central Pacific Railroad Company	1902	34N/51E	5, 27
NVNV000046	Central Pacific Railroad Company	1902	35N/51E	19, 22
NVNV000105	Central Pacific Railroad Company	1903	34N/51E	9, 21
423892	Nevada Star Mining Company	1914	34N/51E	27
783757	Lynn Big Six Company	1920	35N/50E	11, 12
756328	Morley Griswold, Charles W. Rogers, Henry Eaton, and Simon M. Dunn	1920	37N/49E	36
874294	Little Marsh Mining Company	1922	34N/51E	27
881735	Lynn Big Six Company	1922	35N/50E	12
935874	Lynn Big Six Company	1924	35N/50E	2
945439	Lynn Big Six Company	1924	35N/50E	2, 12
1019656	Central Pacific Railroad Company	1928	35N/51E	19, 22
1033552	Central Pacific Railroad Company	1930	35N/50E	13
1070002	Central Pacific Railroad Company	1934	35N/50E	13
946758	Lynn Big Six Company	1924	35N/50E	2
945439	Lynn Big Six Company	1924	35N/50E	11
946758	Lynn Big Six Company	1924	35N/50E	11
227092	S A Camp Ginning Company	1962	37N/49E	36
27-1966-0101	National Lead Company	1965	37N/49E	15
27-1966-0021	Newmont Gold Company	1965	35N/50E	13
NVN005935PT	Hadley, Mary et al.	1966	34N/52E	31
NVNV5935PT01	Hadley, Mary et al.	1967	34N/52E	31
27-1984-0055	Carlin Gold Mining Company	1984	34N/51E	36
27-1984-0055	Carlin Gold Mining Company	1984	34N/52E	31

Accession Number	Patentee	Patent Date	Township Range	Sections
27-1987-0040	N L Industries	1987	37N/49E	15
27-1994-0013	Barrick Goldstrike Mines, Inc.	1994	36N/50E	20, 29
27-1995-0037	Newmont Gold Company	1995	35N/50E	13
27-1995-0037	Newmont Gold Company	1995	35N/51E	19, 30
27-1997-0029	Barrick Goldstrike Mines, Inc.	1997	36N/50E	8, 28
27-2000-0059	Newmont	2000	34N/51E	27
27-2001-0124	Newmont Gold Company	2001	36N/50E	20

The earliest patents relate to the transfer of federal lands to the Central Pacific Railroad and the State of Nevada.

Several small mining companies obtained patents for land during the 1910s and 1920s. These included the Nevada Big Star Mining Company, the Little Marsh Mining Company, and the Lynn Big Six Company. All of these appear to be related to mining in the Lynn District which was experiencing heavy exploration and development during that period.

In 1920 a patent was issued to three men (Rogers, Eaton, and Dunn) intent on homesteading in the area. The application was filed by Morley Griswold, a prominent Elko attorney who was elected Lieutenant Governor of Nevada in 1926 and again in 1930. On the death of Governor Fred Balzar in 1934, Griswold became Governor, serving in that capacity through early 1935. A limited search on Ancestory.com did not result in the positive identification of Rogers, Eaton, or Dunn. It does not appear that they resided in Elko County at the time of their 1920 permit application, or in Nevada for that matter. Nor were they present prior to that (in the 1910 census) or thereafter (the 1930 census). This appears to be the only early patent that was related to settlement. These data suggest that very little homesteading-related settlement occurred in or near the immediate project area.

Two patents are in the name of Mary and other members of the Hadley family. Robert Harold Hadley of Yerington had acquired parts of the old Horseshoe Ranch in the 1950s. The patents probably relate to the Upper Horseshoe, which they retained until 1967.

Most of the remaining patents relate to modern era mining, beginning with exploration activities in the 1960s by Newmont and National Lead.

3.1.4 State of Nevada Land Records

3.1.4.1 State Land Patents

A database (http://lands.nv.gov/patents/patent_str.asp) maintained by the Nevada Division of State Lands was accessed to determine if land patents had been issued for sections through which the proposed EPP corridor passes. Results of the search are provided below in Table 11. Patents that involved multiple sections are listed more than once. Patents are listed chronologically.

The oldest patent dates to 1875 and was issued to a man listed as living in San Francisco. The patentee, Thomas Donnels, is listed in San Francisco directories as a bookkeeper at the company of Dunphy and Hildreth. William Dunphy and Thomas Hildreth began their Nevada

Cattle operation in the early 1870s and soon began to acquire state, government, private, and railroad lands. Thomas Donnels likely secured the early patent on behalf of his employers.

Only one patent was issued in the early years of the twentieth century. This was issued to Antonio S. Almeida in 1901. An Antonio Almeida is listed in the 1910 census as living in Contra Costa County, California, working as a farmer. Little else could be learned of the man.

Table 11. State Land Patents Along the EPP Corridor

Patent Number	Patentee	Patent Date	Township Range	Section	Quarters
858	Thomas Donnels	1875	36N 50E	20	W2 of SW4
4513	Antonio S. Almeida	1901	36N 50E	8	SE4 of NW4, W2 of NE4, NE4 of NE4
8658	Peter P. Lewin	1917	36N 50E	17	SE4 of SW4
8659	Charles E. Ames	1917	36N 50E	6	E2 of SW4
8659	Charles E. Ames	1917	36N 50E	7	N2 of NE4, SE4 of NE4, E2 of NW4, Lot 2 of NW4, N2 of SE4
8659	Charles E. Ames	1917	36N 50E	8	N2 of NW4, SW4 of NW4, N2 of SW4
8659	Charles E. Ames	1917	36N 50E	17	SW4 of SW4
8660	Henry H. Adams	1917	36N 50E	17	S2 of SE4
8660	Henry H. Adams	1917	36N 50E	21	NW4, E2
8662	William Edward Conlan	1917	36N 50E	6	NW4, Lot 4
8666	Isaac Lewin	1917	36N 50E	8	SE4 of NE4, N2 of SE4
8674	John F. Seymour	1917	36N 50E	16	Entire Section
8676	James H. Kelly	1917	36N 50E	6	SW4 of NE4, E2 of NE4, SE4
8677	Horace Allen Pine	1917	34N 51E	4	SE of NE, Lot 1
8589	Benjamin F. Jellison	1917	34N 51E	22	W2 of NE
8613	Humphry Paul Desmond	1917	34N 51E	22	E2 of NE
8615	Patrick Henry Desmond	1917	34N 51E	22	E2 of SE, NW of SE
8615	Patrick Henry Desmond	1917	34N 51E	26	W2 of NE, SE of NE, E2 of NW
8615	Patrick Henry Desmond	1917	34N 51E	36	NE of NE1/4
13310	W. T. Jenkins Company	1960	36N 50E	6	W2 of SW4, S2 of NW4, NE4 of NW4, NW4 of NE4
13310	W. T. Jenkins Company	1960	36N 50E	7	NW4 of NW4
13311	Caitano I. Vierra	1960	36N 50E	7	SW4 of NE4

A number of patents were issued in 1917. Patentees included Henry H. Adams, Charles E. Ames, William Edward Conlan, Patrick Henry Desmond, Humphry Paul Desmond, Benjamin Franklin Jellison, James H. Kelly, Isaac Lewin, Horace Allen Pine, and John F. Seymour. Census data for 1910 and 1920 provide precious few clues regarding these individuals. A Henry H. Adams is listed in Oakland as a jeweler. Although information varies regarding his birth year, he would have been about 49 in 1917. A William Conlan is listed in San Francisco as a physician. Born in 1866, he would have been 51 in 1917. Patrick and Humphry Desmond are brothers living in San Francisco. Patrick was a newspaper publisher, while Humphry (who mostly went by his middle name, Paul) was an insurance salesman. At the time they secured the land patents, they were 63 and 58 years old, respectively. Benjamin Jellison also lived in San Francisco where he had been in the saloon and liquor business for some time. As of 1917, he was 67 years old. Isaac Lewin is listed in San Francisco as a tailor, a painter, or a grainer (painter of graining). None of these individuals appear to have had

any direct relationship with lands in northeast Nevada. Most likely they secured the patents and then sold the land to some other party.

No other land patents were listed until the 1960s. They included W. T. Jenkins Company of Lander County, Nevada, in 1960, and Caitano Vierra of Elko County, Nevada, in 1960.

3.1.4.2 Range Maps

The Nevada State Division of Water Resources recently posted on line a series of range maps that date to the late 1920s. In anticipation of passage of grazing reform at the national level, ranchers were asked to prepare and submit maps showing areas over which they had traditionally grazed livestock. Examination of that mapping reveals two grazing operators who claimed portions of the general EPP corridor as part of their traditional grazing area. They were W. T. Jenkins (Map 82-30) and the Ellen Griffen (Map 553-34) (Figures 4 and 5). Current mapping indicates that the EPP corridor passes through a portion of only one grazing allotment, the T Lazy S Allotment (Lower Northern Pasture, mine area).

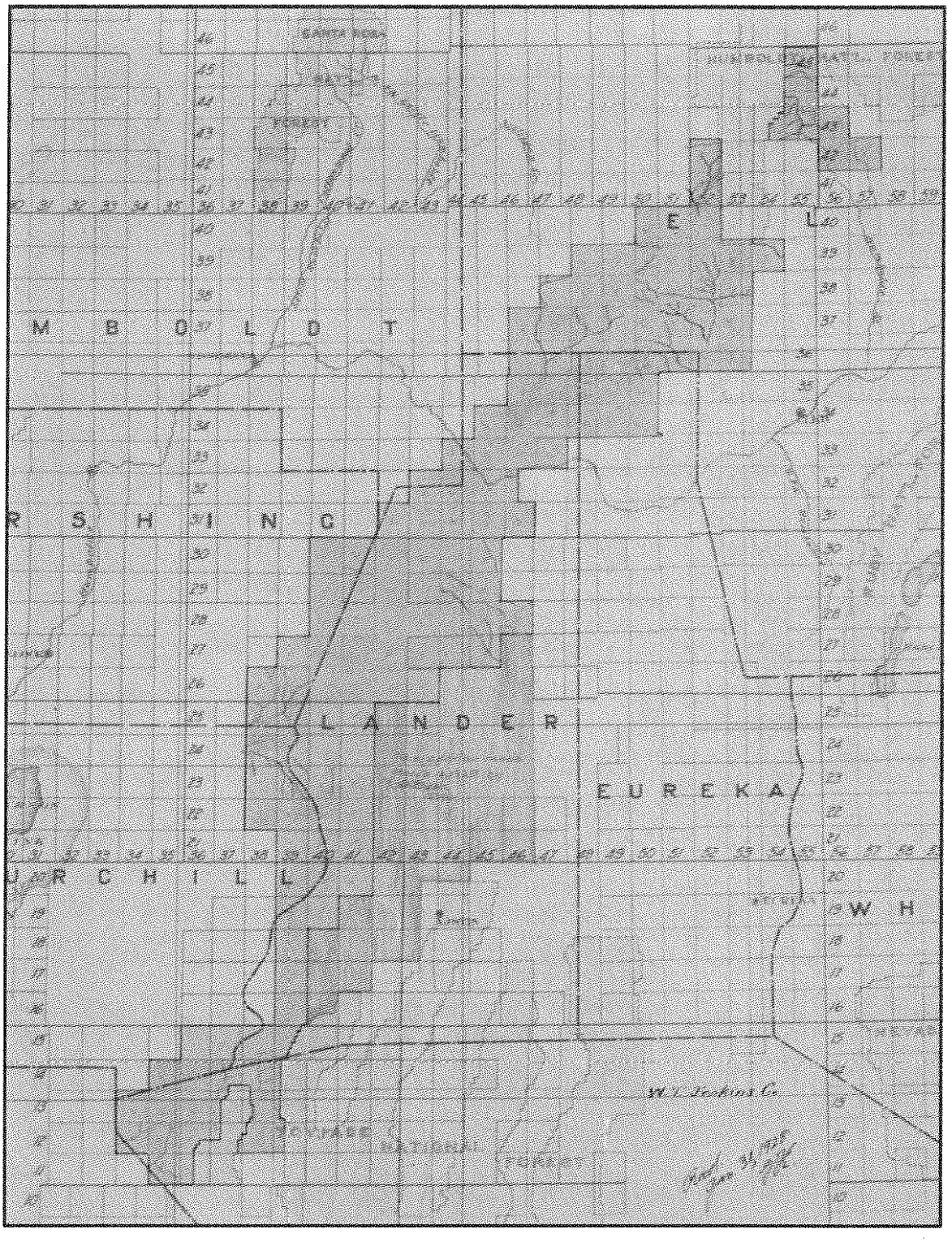

Figure 4. W. T. Jenkins Range Map, ca. 1920s (Nevada State Lands, Map 82-30)

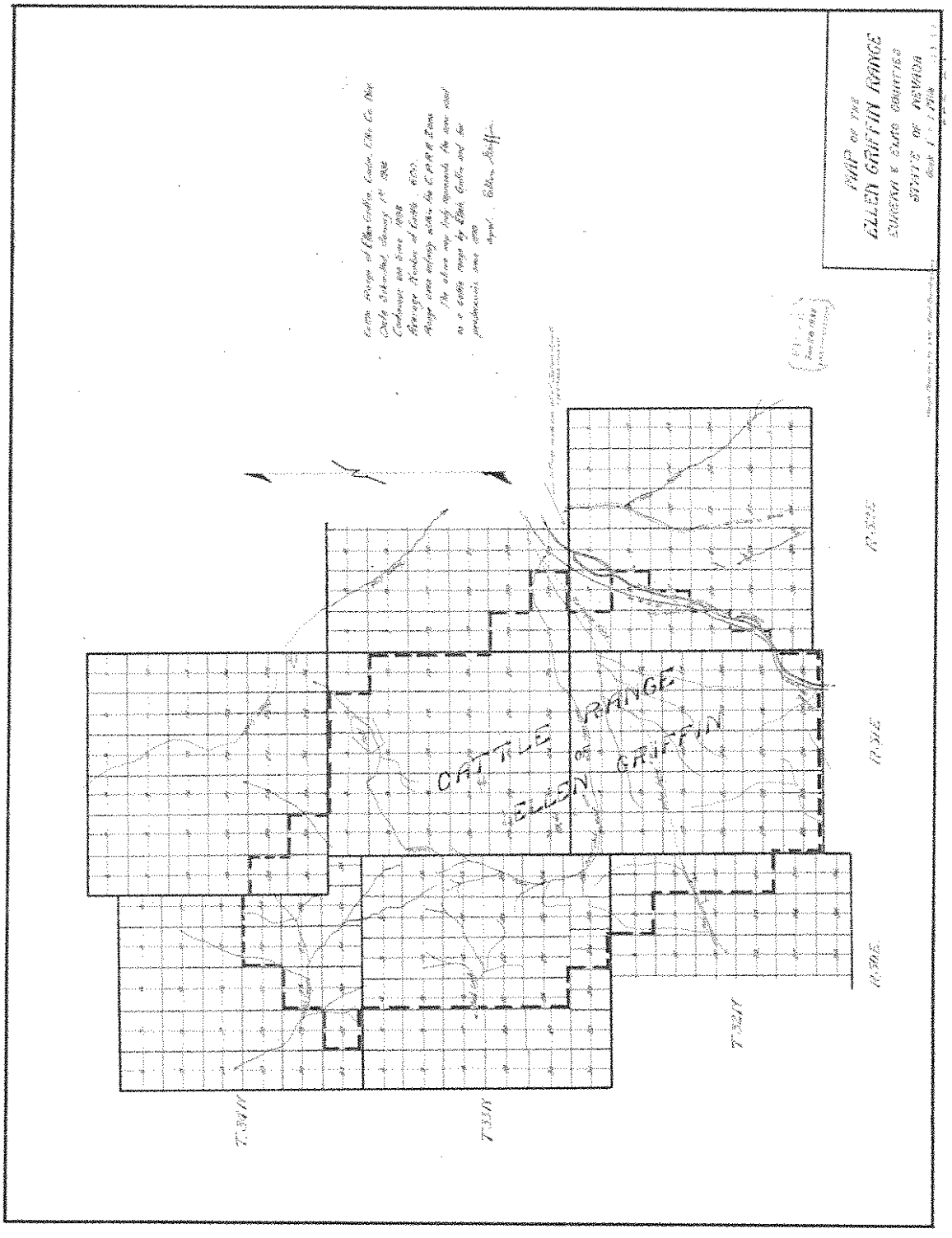

Figure 5. Ellen Griffin Range Map, ca. 1920s (Nevada State Lands, Map 553-34)

3.2 Prehistoric Period Overview

Schroedl (1995:Table 9) developed a phase sequence and a related projectile point chronology for the general EPP area. This chronology has been used to assign occupations to temporal phases during subsequent work in the area. The Schroedl framework reflected an earlier sequence developed by Elston and Budy (1990) based on the excavation of James Creek Shelter. Based on a detailed evaluation of data derived from James Creek Shelter, Pie Creek Shelter, and other regional sites, a revised phase sequence and point chronology was developed by Cannon and Johnson (2010:77-78). The revised chronology is provided in Table 12.

Table 12. Prehistoric Culture History Sequence for the General EPP Area.

Period (a)	Phase	Dates (Before Present)	Diagnostic Point Types
Late Prehistoric	Eagle Rock	650-100	Desert Side-notched and Cottonwood Triangular (b)
Late Archaic	Maggie Creek	1450-650	Eastgate Expanding Stem, Rose Spring Corner-notched, Rye Patch Miniature, and Elko series Desert Side-notched and Cottonwood Triangular after A.D. 1200
Middle Archaic	James Creek	3200-1450	Elko series
Middle Archaic	South Fork	4500-3200	Gatecliff Split Stem, Gatecliff Contracting Stem/Gypsum, and Humboldt Concave Base (also Elko series?)
Early Archaic	Pie Creek	8000-4500	Humboldt Concave Base and Northern Side-notched (also Gatecliff Split Stem and/or Elko series?)
Paleo-archaic	Late	10,000–8000	Stemmed and, after 9,000 B.C. Pinto
Paleo-archaic	Early	12,000-10,000	Fluted and Stemmed

a. The term Late Archaic refers to the period that begins roughly with the introduction of the bow and arrow (see Hockett and Morgenstern 2003), and Late Prehistoric refers to the eastern Great Basin post-Fremont, presumably Numic, period (see Janetski and Smith 2007). The term Middle Archaic refers to the pre–bow and arrow, late Holocene occupations of the region.
b. Recent work (e.g., Schroedl and Kenzle 1997) suggests continuity in Eagle Rock material culture into at least the late 1800s, well after Euro-American settlement of northern Nevada.

3.2.1. Paleo-archaic Period

Recently discovered evidence from the western Great Basin suggests that humans were present in the region prior to 12,000 B.P. (Gilbert et al. 2008). Evidence of human occupation becomes somewhat more common after about 11,000 B.P. (Beck and Jones 1997; Graf and Schmitt 2007). Madsen et al. (2005) divide the Great Basin Paleo-archaic Period into early and late phases at approximately the beginning of the Holocene. Diagnostic artifacts of the Early Paleo-archaic Phase include both fluted and stemmed projectile point varieties (Beck and Jones 1997; Beck and Jones 2007; Grayson 2011). Late Paleoarchaic Phase diagnostic artifacts include stemmed points and, after about 9000 B.P., Pinto points (Hockett 1995).

Most known Great Basin Paleo-archaic sites are situated adjacent to pluvial lakes or near wetland settings. This suggests that resources typical of such settings were the primary focus of subsistence activities (Beck and Jones 1997; Duke and Young 2007; Schmitt and Madsen 2005). Small mammals, birds, and wetland plants were important food resources during the Paleo-archaic (Broughton et al. 2008; Hockett 2007; Madsen et al. 2005; Pinson 2007). Few sites containing Paleo-archaic Period materials have been recorded to date in the general EPP area. As noted by Cannon and Creer (2010:14):

> Great Basin Stemmed points are reported to occur only as "scattered" isolates in the area (Schroedl 1995:55). Outside of the area, stemmed points have been found, also in small numbers, at the Tosawihi Quarries (Ataman and Drews 1992:185; Hockett 2006a:Table 2) and along Susie Creek and Maggie Creek (Armentrout and Hanes 1986). Other reports of stemmed points from northeastern Nevada for which provenience information is available (Hockett 1995) are from areas far to the south or east of the Humboldt River. Fluted points are even rarer than stemmed points in the area north of the Humboldt: an artifact described as a Clovis preform is reported from the Tosawihi Quarries (Ataman and Drews 1992:183–185), and a Clovis point is reported from the Izzenhood Valley (McGuire et al. 2004:15).

These data suggest only a limited, transient human presence in the general project area during this period. The rarity of Paleo-archaic Period materials in the area north of the Humboldt River may be due to the absence of terminal Pleistocene/early Holocene pluvial lakes. As noted by Cannon and Creer (2010:15), "given the clear focus of Paleo-archaic settlement on wetland habitats, the absence of a substantial Paleo-archaic presence in this part of the Great Basin is perhaps not surprising."

3.2.2. Early Archaic Period

The shift from the Paleo-archaic Period to the Early Archaic Period corresponds roughly to the onset of the middle Holocene around 8000 B.P. During the middle Holocene the climate of the Great Basin was generally warmer and drier than that of today.

Recently, significant Early Archaic Period deposits were recorded at Pie Creek Shelter, located northeast of the EPP area. Subsequent studies there (McGuire et al. 2004) allowed for definition of a Pie Creek Phase, from 7000–4500 B.P., associated with projectile point types such as Gatecliff, Humboldt, Northern Side-notched, and, perhaps, Elko series (Cannon 2010:80). The Pie Creek Shelter artifact assemblage suggests that big-game hunting was not a major subsistence activity. Small game and plant resources were the priority. This pattern appears consistent with a broader Great Basin-wide increase in the use of plant resources and grinding tools that began during the early to middle Holocene transition (e.g., Grayson 2011). It is suggested that Pie Creek Shelter was occupied by a group of highly mobile residential foragers who focused on wetland resources found in the immediate environs (McGuire et al. 2004:123–125).

The Early Archaic Period deposits at Pie Creek Shelter represent the earliest well-dated evidence for substantial occupation of the Upper Humboldt River region. This sparseness of evidence for Early Archaic occupations is consistent with other portions of the Great Basin and suggests low human population densities during the middle Holocene (Grayson 2000).

3.2.3. Middle Archaic Period: South Fork and James Creek Phases

The beginning of the Middle Archaic Period corresponds roughly with the transition from the middle to the late Holocene. The first portion of the Middle Archaic is commonly noted as the South Fork Phase. During this phase (sometime between 1600 and 1200 B.C.), sustained human occupation of the immediate project area began (Cannon and Johnson 2010:79-80). Based on work at Pie Creek Shelter, McGuire et al. (2004) suggest that subsistence practices during the South Fork Phase focused on the acquisition of large game, and that settlement systems may have reflected a high degree of mobility. Large, diverse assemblages of lithics and other artifacts associated with Gatecliff projectile points may represent residential bases. However, wild-plant procurement did continue, and the exact nature of the settlement strategy has not been well established. While few of these large sites have been excavated, many appear to be palimpsests, consisting of overlapping, repeated occupations. Although Gatecliff projectile points were still used during this phase, Humboldt Concave-base projectile points appear to be the dominant type (Schroedl 1995a:56, 1995b:56; Cannon and Creer (2010:15).

The James Creek Phase is the latter of the two Middle Archaic phases. At Pie Creek Shelter, McGuire et al. (2004) suggest a continued focus on large game during the James Creek phase, while settlement continued to be highly organized. There is a reduction in the quantity of exotic lithic material types during this time, which McGuire et al. (2004:128) interpret as indicating a reduction in overall foraging territory size. Notably, larger residential camps dating to this phase are known from the Upper Humboldt region, including the Dry Susie Creek site at which evidence of pit structures was found (Reust et al. 1994; Smith and Reust 1995).

The use of Elko points was not restricted to the James Creek Phase (Schroedl [1995b:95], Holmer [1986], Cannon 2010:76-77]). A small number of Elko points were found in pre–James Creek levels at both James Creek Shelter and Pie Creek Shelter. This raises the possibility that this point style was used prior to the time represented by the James Creek Phase. Also, Elko points are present in post–James Creek phase levels at James Creek Shelter and at Pie Creek Shelter. Some suggest that this represents continued use of atlatl darts (and the Elko series points with which they were tipped) during the subsequent Maggie Creek Phase alongside Rose Spring and Eastgate types used with the bow and arrow (Cannon [2010], Grayson [2011], Hockett and Morgenstein [2003]). Although small numbers of Elko projectile points are found before and after, Elko series points are the predominant type found at sites assigned to the James Creek phase.

3.2.4. Late Archaic Period: Maggie Creek Phase

The Late Archaic Period, represented in the archival study area by the Maggie Creek Phase, is associated with the appearance of bow-and-arrow technology in the region (Cannon and Creer 2010:16). Arrow point types such as Eastgate Expanding Stem, Rose Spring Corner-notched, and Rye Patch Miniature are diagnostic of this phase (Hockett and Morgenstein 2003; Schroedl 1995). The Maggie Creek Phase begins approximately 1250 years B.P., and continues until approximately 650 years B.P. (Hockett and Morgenstein 2003). At both James Creek and Pie Creek Shelters, occupations appear to have been the most intensive during this phase. In contrast, open sites in the region may have been occupied less intensively than during earlier or later periods (Newsome and Tipps 1997). At Pie Creek Shelter, exotic tool stone use continues to decline during the Maggie

Creek Phase (suggesting further contraction of foraging ranges) while the use of plant resources may have intensified (McGuire et al. 2004:129–130). Features characteristic of Fremont assemblages (such as Fremont-like ceramics, Fremont-style side-notched projectile points, and corn remains) are present at some sites that date to the Maggie Creek phase (Hockett and Morgenstein 2003). Most such sites are located some distance to the east and southeast of the present study area, though maize pollen may be present in samples from James Creek Shelter (Madsen 1990:109).

3.2.5. Late Prehistoric Period: Eagle Rock Phase

The Late Prehistoric Period is represented in the region by the Eagle Rock Phase, which extends from approximately 650 years B.P. to as late as the 1880s or 1890s (Schroedl 1995:56). Small arrow points such as Desert Side-notched and Cottonwood Triangular points are typical of this phase, as is irregular brownware pottery. The Eagle Rock Phase and its characteristic artifacts may coincide with an expansion of Numic-speaking peoples out of the Mojave Desert (e.g., Bettinger and Baumhoff 1982; Rhode 1994), though the cause of the changes in material culture that occur at this time remains open to debate (e.g., Aikens and Witherspoon 1986; Lyneis 1982; Madsen and Rhode 1994). Whatever the cause, significant changes occur in the archaeological record of the region during the Eagle Rock Phase, and the overall pattern appears to represent substantial intensification in the use of small game and plant resources (Bright et al. 2002; Ugan and Bright 2001). Most radiocarbon dates from the study area fall within the Eagle Rock Phase. This is generally interpreted to reflect either a greater population density, longer periods of regional occupancy, or a combination of the two factors (Cannon and Johnson 2010:59-60).

3.3 Ethnographic Overview

The White Knife or Tosawihi Shoshone are relatively well-documented in the ethnographic, historical, and cultural research management literatures. The following overview is meant to briefly describe the culture in the proto-historic and historic past, and link this to current groups and the concerns they have regarding the development of what they now call the "Tosawihi Homeland." The following review is focused on that portion of northern Nevada that surrounds the study area. Much of the material on the project vicinity is focused upon nearby Tosawihi Quarry, and much of the use of the project area is related to its nearness.

3.3.1 White Knife Shoshone Ethnography

Various Indian agents, other Shoshones, and historic observers noted a group they called "White Knives" during the early contact period (Burton 1862; Holeman 1852; Hurt 1857; Forney 1858, 1859; Wasson 1862; Powell and Ingalls 1874). Powell took a To-sau-wi-hi vocabulary from a Captain Johnson in Salt Lake City in 1873 (Fowler and Fowler 1971:32, 265-269). Most observers placed them north of Battle Mountain. They are discussed briefly in Julian Steward's *Great Basin Aboriginal Sociopolitical Groups* (1938); he does not treat them as a separate band but includes pertinent information in his sections on Humboldt River and Battle Mountain groups. One of Steward's contemporaries, Jack Harris, published a study specific to the Tosawihi in 1940. Clemmer and Stewart (1986) review treaty negotiations in the Great Basin, including this area, and Thomas, Pendleton, and Cappannari (1986) provide a synthesis of the Western Shoshone in the Great Basin volume of the *Handbook of North American Indians.*

Much of the more recent ethnographic research has been conducted under the aegis of cultural resource management, and involved documentation of contemporary knowledge of and concern for places within the Tosawihi Homeland. Mining expansion in the 1980s and the 2000s brought development to what was once a hinterland, and impacts to the Tosawihi Quarry and Rock Creek area fostered ethnographic cultural resource studies for the BLM. Current uses of and concerns for Tosawihi Quarry were elicited by Clemmer (1990) and Rusco and Raven (1992): the quarry was recognized as a sacred location by the Inter-Tribal Council of Nevada (1976). Clemmer's study focused on the White Knife Shoshone as a socio-political entity, and included an extensive search of the literature, interviews, and a field trip to the Tosawihi Quarry and the Rock Creek Dam Site. Rusco and Raven (1992) conducted meetings and interviews regarding the Quarry at Battle Mountain, Wells, Lee, and Owyhee and led a field trip to the quarries in June 1991. Additional expansion planned at Tosawihi in 2009 required a synthesis of past consultation, and meetings, interviews, and fieldwork with people from the Elko and Battle Mountain Bands of Western Shoshone, as well as Tosawihi descendents at the Duck Valley reservation (Tiley 2010a). The Dee Arturo Mine Expansion was the subject of an ethnographic review and field trips in the following year (Tiley 2010b).

Three recent studies by Clemmer are more theoretical in nature. Clemmer investigates whether reconstructions of past Western Shoshone lifeways were inaccurate because even the early observers encountered a profoundly changed people and environment (2009a). In the same vein, he questions whether Steward's characterization of family-scale organization was warranted or was an artifact of his neo-evolutionary classification schemes and data obtained from people under harsh historical circumstances (Clemmer 2009c). In another, he examines the Tosawihi data for evidence of whether White Knives practiced conservation methods in the proto-historic period (Clemmer 2009b).

3.3.1.1 Territory

Steward (1938:162) restricted the designation Tosawihi to people who wintered on the Humboldt River above Battle Mountain, and disagreed with those who felt this was a band with a considerably larger range. He included the Rock Creek area as their hunting and gathering area. Hurt (1856:228-9) was similarly restrictive, applying the term only to a group living near Stony Point. Many contemporary observers, however, disagreed. Powell and Ingalls (1874:12) used it to denote people in the Battle Mountain vicinity. Holeman (1852:52) included people of the Humboldt River and Goose Creek Mountains, and Burton (1862:481) extended the term even to the people of Diamond Valley. Simpson (1876:34-35) used the term most broadly, as he considered the To-sa-witches to be a division of Shoshones along the Humboldt River between the Un-goew-ah and Cooper's Ranges.

Rusco and Raven (1992:9-10) reviewed ethno-historic information on the Tosawihi or White Knife Shoshone (see especially Steward 1938, 1970 and Harris 1940), placing the pre-contact range "in the Humboldt River Valley around Battle Mountain, the lands drained by Rock Creek and other northern tributaries of the Humboldt as far west as Golconda or Winnemucca and east to the Independence Mountains." The summer range extended north to the Owyhee and Snake rivers and south to Austin and Eureka (Harris 1940:39).

The population in the Humboldt River area was comparatively high, as reflected in accounts of early observers. Ogden visited a village of 150 "tents" while he was in the Humboldt area, and was visited by 150 Indians (Steward 1938:154). Holeman reported two groups of Humboldt River Shoshone in 1853, which he reported to be under the leadership of Ne-me-te-kah (man eater). They were broken into two groups; one group of 200 was near Wells, with 450 at Stony Point (Valmy) under the leadership of a [subchief?] *Oh-hah-quak*. An early Indian agent noted that 200 to 300 White Knives were at Stony Point near Battle Mountain in 1858 (Forney 1858) and a group of Tosawihi was identified in Ruby Valley in 1862 (Nye 1862). In 1859, Forney reported seven bands along the Humboldt River (1959:363). These numbers are not improbably high when one considers reports of 1000 Shoshone people camped at the South Fork near Elko (Steward 1938:155).

3.3.1.2 Subsistence and Settlement

The Tosawihi had a large range which they visited seasonally. The Humboldt River provided riverine resources and wetlands; Steward calls the area "fertile" compared to other Western Shoshone tracts (Steward 1938:153). They often wintered (and sometimes summered) on the Snake River in order to fish, and spent the fall in the Ruby Mountains or Reese Valley for pine-nutting (Clemmer 2009b:561). These movements, at least those observed in the historic period, were not by individuals, but rather as an *en masse* movement of the group (Clemmer 1990:2). The quarries were visited in transit, accessed from camps in better watered and sheltered drainages.

Winter encampments were set up in places where "accessibility to stored seeds, especially pine nuts, water, sufficient wood for house building and fuel, and absence of extremely low winter temperatures" (Steward 1938:232). These conditions were most often met in the pinyon-juniper belt of the mountains, at canyon mouths, or in broad valleys near fishing streams. Boulder Creek, with its broad braided channels on its lower courses, and riparian strip along its upper reaches, would have met these requirements in several locations. The nearness to the wetlands along the Humboldt, a kind of economic focus routinely overlooked by Steward, would have also enhanced its attractiveness.

The seasonally important Snake River fishery fostered extensive ties with other groups. Another Western Shoshone group, the Bruneau, also fished there, and the catch was shared with the Bannocks and the *Koa'agai'itoka* (Murphy and Murphy 1986:287; Stewart 1939:133). When salmon were abundant, people from both the Snake and Humboldt Rivers also wintered on the South Fork of the Owyhee River at a location called *Sohohunuh* (Steward 1938:168). The spring fish run attracted people to smaller drainages for fishing and for collecting roots and berries (Clemmer 2009c:402). Fish weirs were constructed on larger rivers, while basketry traps were employed on smaller streams (Murphy and Murphy 1960:222, 225).

Rabbit drives conducted in the fall and winter provided meat and furs. Rabbits were driven into long nets by the entire community. A favored spot was *Pagawi*, at Rock House. Steward noted that sometimes several small communities joined together for drives. Another communal activity was antelope hunting (Clemmer 2009b:568-569). Steward (1938:163) relayed that he was told that people at Battle Mountain hunted antelope under the Paiute antelope shaman near Iron Point. Cooperative deer hunts were also sometimes held.

Away from rivers, there is evidence that Western Shoshone used fire to enhance seed production, and to drive crickets, grasshoppers, rabbits, deer, and antelope (Stewart 2002:227-231; Steward 1938:118-119). Hunting was pursued in the northern Nevada Tosawihi territory, especially in areas adjacent to Willow Creek, into the twentieth century.

Steward obtained details on only four winter settlements. The first was along the Humboldt River between Battle Mountain and Iron Point, although this was less a formal settlement than a general area to which people returned. Another was named *Pagowe*, about two miles east of Herron on the river. *Bohowia*, near Iron Point, was a place where about ten families wintered. Finally, there was a concentration of camps near Battle Mountain named *Tonomudza* (Steward 1938:162).

Although Steward and others characterize the Western Shoshone as living in an austere environment in which they could barely eke out a living, there has been recent critical scrutiny of that assertion by Clemmer (2009c) and others. Particularly in the case of the Tosawihi, whose territory included extensive wetlands, a salmon fishery, broad seed-filled valleys, and access to mountains for pine nuts, the impoverished conditions reported by historic observers may well have been the consequence of historic disruptions.

3.3.1.3 Social Organization

The proto-historic social organization of the White Knife Shoshone is the topic of current debate. While this group was often identified in the historic record, Steward dismisses the notion that the White Knives were a band:

> ...The much publicized Tosawi or White Knife people of the Battle Mountain region are so called because an excellent grade of white chert is found in that country...They had no organization and were not a band. People who wintered on the Humboldt River above Battle Mountain were called Tosawi (tosa, white, and wi, knife) because they procured...white flint for knives in the mountains to the north. This name, unfortunately, became prominent and led to the fiction that all Shoshoni in a large area around Battle Mountain had comprised a band by this name. Because, like other Shoshoni group names, Toisawi did not designate a definitely bounded linguistic, political, cultural, or even geographical division, no two writers have agreed on its use (Steward 1938:248,162).

Harris (1940:39) paints much the same picture, stating that the name White Knifes was geographical in nature, "designating a shifting membership of Indians who were also known by a number of other names depending upon their temporary location or their principal food supply." Harris did, however, discuss the Tosawihi group as a separate entity in his study. Clemmer (1990:2, 2009c), on the other hand is convinced that the White Knives were, in fact, a group which he defines as an *ethnie*; a self-identified group of people with shared cultural characteristics distinguishing themselves from others and sharing ties to a well-defined, but not exclusively owned, territory." He documents statements by early observers indicating that they considered the Tosawihi a distinct band in the early emigrant period. Clemmer (2009a) also argues that the organizational simplicity noted by emigrants, and related to Steward, was likely a consequence of the historic disruption of food supplies and lifeways in general.

3.3.1.4 Tosawihi Quarry and Trade

The presence of the Tosawihi Quarry placed Tosawihi people in a pivotal position as traders of this tool stone. The traditional importance of the Tosawihi Quarry centers around three topics: medicine and power, economic pursuits, and Tosawihi as a focal point for ethnic identity (Rusco and Raven 1992:19).

Tosawihi chert was a valuable item both for use and for trade. The chert became widely distributed through trade networks; Rusco and Duffe (1976) noted Tosawihi materials in archaeological sites up to 150 miles north and east of the quarry. Tool stone was exchanged for access to hunting and fishing lands to the north and, in historic times, for horses. The Tosawihi area was also a hunting and gathering locale, and trips there were a part of the seasonal round of the White Knife people. The use of the Tosawihi Quarry area as a burial ground also has been noted (Clemmer 1990:18-19).

Their seasonal transhumance to the salmon areas of the Snake/Owyhee drainages put them in yearly contact with adjacent groups (Clemmer 1990:22). Fall pine-nut festivals, which brought the Tosawihi together with groups to the south in the central Nevada foothills and mountains would have also provided trade opportunities, as did combined antelope hunts with their Paiute neighbors to the west (Steward 1938:163).

Relations between neighboring groups were also cemented by festivals. Local festivals were reported by Steward (1938:163) at Iron Point and Battle Mountain, although he notes Tosawihi people also attended festivals at South Fork, near Elko.

3.3.1.5 Religion

Western Shoshone religion centers on the acquisition and use of *buha,* or power, the balancing of relationships between humans and the natural world, and guardian spirits. Most frequently, religious practice occurs as prayers by individuals, typically in gratitude for food, and prayers to sacred places and their resident spirits (Clemmer 1990:16). Spirits are often associated with water, including lakes, springs, and water holes (Hultkrantz 1986:633). Guardian spirits are sought in vision quests, often on mountaintops. It may also be sought at a Sun Dance. Not every person has this kind of power. White chert is also considered a source of power (Clemmer 1990:18).

Little Men, who lived throughout Western Shoshone territory, require that permission is asked for before going into unfamiliar areas, and their cooperation is a key element in successful hunts. There is particular concern regarding the Little Men in Tosawihi territory, because they abandon lands that are desecrated, and take the spirits of the game with them (Clemmer 1990:17).

Some places in the landscape were considered particularly embued with *buha.* The area around Tosawihi Quarry was one of them. Three minerals at Tosawihi Quarry are used medicinally: white opalite, and red (*pisappih, or beeshop*) and white (*aipin*) rhyolitic tuff. Objects made from opalite are also viewed as possessing power. Tosawihi chert streaked in red is considered by some to be a powerfully harmful substance. There is also a vision quest site in the vicinity.

The Rock Creek area was another sacred area which is used ceremonially, and also is a burial location. It was previously a winter camp. There are several springs in the area, around which historic Indian farms were located. Contemporary people also visit the Tosawihi Homeland for curing at hot springs and to collect willow for baskets, particularly along Willow Creek (Clemmer 1990:19-20).

3.3.2 Ethno-history of the White Knife Shoshone

Clemmer (2009a, 2009c) has recently compiled very extensive chronicles of the ethno-history of the Western Shoshone, and the Tosawihi in particular. The following section relates the events that had the most pertinence to changing Tosawihi lifeways in the northern portion of Nevada. Clemmer makes the case that, in spite of profound historic era changes, the Tosawihi have been able to maintain their identity to the present day.

In addition to comprising a group prior to the arrival of Euro-Americans, Clemmer (1990:22) characterizes the White Knife group as one that has persisted through time. He states that

> Historic disruptions to their lifeways, particularly during the warfare and early reservation period, did not prevent them from the maintenance of a Tosawihi ethnic group with a Tosawihi ethnic identity. This identity has been reinforced to the present by the continued use of the Tosawihi Homeland for hunting gathering, doctoring, collecting white chert, and religious purposes. Families continue to identify themselves as Tosawihi people, and to pass down knowledge of the area; some who have never visited the quarry nonetheless had detailed knowledge of it. In the last 30 years there has been a resurgence of spiritual lifeways, and young people are increasingly involved. In this sense, Tosawihi Quarry is becoming more important to the Tosawihi identity.

Nevertheless, historic forces have scattered Tosawihi descendents and prevented many from obtaining first-hand knowledge of the Tosawihi Homeland. The following discussion centers around how the Tosawihi Shoshone came to be dispersed. This is essential information for management because descendents with connections to and concerns for the area are now located in several different areas, and associated with different reservations.

3.3.2.1 Early Contacts

The earliest contacts with non-Indians took place with trappers in the early nineteenth century. Peter Skene Ogden of the British Hudson Bay Company passed through Western Shoshone territory in 1828, pursuing a "scorched-earth" policy meant to destroy beaver populations and leave the country depauperate and therefore uninteresting to Americans who were extending claims to the Northwest (Miller and Miller 1971:107-8). The Walker-Bonneville Expedition in 1833-34 found few beaver (Leonard 1959:68). Trapping was abandoned after the fruitless Hamilton Expedition of 1845 (Clemmer 2009b:564). Although most researchers characterize this early period as having only a glancing impact on Great Basin lifeways (Rusco 1978), Clemmer (2009b:564-564) maintains that the Western Shoshone used beavers for clothing and likely considered them a valuable resource; therefore the loss of beaver stands as the first of many disruptions to their cultural practices.

3.3.2.2 Changes to Lifeways

The migratory lifeway of the Tosawihi was enhanced by the introduction of horses, which they seem to have procured earlier than other Great Basin groups. They may have gotten them in trade prior to 1860; Clemmer wonders whether the trading of white chert to the north enabled their early access to horses (Clemmer 1990:2, 23). As early as 1828, Hudson Bay Company trapper Peter Ogden, following the Humboldt River near its confluence with the Little Humboldt reported that he was following an "Indian track" that had been travelled by 400 horses. In the westernmost part of Western Shoshone territory, he came upon a camp of 300 persons, stating "it is almost undescribable how numerous the natives are in this quarter." Near Dunphy, at the confluence of Boulder Creek and the Humboldt River, he reported that Indians were "most numerous" (Ogden 1971:107-108).

The environment was affected by early trappers and, more extensively, by emigrants following the Humboldt River. The depletion of the beaver population has already been noted. Antelope, perhaps a more important resource, became scarce as domesticated animal competed with them for forage, and roads crossed their migration corridors. The last antelope drive in this area was held in the 1870s (Steward 1938:34-36).

Tremendous environmental destruction was reaped by the passage of thousands of emigrants and their livestock. Game was hunted out or scared away, water holes were polluted or made inaccessible, fishing spots were usurped, waterfowl depleted, and economically important grasses were destroyed. As their food supplies diminished, native peoples began stealing stock, leading to a series of raids and reprisals. Once ranches and farms were established, many resources were permanently out of reach. Due to these factors, historical accounts of the Tosawihi, and other nearby Shoshone, stressed their impoverished state. Steward states, "Although the Humboldt River was the main immigrant thoroughfare, early descriptions of its natives were generally limited to comments on their poverty" (1938:152). The statement would be more accurate if rephrased "*Because* the Humboldt River...," since it is likely that it was activities of emigrants that caused the poverty.

Mining activities reached an early peak in the area between 1863 and 1875, when Tuscarora and Midas swelled in population (Clemmer 2009a: 862). Although the greatest impact was to areas adjoining the Humboldt River to the south, the Tosawihi people's southern range would have been affected. In particular, the mines' need for lumber for buildings, shoring, and charcoal to fuel the smelters destroyed pine nut stands that were critical winter food sources for the Shoshone (Clemmer 2009a:863-864).

Activities mentioned above would have also changed settlement patterns, both by attracting Shoshone to ranches, mines, and towns for wage labor, and by rendering old settlement areas uninhabitable. Clemmer (2009a:865), as a result, questions whether the purportedly "aboriginal" villages noted by Stewart were in fact in the locations villages would have been prior to Euro-American contact.

Other changes were related to the introduction of various material goods. As was the case with the introduction of the horse, material goods entered Shoshone communities at surprisingly

early dates. P.V. Crawford (1924:149) noted Indian people at Salmon Falls in 1851 were willing to trade surplus fish "for almost anything…but shirts were their greatest want." In 1852, another emigrant noted a desire to trade for "old shirts, cooking utensils, fish-hooks, powder or anything they can get…." (Hanna 1852:23). Yet another emigrant noted Indian "fishmongers" anxious to obtain ammunition, but willing to trade for apparel and tin ware (Handsaker 1853:23-24). Guns were observed in the area as early as 1846 (Steward 1938:152). Sometimes the Tosawihi sought this trade. Agent Garland Hurt noted that the White Knives he encountered in 1856 at Stony Point near Valmy lived "north and had come over to trade with the emigrants." He noted that they were "well supplied with guns and horses" and wanted to trade for ammunition. He later saw fifty White Knives near Gravelly Ford (Clemmer 2009c:406). This burgeoning trade for Euro-American goods replaced, to a great extent, the use of Tosawihi chert as a basis of trade, especially after the introduction of firearms which rendered stone tools less necessary. In 1856, Agent Hurt (1857) noted that the White Knives "derive their name from a beautiful flint found in the mountains of that region, and *formerly* used by them as a substitute for knives in dressing their food" (emphasis added). It would appear that these traditional traders had found fish the new commodity with which to obtain weaponry.

3.3.2.3 Conflict and Its Consequences for Social Organization

During the ethno-historic period, horsed Tosawihi Shoshone ranged far outside the limits of their traditional homeland, and acquired a reputation as fighters. Tosawihi Shoshone often appear in historical accounts as horsed raiders. Warren Wasson, an Indian agent, warns of "the danger of interruption by Indians to the mail and telegraph lines apprehended during the coming spring is from a band of Sho sho nees (*sic*) called "White knives" occupying the country between the Upper Humboldt and the present mail road…" (Wasson 1862). It was on the basis of such accounts that Steward (1938) maintained that White Knife band organization was an example of the outcome of historic changes; he termed such post-contact units "predatory bands." It has been suggested that these activities may have changed their social organization, "welding" them into a more cohesive group (Harris 1940). Not all scholars agreed: both Stewart (1942) and Service (1962) argued that band formation in many parts of the Great Basin occurred before contact.

Further, Clemmer (2009c:413) points out that although rumors abounded that Tosawihi were "raiders," the people the U.S. Army fought were likely Goshute Shoshone. What were termed "depredations" along the emigrant trail and at Gravelly Ford are not clearly attributable to the Tosawihi either. The U.S. Army took revenge for these acts on a Northwestern Shoshone group on Bear River in 1861-62. Historic Tosawihi leaders such as Captain Sam and Buck, rather than acting as military captains heading "predatory bands," seem to have been most interested in working out peace deals and getting reservations set aside for their people.

In any case, after what appears to have been the presence of an overall "chief" named *Shokub* in the 1850s, his choice of a successor named Buck appears to have fragmented the group politically (Clemmer 1990:23). This is well before the predatory band period.

3.3.2.4 The Treaty and Reservation Period

Two treaties were negotiated with the White Knife and other Shoshone people. A treaty of friendship in 1855 with the U.S. Government was never ratified. The Ruby Valley Treaty of 1863

was ratified. Buck signed the treaty on behalf of the White Knives. Although no land was ceded, Shoshone people were to move onto reservations provided for them.

In 1877, two Western Shoshone reservations were set aside, one at Carlin Farms, and one at Duck Valley. Ethno-historic information indicates that a White Knife leader, Captain Sam, was instrumental in asking for a reservation in Duck Valley (Inter-Tribal Council 1976:72-74; Clemmer 2009c:407-408). Shoshone people, probably including White Knives, were evicted from Carlin Farms in 1877 (Clemmer and Stewart 1986:534). Captain Sam and the White Knives from Carlin Farms moved to Duck Valley, which was open to all Shoshone people. Some Tosawihi under the leader Buck apparently lived in Ruby Valley from 1862 to 1877, when they relocated to the Duck Valley Reservation, though some went to Carlin Farms for a portion of the time (Clemmer 2009c:407-8). Poor conditions at the reservation caused many families to leave by 1882. These families returned to the Tosawihi Homeland and continued to hunt, gather, doctor, and collect chert there, and some sought wage labor in the vicinity to establish seasonal and long-term residence (Clemmer 1990:23).

The Duck Valley Reservation was enlarged in 1886 to accommodate Northern Paiute Indians (Inter-Tribal Council 1976:75-76). Tosawihi identity was maintained at Duck Valley, although over time personal associations with the land declined for some families. The merging of these two groups into the Sho-Pai of Duck Valley causes some concern at present for Shoshone descendents, since they are sometimes not considered by agencies as belonging to a Western Shoshone.

3.3.2.5 Historic Relationships to the Tosawihi Homeland

Some White Knife families found employment in their homeland. Clemmer (2009a:72-73, 1990:18) and Rusco and Raven (1992:12) reported hunting, buckarooing and haying for White ranches, ritual use of the area, chert collection, and plant gathering into the twentieth century. People from Duck Valley, Starr Valley, Deeth, and Fort Hall came down for this seasonal activity. Ranches where they worked included the Betty O'Neill, Eisenhood, Hadley, 25 Ranch, and Spanish Ranch, as well as an unnamed ranch at Midas (Clemmer 1990:14, 21; Tiley 2010a). Their familiarity with the landscape allowed them to supplement their income through traditional hunting and gathering activities. Newspaper accounts and oral traditions indicate that fandangos and other Indian activities continued to take place in the Tosawihi Homeland.

The Rock Creek area is used ceremonially, and also is a burial location. It was previously a winter camp. There are several springs in the area, around which historic Indian farms were located. Contemporary people also visit the Tosawihi Homeland for curing at hot springs and to collect willow for baskets, particularly along Willow Creek (Clemmer 1990:19-20).

Clemmer was told that Shoshone settlements and camps continued to be used in the Antelope, Rock, Rattlesnake, Boulder, and Willow Creek drainages until the late 1920s as farms and homesteads. The large farm on Antelope Creek and the Rock Creek settlement are located in areas appearing as villages on Steward's 1938 map.

The Indian farmers and ranchers faced challenges in an environment not wholly suited to agriculture, and many had to abandon these enterprises. Those who had enjoyed some success were

removed and sent to the Battle Mountain Colony, which was established in 1918. The land was subsequently purchased by non-Indians (Clemmer 1990:21).

3.3.2.6 Modern Locations

Today, Tosawihi descendents are found primarily at the Battle Mountain Colony and the Duck Valley Reservation. Tosawihi individuals may be scattered in adjacent locations, particularly Elko, Wells, and Ruby Valley.

3.4 Historic Period Overview

The EPP corridor is located in an isolated upland area that saw little activity during the early years of historic development in northeast Nevada. Fur trappers during the late 1820s and the early 1830s confined their exploits to the immediate Humboldt River bottom lands. This included expeditions by Peter Skene Ogden, John Work, and Joseph Walker. None of this activity occurred within the present study area. Likewise, the area did not see use associated with great transcontinental migrations that took place beginning in the 1840s and lasted through the late 1870s. These routes also were located along the Humboldt River. Subsequent development of the transcontinental railroad followed the same path.

While these activities did not have a direct impact on the study area, indirect impacts did occur. Prospectors fanned out from the heavily traveled Humboldt corridor, searching for new bonanzas. The discovery of ore reserves, especially those to the north of the Humboldt River, required development of new transportation corridors that linked mines to newly established stations along the transcontinental railroad. These activities also created a need for and opened the area to agricultural development. As a result, a historic overview of the EPP corridor can focus on three primary themes - nineteenth and early twentieth century transportation, early twentieth century mining, and ranching. There is no record of substantial settlement anywhere along the EPP corridor during the historic period. What settlement that did occur related mostly to mining.

3.4.1 Transportation

With regard to the present project area, the discussion of the transportation theme can be divided into two time periods. Nineteenth century routes in the area tended to be oriented north-south and facilitated the transportation of goods to or from the transcontinental railroad. Twentieth century routes in the project area tended to be much more local in nature and their orientation was resource driven. The one exception was an early alignment of the Victory Highway.

3.4.1.1 Nineteenth Century Routes

Even before the transcontinental railroad had made it into Nevada, a stage operation was put in place to connect the ever eastward-moving head of the line to lucrative markets in Nevada and Idaho. William Beachey, a regionally renowned stage operator, secured a contract with the Central Pacific Railroad to provide service through northern Nevada and into Idaho. From the Reno area, his line ran along the Humboldt River to Winnemucca where it turned north through Paradise Valley, to the Owyhee, and on to Silver City, Idaho. Beachey ran this line, known as the Railroad Stage Lines, from 1866 through 1870 when he shifted his southern base from Winnemucca to Elko.

The Elko & Idaho Toll Road was constructed in 1869 by Beachey. The road first ran between Elko and Mountain City, but was soon extended to Silver City, Idaho. Numerous stations were established along this line, including one known as Coryell's (or Dinner) Station.

Two prospecting adventures in northwest Elko County helped define local transportation routes in the vicinity of the EPP corridor. Placer gold was discovered at Tuscarora in 1867. Much of the placer operation was conducted by Chinese recently released after completing construction of the transcontinental railroad. In 1871, silver deposits were discovered but little development occurred. Silver and gold bearing ores were discovered at Cornucopia in the Bull Run Mountains north of Tuscarora in 1872. Cornucopia boomed through the early 1880s, but soon faded. Meanwhile, in 1876 silver deposits at Tuscarora began to be developed in earnest, causing that community to blossom. Its highest years of production were during the 1870s, but it continued to produce steadily through the turn of the century. For a time, Tuscarora was the largest community in Elko County.

All the excitement at Cornucopia and Tuscarora required that transportation routes be established. Winnemucca, Battle Mountain, Carlin, and Elko all vied to serve as the jumping off point for these roads. As noted by Patterson et al. (1969:657):

> People, freight, and mining equipment flocked to the new bonanza by the hundreds, in all types of vehicles, pulled by anywhere from two to sixteen-horse teams of all descriptions, and not a few ox teams. Merchants, lode miners, mechanics, carpenters, and many of many other professions came in with the rush."

During the early years, ore from Cornucopia was shipped to Winnemucca, travelling over a route that extended down the Little Humboldt River. Eventually, much of the traffic was via Elko. As early as 1870, a route was constructed that cut-off from the Elko & Idaho Toll Road just north of Dinner Station. This new route went first to Tuscarora and then north to Cornucopia. Stages operated along this line through the turn of the century.

This did not stop others from entering the fray. In 1872, a toll road was built that extended north from Carlin up Maggie Creek and along Taylor Canyon to where it tied into the cutoff from Dinner Station on the Elko & Idaho Toll Road, to Jack's Valley, Tuscarora, and Cornucopia (Goodwin 1966b:1). This route was still being used as a toll road as late as 1884 (Goodwin 1966b:1). Another road connected the Tuscarora mining district to the railroad at Battle Mountain. By the mid-1870s a toll-road had been established from Battle Mountain up Kelly Creek, Rock Creek, and Willow Creek and into the Owyhee River drainage area (Goodwin 1966a:4).

3.4.1.2 Twentieth Century Routes

In 1917, with the establishment of the Nevada Highway Department, segments of the old California Emigrant Trail and abandoned portions of the old Central Pacific Railroad grade began to be pieced together to form State Route 1 (The Lincoln Highway, the route of the first transcontinental automobile-oriented highway, located to the south, more through the center of the state, was designated as State Route 2). The original alignment ran from Montello along abandoned Central Pacific Railroad grade to Wells. During the early years, State Route 1 between Carlin and Dunphy extended north out of Carlin, up Maggie Creek, over Richmond Summit, down Welches

Canyon, along Boulder Flat to Dunphy, and then on to Battle Mountain and points west. This alignment had been in use for some time. During 1913, volunteers from Elko worked to improve the existing road through what was then called then called Carlin Canyon (Fawcett 2005:12). Construction along State Route 1 continued during 1918, but by 1919 at least half of the proposed route remained un-surveyed. With the backing of people in San Francisco, Reno, Lovelock, and other northern Nevada communities, about 100 miles of the State Route 1 were improved over the next few years.

The Victory Highway Association was organized in 1921 to find and mark a transcontinental highway to be dedicated to American servicemen that lost their lives in World War I. By 1922 the organization had chosen a route, which began in New York City and ending in San Francisco. As initially conceived, a bronze eagle marker was to be located at each county line with a plaque dedicated to those who sacrificing their lives served their county in World War I. The Victory Highway passed through a number of large cities as well as small towns on its route. In Nevada, it elected to follow State Route 1, which at that time included the Carlin Canyon segment.

In 1921, the federal government passed the Federal Highway Act. A similar act, passed in 1916, provided matching funds to the states for highway construction. Unlike the 1916 act, the 1921 act required the states to identify seven percent of its total mileage as "primary"; only these roads would be eligible for federal funds. A numbering system was established to organize federal highways across the country. In most states, the Lincoln Highway was the obvious choice as a "primary" road, but there were a few exceptions. Despite numerous reports and heavy lobbying by the Lincoln Highway Association, the federal government selected the Wendover route, or "Victory Highway," as the primary federal road across Utah and Nevada. In the early 1920's, the Victory Highway Association competed with the Lincoln Highway Association for east-west travelers across Nevada. The Victory Highway had a competitive advantage in that it followed earlier pioneer trails and the first transcontinental railroad route.

Major realignments occurred to the roadway in the mid-1920s, including one in the immediate project area. The Montello to Wells route was abandoned in favor of one that entered the state at Wendover and then went over Silver Zone Pass, the Pequop Mountains, and Wood Hills to Wells. This reroute shortened the distance between Salt Lake City and Reno by 107 miles (Patterson et al. 1969:172-173). Of greater immediate relevance, the alignment over the Tuscarora Mountains was replaced by one that extended through Carlin, over Emigrant Pass, through Dunphy, and on to Battle Mountain. Those segments of former State Route 1 that were cut off had only seen service between 1917 and 1925. After that date, these roadways returned to their original designation as local unimproved roads, or were abandoned.

The Victory Highway was re-designated as U.S. 40 in 1926. In 1940, U.S. 40 was designated a national defense highway, which gave it priority in terms of federal expenditures. The 1956 National Defense and Interstate Highway Act sealed the fate of U.S. 40 as a major national transportation corridor. With the construction of Interstate 80 during the 1960s and 1970s, U.S. 40 dwindled in importance. California decommissioned U.S. 40 in 1964, and Nevada followed suit in 1975. Although most of the road was absorbed by Interstate 80, many old alignments remain today. All of the I-80 business loops; Nevada State Routes 230, 396, and 427; and several locally maintained frontage roads are remnants of the old road.

3.4.2 Mining

Mining activity in the northern part of Eureka County does not appear to have commenced until the early years of the twentieth century. Initially, emphasis was on placer gold. Mineral production from districts in the immediate vicinity of the EPP corridor were sufficiently unspectacular as to not even receive a mention by Couch and Carpenter (1942).

EPP passes through the Lynn District, centered on ridges above and washes within the headwaters of the Lynn, Simon, and Rodeo Creek drainages. Other mining districts in the general area included the Bootstrap District to the north, the Ivanhoe District to the northwest, the Maggie Creek District to the southeast, and the Beaver District to the northeast. Going a bit further afield, one finds the Gold Circle District centered around Midas, and the Tuscarora District (Tingley 1992:13, 16, 34, 39, 44). The Lynn and Bootstrap districts make up a majority of what is now referred to as the Carlin Trend. The Lynn District includes portions of the Trend located in Eureka County, while the Bootstrap District includes portions location in Elko County. Information regarding the Lynn District will be summarized herein.

3.4.2.1 The Lynn Mining District

Early years of the Lynn Mining District were not well documented. Historic information regarding the place is much like the placer gold sought there - minute flecks of information dredged from volumes of fill. The following discussion regarding the Lynn Mining District is drawn from several technical sources, including Emmons (1910), Lincoln (1923), Smith and Stoddard (1932a, b, c), Vanderburg (1936), Roberts et al. (1967), and Bentz et al (1983). Most helpful, however, was a May 8, 1913 edition of the *Reno Evening Gazette* which contained a full-page article (page 6) regarding the Lynn District. That article provides a detailed snapshot of events in the district up to that date. Much of the finer grained information contained in the following discussion came from that article.

The Placer Workings

Placer deposits were discovered in the Lynn Mining District in April of 1907 by Joseph Lynn at a place that came to be called the Bulldog Placers (Emmons 1910; Lincoln 1923). The *Reno Evening Gazette* article provides two alternate stories as to the district's discovery. In the first, Joe Lynn was a ranch hand plowing ground for the Dunphy estate down below the mouth of Simons Creek when he found placer gold. He followed leads up Lynn Creek where he staked out five claims. In the second story, Lynn was actually out prospecting when he discovered the placer deposits in Lynn Canyon. On one point the stories agree, he promptly sold the claims for $100. Joe Lynn went on to discover the Buckhorn District southeast of Cortez during the winter of 1908-1909. The *Reno Evening Gazette* article notes that "more recently" (i.e., between 1909 and 1913), Lynn was working as a buckaroo and trapper in Eureka County. Aside from making the initial discovery and lending his name to the place, it does not appear that Joe Lynn played any part in the subsequent development of mining in the district. After Joe sold out, others moved in. Among this first group were:

- A. W. and George Arthur. A. W. Arthur stayed in the area and as of 1913 was superintendent of the Big Six Mine. His brother George owned a cattle ranch near Carlin and operated a stage line into the district. They owned 5 claims.
- J. W. Pruett of Carlin was an early owner of 5 claims.

- A Mr. Beller and a Mr. Maul of Carlin owned 2 claims.
- A group of men including Charles Kappler, Hughie Jones, R. S. Henderson, and Dick Royal also were early claim holders in the area.
- William Barney held a placer claim in Sheep Gulch.

In addition to workings along Lynn Creek, operations also were conducted in the Simon, Rodeo, and Sheep Creek drainages (Bentz et al 1983:129-135). The *Reno Evening Gazette* article describes the Lynn Mining District as triangular in shape, extending from upper Lynn Creek at the apex, to the Silver Top claim (in which Reno Senator Massey had an interest) as the second corner, and to the Top Notch claim (owned by Carlin men) as the third corner. The Top Notch was located in the SW 1/4 of Section 22, T35N, R50E. The exact location of the Silver Top claims is not know. Based on casual examination of topographic maps of the area, a shaft and adit in the SW quarter of Section 24, T35N, R50E may represent the Silver Top. As with most other districts of the day, the boundary of the Lynn Mining District seemed to be ever changing, depending on the day's discoveries, convenience, and, sometimes, the time of day. The *Reno Evening Gazette* article noted the following shenanigans related to the location of claims:

> "There is a curious incident about the Buster B [claim]. New Year's eve, Dick Royal located it by 'fast time' or mountain time, which is an hour earlier than 'slow time' or Pacific time which Barney used in locating the claim."

Photographs taken in the 1930s (Figures 6a and 6b) depict placer operations typical of the time and place. The placers were worked regularly using small-scale equipment such as power rockers, sluices, and similar equipment. The placer was concentrated on the bed rock and was then worked using a rocker. The fine gold was caught on aprons of carpet, and below them aprons of canvas. A small proportion of the placer gold worked through to a series of riffles which were cleaned once or twice a week. The carpet aprons were cleaned every few hours and the canvas about twice a day. According to Roberts et al (1967:95):

> "Placer operations [in the Lynn District] are handicapped by the lack of water. Sluice boxes generally are used during the spring, when surface water is available, and dry-washing machines are employed during the remainder of the season, which lasts six to seven months of the year."

In the Lynn District, the riches gravels were at the upper end of ravines, where the gold was coarse and rough. Smaller gold particles, associated with abundant black sand, occur in lower portions of the ravines. In general, the gravel channels were narrow, shallow, and tended to be covered by barren slope wash material.

A group of claim blocks were present extending east down Lynn Canyon. As of 1913 The Lynn Creek Placers, the upper most claim block, were owned by the Kappler brothers. Next down the canyon were the three Bulldog placer claims owned by Pedro Orbe. He bought the claims in 1910 for $1,000. Since then, Orbe had recovered what the *Reno Evening Gazette* referred to as "a small fortune." The first year, he took out $6,400 worth of gold, and in the second year with partners Eugenio Garcia and Domingo Zabala, he took out $8,000. This included a nugget of almost pure gold that "at this time [1913] dangles from the watch chain of C. P. Farnsworth who is interested in the Big Six and the Lynn Gold Mining Company." As of 1913, Orbe had seven men working the

claims. From the article, it appears that Orbe lived in a dugout on his claims. In upper Lynn Canyon the placer gravels averaged about 25 feet in width and ranged from 10 to 28 feet in depth. Gold was largely concentrated in 4 feet of gravel above bedrock; depth to bedrock averaged about 15 feet. The author of the *Reno Evening Gazette* article noted that one of the area's miners:

> "He [Orbe] led the way to the point where his workmen had cleared off the top soil down to bed rock ... Over a considerable territory, placer gold, a great deal of which was quite coarse, was fairly peppered. One could see it anywhere by pulling aside bits of rock which concealed crevices."

Emmons (1910:88) noted that:

> "Several placer claims are located in gulches which drain eastward from the Big Six and Gold Dollar mines [Lynn Creek Canyon] and at a number of places the gravels carry placer gold. On the Hilltop Claim, belonging to Hugh Jones, a block of gravel 60 ft long, 8 ft wide, and 5 ft deep yielded $150. During the summer of 1907 about $1,000 was taken from this gulch."

Several placer claims were located toward the west edge of the hill that separates Lynn and Simon canyons. Three claims on the south side of the hill, known as the Bunker Hill group, were owned by men named Hunter, Banks, and Moody. Those on the north side of the hill were owned mostly by Pedro Orbe. Of passing interest, Patterson et al. (1969:302) mention Pedro Orbe as a part owner of the Telescope Hotel in Elko. Other part owners were Francisco and Julianna Goicoechea and Martin Inda. Although the timing is somewhat uncertain, it would appear that this was sometime between 1908 and 1912.

Another group of claims on the north side, the Button group, was partially owned by Mart Johnson. He is best known in Reno as the owner of The Palace, "probably the most famous of the old refreshment and gambling houses." Johnson's life story is quintessentially Nevadan. Raised in Elko, his father was involved in the staging business. Mart participated in the stampede to Alaska and on his return ended up in Reno where he oversaw the reconstruction and operation of The Palace. He then headed toward the glitter that was Tonopah and Goldfield. As of 1913, he owned and operated the Midway in Goldfield. When he saw that Salt Lake money was coming to the Lynn Mining District, Johnson thought he saw a boom in the near future. In anticipation, he bought into the Button group of claims.

Sheep Gulch claim blocks also ran the length of the canyon. The upper claims were owned by William Barney. Barney was born in Virginia City and resided in Goldville with his wife and three daughters. His brother George Barney held the next claim in Sheep Gulch. The lowest of the Sheep Gulch claims was owned by Hughie Jones, who as of 1913 had held his claims for 6 years. Jones was a notary public and the district recorder. It is said he has taken between $7,000 and $8,000 out of the claim in gold. In Sheep Creek canyon, the gravels ranged from 25 to 40 feet wide and the pay streak was within a 1 to 2 foot thick layer lying on bedrock. Overburden was 4 to 8 feet in thickness. The Sheep Creek placers routinely yielded from 150 to 250 ounces of gold per year (Vanderburg 1936:87).

It appears that little work was ever done in Simon Canyon, or along Rodeo Creek. The *Reno Evening Gazette* article makes reference to a limited amount of prospecting in Simon Canyon by

Henry Ross (deputy sheriff), Guy Chase, Charles Thomas, Harry Bovina, and James Jones. The implication was that this work was limited and recent. Work along Rodeo Creek appears to have been restricted to the upper most reach.

In summary, the Lynn Mining District saw intermittent, low level development, primarily of placer deposits, through the 1930s. Underground operations were carried out at a few locations but without great reward. Barite was mined in the 1930's and 1940's from vein occurrences on Popovich Hill. Placer mining never really left the district, but returns were never what they had been. For example, In 1952 the Ura Gold Mines Company worked gravels located at the mouth of Lynn canyon. Here the gravels were about 9 feet deep, 180 feet wide, and averaged about $0.44 to $1.00 in gold per cubic yard. The gravels were processed through a trommel screen mounted on a self propelled drag line. Under sized material was processed through sluice boxes and the concentrate was further refined by hand panning (Roberts et al. 1967).

The Big Six Mine

William Barney and R. S. Henderson were among the first to locate in the area immediately surrounding the original placer ground located by Joe Lynn. They located the Compromise group of claims and the Big Six claim. In 1907 they began excavations at what they called the Big Six Mine (Figure 6c), the only sizable mine developed during the early days of the district (Lincoln 1923). That year they shipped $21,000 worth of ore to Salt Lake City smelters. How mines got their name is often of interest, but seldom does one ever derive their meaning. With the Big Six we have an exception. The *Reno Evening Gazette* article noted that:

> "It has been supposed that the Big Six took its name because six partners were interested in it, but the fact of the matter is that it was named after a tent. Years ago Henderson was a member of the Iowa National Guard and with five other strapping militiamen slept in a tent which was named and labeled 'Big Six.' The mining claim was named after that army tent."

The Big Six Mine saw sporadic development during the early years. Always seen as a hot property, it changed hands often. In 1912, the Lynn Big Six Mining Company, under the direction of Henry Hanker, reopened the Big Six Mine (Hall n.d.). Dick Royal soon took an option on the Big Six and in early 1913 the option was taken up by the Free & Wire Gold Mining and Milling Company out of Salt Lake City, Utah. The *Reno Evening Gazette* article noted that as of 1913 a mill had yet to be constructed at the Big Six Mine, but this was under consideration. Beginning in 1914, the Big Six began to take on something of a corporate look. George Arthur, the superintendent of the Big Six Mine at the time, began purchasing surrounding claims - "the Arthur company and the Big Six crowd have take over quite a number of other properties in the district recently" (*Nevada State Journal* May 17, 1914).

At some point, the Lynn Big Six Mining Company took possession of the Big Six Mine and in 1917 the Company built an amalgamation mill on the site. By 1922, the Lynn Bix Six Mining Company controlled 220 acres under 12 claims. They also established an 800-foot deep tunnel mine, the Gold Dollar, and expanded the mill twice, first to a 50-ton capacity and later to a 100-ton capacity. By 1925 the company had 36 claims and controlled 402 acres. However, after producing only $225,000 of ore, the Lynn Big Six Mining Company gave up their claims in 1926 (Hall n.d.).

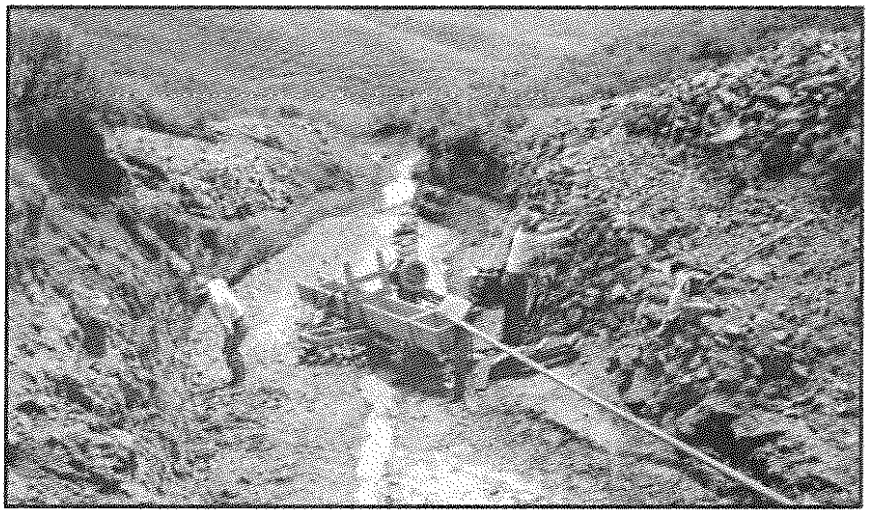

Figure 6a. Sheep Canyon Placer (Smith and Stoddard 1932a:Figure 4).

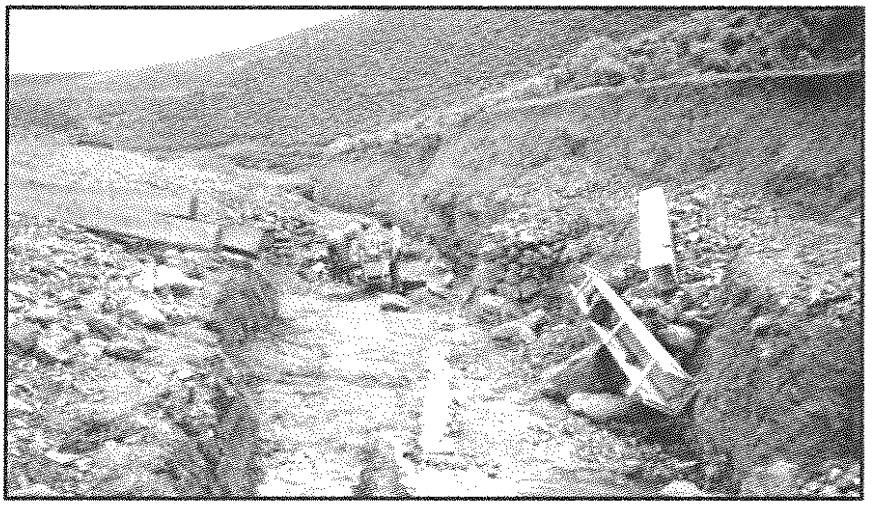

Figure 6b. Bull Dog Placer (Smith and Stoddard 1932b:Figure 11).

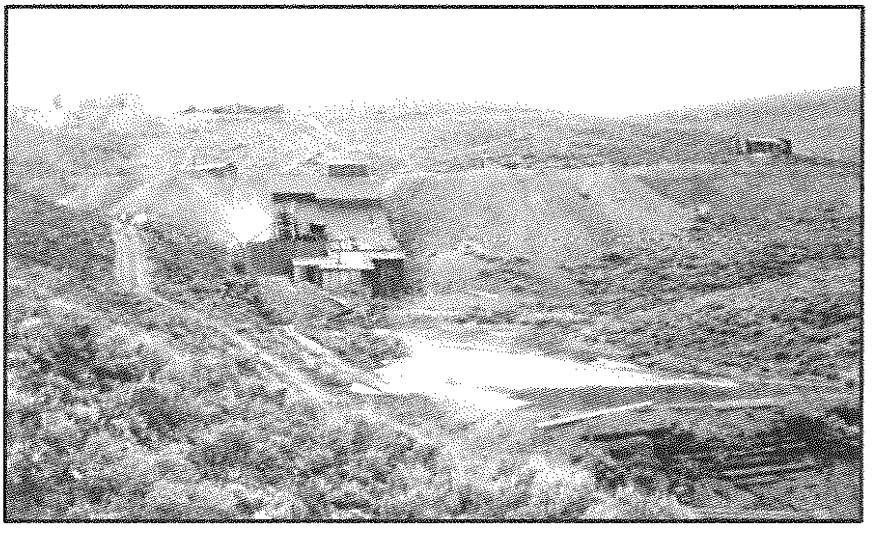

Figure 6c. The Big Six Mine (Smith and Stoddard 1932c:Figure 13).

In 1937 the Beaver Crown Consolidated Mining Company took over operations in the area. Although the company dug three new tunnels (i.e., the Talbot, the Mill, and the Bull Moose), the ore recovered was of poor grade and the company ceased activity (Hall n.d.). As of the mid 1930s, on-site development consisted of the 1,400-foot long Talbot adit, the 800-foot long Mill adit, the 700-foot long Bull Moose adit, a 300-deep shaft, and other workings totaling about 5,000 feet. A blacksmith shop and several camp buildings also were present (Smith and Stoddard 1932c:50). Since 1937 the property has been operated mostly by lessees.

Aside from the Big Six, very few underground mining operations made a showing in the early years of the Lynn District. The Blue Wing, or Bullion mine was located about 2 miles southwest of the Big Six, at the very head of the Little Boulder Basin (perhaps in the SW 1/4 of Section 10, T35N, R50E). As of 1913, the mine and 7 claims were owned by the Danley & Lloyd Mining Company with offices in Salt Lake City. The Top Notch block of 14 claims was owned by Carlin men, including A. H. Berning, president; James Rutledge, vice president and assayer; T. F. McKenna, secretary an treasurer; and Joe Smith, director. W. H. Woodruff of Carlin was the resident agent. The property yielded silver and lead ore, some amount of which was shipped out via Beowawe. The Silver Top consisted of 7 claims was owned by William Willard, Mr. Simpson the property manager, Mr. Lodge, and former U.S. Senator W. A. Massey of Reno. While assays looked promising, the property required construction of a road, and very hard country rock was encountered. While these properties looked promising in 1913, it is unlikely that anything further came of them. Somewhat later, in the 1930's and 1940's, a small amount of barite was mined from veins on Popovitch Hill.

Goldville and Other Settlements

The camp of Goldville, located in the northwest quarter of Section 13, T35N, R50E, came into existence as a result of the 1907 boom. By the end of 1908, however, the excitement had subsided and Goldville was deserted by all but about a dozen miners who remained to develop their claims (Emmons 1910; Hall n.d.). The 1910 U.S. census includes a location identified as the Lynn Precinct. In all likelihood, this reflects the camp of Goldville. Twenty-one people are listed as present in the precinct, living in eight households.

- Andrew [Dick] Royal was listed as a prospector.
- Melville A. Court and his wife Susie. Court was listed as a prospector.
- William E. Barney, his wife Eliza (Millett), and three daughters - Rachel, Zora, and Margarite. Barney was listed as having a placer claim.
- Edward Stack, Clarence Hartman, Jerome Mohan, and James Clark lived together. All four were listed as prospectors.
- Hugh Jones and his son Hugh Jr. lived together. Hugh Sr. was listed as having a placer claim, while Hugh Jr. was listed as a prospector.
- George T. Barney, his wife Helen, and their daughter Helen. George was listed as a prospector.
- Charles Moody and Joseph Schmitt roomed together and both were listed as prospectors.
- Pedro Orbe and his brother Pete lived together. Both were listed as working on a placer claim.

Of interest, in 1899 brothers William and George Barney were among the early prospectors and claimants of mineral deposits in Deer Lodge, Eagle Valley Mining District, Lincoln County. As of 1900, their widowed mother and another son also lived in that early camp. Melville Court and Charles Moody also participated in the rush to Deer Lodge at the turn of the century (Zeier & Reno 2012). It is likely that these individuals formed part of a loose social network, passing along information and experiences as they moved about the state. When William Barney saw what he thought to be a good prospect, he passed the word and others came to see what all the excitement was about. Although largely undocumented, the mining industry in Nevada was made up of innumerable social networks, large and small, be they at the corporate level, the level of the common miner, or of the grocer. It was as if a large amorphous group of entrepreneurs, workmen, and tradesmen existed, some subset of which would coalesce at a point in time and space, only to dissolve when the job was done.

The camp at Goldville stabilized and a post office opened on July 22, 1913 with William Barney as the postmaster. The *Reno Evening Gazette* article noted that as of 1914 Goldville consisted of half a dozen buildings, one of which appears to have been a saloon, the Big Six, which was partially owned by C. P. Farnsworth. After only four years, the post office closed. In that year, a mill had been constructed at the Big Six mine, but had failed to produce at the expected level. The blush was off the rose, and most moved on.

Surveyor's notes from the 1914 survey of T35N, 50E indicate that William Barney and his family were the only ones living in Goldville at the time. Others "only live there temporarily while working on mining claims in the vicinity." It is possible that the surveyor was in Goldville during the "off" or dry season when surface waters were not present and placer miners were elsewhere. The surveyor's notes also make reference to the "settlement at Lynn Creek" located in the NE 1/4 of section 12 which was comprised of about 7 frame houses occupied by about 25 inhabitants. Most likely, these "inhabitants" were engaged in mining activities at the nearby Big Six Mine. The only other settlement noted in the township consisted of five settlers (C. Berning, his wife and daughter, and two partners). The men were working the Top Notch Mine in the SW 1/4 of Section 22.

As of 1913, the *Reno Evening Gazette* reports that the Lynn Gold Mining and Milling Company owned six claims located one mile north of the Big Six Mine. C. P. Farnsworth was the manager of the company which was owned by Salt Lake City, Utah, interests. A ledge ran through the claims which appeared to be a northern extension of the ledge being worked at the Big Six.

The Lynn District never really experienced the prosperity or notoriety seen by other historic mining districts in Northern Nevada. The district's greatest claim to fame had been its placer deposits, which made up a bulk of the production during much of the district's existence (Lincoln 1923). Placer deposits in the district continued to be worked after 1937, but with only limited results.

Discovery of the Carlin Trend

John Livermore played a central role in the discovery of the Carlin Trend in northern Nevada. After reading the article by Ralph Roberts (1960) entitled *Alignment of Mining Districts in North-Central Nevada*, Livermore set out to test Roberts' theory. Guided by Roberts' ideas, Livermore and Alan Coope, began an intensive search for "invisible gold." Several such deposits had been discovered in northern Nevada previously, including some in the Maggie Creek area near Carlin (Coope 1990:6). Livermore and Coope began their search at the Blue Star Mine. Initial results were

favorable and they recommended development. Unable to conclude a successful agreement, they redirected their attentions to Maggie Creek. Mapping and sampling led to the identification of the Maggie Creek and Carlin prospects. Success came quickly. In October 1961, they staked claims on the southwest side of Popovich Hill, about 1 mile south of the old Big Six Mine and near the old Goldville townsite. Open pit mining began at what became known as the Carlin Mine in April 1965 at a rate of 2000 tons per day (Coope 1990:15) and was economic even though at that time the price of gold was set at $35 per ounce.

The discovered of the large Carlin disseminated gold deposit was one of two events that set off a sequence of gold exploration and discovery events statewide that continues to the present. The second was the demise in 1971 of the Bretton Woods Monetary Agreement. With its demise, the price of gold was allowed to fluctuate based on demand. Gold prices began a steady rise that improved the marketability of disseminated gold deposits.

Discovery of the Carlin deposit represented one of the most significant events in worldwide mining and in the history of Nevada. Because of the extremely fine grain size of its gold particles, few gold deposits of what would later be known as the Carlin type had been noted. Their significance was not recognized until the Carlin discovery in 1961 and the opening of the Carlin mine in 1965. The discovery of additional deposits has made the Carlin Trend into one of the premier gold fields of the world. The Carlin Trend and other similar deposits have made Nevada the leading gold-producing state, and have made the United States a major gold-producing country.

3.4.3 Ranching

Farmers and ranchers began settling along the Humboldt River basin in the early 1860s. As small, isolated mining camps were established, local farming and ranching operations expanded into these areas to supply the mining camps with meat and hay.

With completion of the transcontinental railroad, all of northern Nevada was opened up to use by large range livestock operations. The availability of the railroad and severe droughts in the early 1870s prompted many California ranchers to look for alternate winter range (Bowers and Muessig 1982:79). Many chose northern Nevada as a prime location. As stated by Bowers and Muessig (1982:106), "Farmers and ranchers were central Nevada's first real settlers - people who came to invest their lives and fortunes in the long-term proposition of agriculture and livestock raising."

Cattle ranching grew in importance during the 1870s and 1880s throughout northeast Nevada. Railroads offered outlets to local and national markets. Cattlemen responded by turning out larger herds and by the 1870s virtually all water rights were taken up by ranchers. By the end of 1873 ranges in Elko County and surrounding counties were fully stocked and pastures were already suffering deterioration due to over grazing (Patterson et al. 1969:214). But, severe winters in 1879-1880 and 1889-1890, wiped out as many as 90% of the animals in some places. Many outfits never recovered from their losses and those that did began winter feeding as a common practice. Cattle were brought in off the range to winter over where they could be fed. Ranchers began plowing, planting, and mowing feed crops such as hay, barley, and alfalfa. They also began developing irrigation systems intended to increase the yield of their feed crops (Bowers and Muessig 1982:107). Ranching remained viable through World War I. Bad weather, poor hay crops, and the collapse of regional banks had a pronounced impact on ranching in northeast Nevada during the Depression and the number of

cattle on the range dropped substantially. Increased government involvement, as administered by the Forest Service and the Grazing Service, also affected grazing operations through the establishment of an allotment system and a need to manage public lands to accommodate multiple uses.

Several major cattle ranching operations appear to have made use of the general study area over time. The Jenkins Company started out in the mid 1870s as a one-man sheep operation. By the mid 1880s, W. T. Jenkins owned 2,200 sheep (Goodwin 1966:14). Headquartered in Battle Mountain, he ran a tramp operation that ranged throughout Pershing and Humboldt counties. With time, he began to develop a land base, creating extensive livestock holdings. By 1891, Jenkins ran one of the largest sheep operations in Nevada, with flocks numbering some 25,000 head. From south of Battle Mountain, sheep were trailed north and lambing occurred at Rock Creek, Antelope, Ivanhoe, and sometimes at St. Johns, a large field enclosed with 40 miles of fence (Patterson et al. 1969:340, 374). Jenkins died in 1892 and his wife Edith ran the operation until her death in 1918. At that time, their daughter Louise and her husband Ernest Marvel took over operation. In the mid-1910s, operations began to place a greater emphasis on cattle. In 1949 the company took over the old 25 Ranch. At that time, it owned or controlled over 289,000 acres, including the former T S Stampede Ranch along upper Maggie Creek and the L. H. St. John Ranch on upper Willow Creek (Goodwin 1966:14). Eventually, Louise and Ernest Marvel turned over operation of the ranch to their three sons.

Dr. George Grayson began development of his cattle empire, which came to cover some 200,000 acres in Elko, Eureka, and Lander counties, in the early 1870s. This included the Horseshoe Ranch on Maggie Creek north of Carlin. In 1890 the various Grayson holdings were sold to the Humboldt Land & Cattle Company who operated out of Eureka (Goodwin 1966:12). Grayson and his son remained in effective management of the operation. In 1936 the property passed to Dean Witter, the San Francisco financier (Goodwin 1966:13). In 1950 Witter sold out to Baldwin Baldwin, a descendent of "Lucky" Baldwin, a famous California financier (Patterson et al. 1969:334).

In the early 1870s, William Dunphy and his partner Thomas Hildreth began a cattle operation in the Rock Creek area. They flooded small acreages to raise wild hay while their cattle ranged along Rock Creek and Boulder Creek. Over time, Dunphy fenced over 20,000 acres where he developed native meadows through irrigation. Cutting hay to feed cattle was uncommon in these early years. By acquiring private, state, and federal lands, they came to control over 30,000 acres in Elko and Lander counties (Patterson et al. 1969:408). Non-resident owners, both Dunphy and Hildreth resided in San Francisco where Hildreth, a butcher by trade, may have run their wholesale meat packing plant. By the late 1870s Dunphy had bought out Hildreth's interest and continued to increase his holdings. His best known operation was the T Lazy S Ranch, later known simply as the T S or Stampede Ranch. After Dunphy passed away, his once large holdings began to be divided. Operations remained in the family until 1937. In 1984 the T S Ranch was purchased by Newmont Mining Company, which now operates it as the Elko Land & Livestock Company.

The 25 Ranch (Goodwin 1966:13) was located along the Humboldt River near Battle Mountain. It appears to have become prominent in 1897 when it was purchased by George Russell. In need of summer range, Russell purchased St. John's Field and enclosed it with 40 miles of fence. About 1,000 head of livestock were summered in St. John's Field and returned to the 25 Ranch in the fall (Patterson et al. 1969:374). The first day of the drive they were driven to Santa Reina, next day to Izzenhood Ranch, and then on to the 25 Ranch. After George Russell's death in 1924, operation of the 25 Ranch went to his son who continued operations until his death in 1943. At that

time, the 25 Ranch was purchased by the W. T. Jenkins Company, then operated by Louise and Ernest Marvel.

Another aspect of the livestock industry centered on the herding of sheep. From the 1850s through the turn of the century, large herds of sheep had been moved through Nevada, headed either west to California or east to market. Over this period, perhaps as many as 15 million sheep crossed Nevada (Patterson et al. 1968:264-265). Simultaneous with the trailing of sheep, small local flocks were established. Beginning in the 1870s, permanent herds of sheep were present in northeast Nevada for at least part of the year. Often, flocks were moved north and south on a seasonal basis. Small bands owned by W. W. Williams of Churchill County, Thomas Nelson and W. T. Jenkins of Lander County, and John G. Taylor of Pershing County came from base camps near Elko and spread out over the Tuscarora and Independence ranges. By the end of the century, each had built a major sheep empire. Major operations of the time purchased land and were careful to rotate usage of summer and winter range. Certain attributes of sheep enabled them to survive harsh conditions better than the cattle. In response to the harsh winters of 1879-1880 and 1889-1890, many cattle ranchers expanded their business to include sheep.

In 1902, a report was issued that spoke favorably of the region's potential as summer range for sheep (Patterson et al. 1968:288-291). As a result, a number of transient or "tramp" sheep outfits moved into the higher elevation ranges throughout Elko County. These outfits invaded areas used by local flock owners and cattle ranchers alike. So many transient sheep were brought into the region, as many as 20,000 head per year, that rangeland conditions declined markedly (Goodwin 1966b:4).

During the first decade of the twentieth century, Elko led the state in sheep production (Patterson et al. 1968:293). The sheep market rose during World War I, but declined soon thereafter. Prices had begun to rise in the 1920s, but fell again with the onset of the Depression. The Taylor Grazing Act of 1935 brought about a profound change in the sheep industry. Over the next several decades, the number of sheep in Elko County and the state as a whole dropped substantially.

4.0 Historic Context

4.1 Prehistoric Period Context

Recently, Cannon (2010) prepared a research context for prehistoric archaeological resources in the Little Boulder Basin. Cannon identifies five research themes: 1) chronology, 2) site formation processes and paleo-environment, 3) subsistence, 4) site structure and function, and 5) lithic source use, technology, and mobility. While the Little Boulder Basin context is based on a robust data set, it is focused on a specific area and on the identification and examination of a specific type of subsurface deposit. Because the present study area is so near the Little Boulder Basin, we place primary emphasis on use of the context prepared by Cannon.

4.1.1 Chronology

Cannon and Johnson (2010:58-132) provide a detailed analysis of recent studies that relate to the Chronology theme, especially as it applies to the Little Boulder Basin and surrounding areas. That analysis lead to conclusions regarding the occupational history of the area, and to methodological conclusions regarding chronological studies.

The distribution of radiocarbon dates in the area suggests that sustained human occupation began around 3200 BP and continued without major interruption through the period of Euro-American settlement. Projectile point evidence suggests sporadic use of the area prior to 3200 BP The available data suggest that humans use of the area was quite limited until well into the late Holocene. Most radiocarbon dates from the study area fall after 650 BP, suggesting that human population density and/or the length of seasonal occupations was greater during the Eagle Rock phase. On the other hand, Eagle Rock Phase projectile points are far outnumbered by other late Holocene point types, especially those dating to the Maggie Creek Phase. This apparent contradiction between the radiocarbon and projectile point records may indicate that the way people used the area changed at around 650 BP. It remains unclear whether human use of the area was more intensive during the Maggie Creek Phase or during the Eagle Rock Phase.

Only a small proportion of previously excavated assemblages, about one quarter, can be identified as single component. The far more "typical" site or site locus contains evidence of occupation during two or more phases. Of the single component assemblages, by far most date to the Eagle Rock Phase. Very few date to the Maggie Creek Phase, and no single-component assemblages date to the James Creek, South Fork, or Pie Creek phases. One reason many previously excavated sites and site loci cannot be identified as single component is that they lack sufficient dating potential. For sites or loci to have substantial research potential, they must offer a robust suite of radiocarbon samples, diagnostic artifacts, and/or obsidian specimens for hydration analysis. Sites that lack sufficient dating evidence should be considered as having low research value.

Analysis of potential predictor variables showed that the number of archaeological features found at a site or site locus correlates highly with the potential of identifying single-component deposits. This is because features are more likely to provide abundant and diverse dating evidence. So, which variables enhance our ability to predict whether a site or site locus will contain archaeological features? Ground stone artifacts and ceramics appear to be indicative of the presence

of features. Sites and site loci located in certain kinds of settings, particularly in hilly areas where soils of the Chen-Pie Creek-Ramires association are present, also appear to have a greater chance of containing features.

Given this summary, Cannon and Seddon (2010:310-311) developed the following set of research questions related to chronology:

- Do inferences about the chronology of occupation at specific sites or site loci change when projectile points are re-classified using a consistent, explicit, and well-thought out typological system? What new information about temporal and/or functional relationships among point types emerges from such an analysis?
- How might the Paradise Valley obsidian hydration chronology for the area change with the addition of data from a larger sample of projectile points? Can hydration measurements discriminate among the phases of the Middle Archaic with larger samples?
- Are ceramics in the area truly diagnostic of the Eagle Rock phase? Are earlier ceramics, particularly Fremont or Fremont-age ceramics, present in the area?
- Can we continue to improve our ability to identify single-component occupations?

Data needs for addressing these research questions are as follows. Documented associations between projectile points and other datable materials are critical. To further refine the Paradise Valley obsidian hydration chronology for the area, hydration analysis of additional projectile points is necessary. Additional analyses of ceramics are needed. Ceramics are loosely associated with the Eagle Rock Phase based primarily on typological grounds. A clear association between ceramics and datable features is a primary data need. Evaluating the age of pottery would improve the utility of ceramics as a chronological indicator. There is a need to identify and study single-component deposits that date to the Maggie Creek and earlier phases. Efforts should focus on locating deposits that appear likely to provide abundant dating information. Deposits with sparse artifact assemblages and deposits that lack subsurface archaeological features are unlikely to provide such information.

Cannon and Seddon (2010:311) conclude that a sufficient number of multi-component sites have been excavated and that anything that can be learned from such sites can be learned from those already excavated. They also conclude that a sufficient number of single-component Eagle Rock phase assemblages have been recovered. They suggest that excavation of additional single-component Eagle Rock phase sites or site loci is warranted only when they can provide unique information not already available in existing assemblages.

4.1.2 Site Formation Processes and Paleo-environment

Cannon (2010:133-141) provides an assessment of previous research into site formation processes and paleo-environment that has been conducted in the Little Boulder Basin area. The little work performed to date has been geo-archaeological in nature. This work shows that, in most geomorphological settings, archaeological deposits are shallow and lack stratigraphic distinctions. This contributes to the fact that most archaeological assemblages in the area take the form of blended, multi-component sites.

Because paleo-environmental data are so limited, the collection of any such data would advance our understanding of past environments. Paleo-environmental data that may be available in

the area, include packrat middens, spring or other wetland sediments, and paleontological animal bone assemblages. Results of any such paleo-environmental studies should be compared to studies conducted in nearby parts of the Great Basin (e.g., Louderback and Rhode 2009).

Remote sensing may be a useful means of assessing subsurface archaeological potential. A test case using remote sensing would be useful as a means of evaluating what geophysical signature, if any, archaeological features of various types might have. Such a test would ideally involve a site or sites with as many of the following characteristics as possible: 1) archaeological features or direct indications of features such as fire-cracked rock, 2) artifacts often associated with archaeological features, and 3) surface sediments that result in minimal background noise and "false positives." Remote sensing anomalies observed in test cases should be "ground truthed" through excavation.

Major floodplains have the greatest potential to contain middle Holocene or earlier buried archaeological material. Locations containing such deposits should be identified. Deep testing in floodplain settings would resolve questions of whether early archaeological materials are present in buried contexts and whether stratified, single-component occupations are likely to be present.

Most known archaeological deposits in the area are shallow. It would be worthwhile to determine the extent to which these shallow deposits can be or have been affected by modern land management practices.

Given this summary, Cannon and Seddon (2010: 311-312) developed the following set of research questions related to site formation processes and paleo-environment:

- Does the area have unique paleo-environmental characteristics that might help us better understand the prehistory of the area?
- What techniques and factors would increase the utility of geophysical remote sensing for finding sites and features?
- Are deeply buried sites located along or in a floodplain setting?
- How have the shallow archaeological deposits that characterize the area been affected by modern activities such as drill seeding?

4.1.3 Subsistence

Cannon et al. (2010-142-208) provide an assessment of previous subsistence-related research conducted in the Little Boulder Basin. Zoo-archaeological research has been limited due to poor preservation of faunal materials at open sites. In spite of this limitation, faunal remains have proven useful in testing hypotheses about foraging efficiency and related issues. Larger samples, especially from Middle Archaic contexts, would be useful in testing temporal patterns and spatial variability in faunal assemblages (e.g., Hockett 2005). Also, additional pre–Eagle Rock Phase faunal assemblages would help studies regarding patterns in vertebrate richness. Finally, additional data are required to further evaluate whether patterns in the faunal data truly reflect variability in foraging efficiency (e.g., Broughton 1997; Cannon 2003; Nagaoka 2002; Ugan 2005).

As with faunal remains, macro-botanical remains have proven useful in evaluating hypotheses about changes in diet breadth, but available samples are too small for the results to be statistically significant. Larger samples would be helpful. In addition, developing an understanding of

spatial variability within the area would be useful. Finally, it would be worthwhile to conduct a detailed comparison of temporal and spatial variability in macro-botanical assemblages relative to faunal assemblages to determine if patterns are present that speak to the sexual division of labor (e.g., Zeanah 2004).

Analysis of ground stone tool assemblages indicates greater investment in milling technology during the Middle Archaic Period and the Eagle Rock Phase, as evidenced by intentional shaping to increase milling efficiency. Future research should develop information regarding the relationship between increases in milling efficiency and exploitation of plant resources. Larger assemblages of ground stone, particularly from the Maggie Creek Phase, would be helpful. Finally, it has been argued that ground stone, ceramics, and some types of thermal features represent a technological complex designed for the processing of low-return seed resources (Bright 1998). It would be worthwhile to evaluate whether these things do, in fact, typically occur in tight spatial association.

Few ceramics have been recovered from sites in the area and even fewer can be assigned to single-component, radiocarbon-dated occupations. Currently available evidence suggests that ceramics were not manufactured in the area before about A.D. 1300. However, because this evidence is so limited, ceramic chronology in the area is poorly understood. More ceramics from dated, single-component contexts are needed to further explore the role of ceramics in subsistence strategies.

Cannon et al. (2010:192-200) examined two hypotheses related to thermal features. The first was that features with thermally altered rocks are associated with large mammal remains, whereas features without such rocks are associated with small mammal and plant remains. The second was that the frequency of features without thermally altered rocks increased over time. In contrast, the density of thermal features, regardless of type, appears to track other subsistence-related variables quite closely. Further research into the precise uses of thermal features in the area is relevant. Other research topics focus on whether thermal features were used for purposes other than those related to subsistence, specifically for heat treatment of lithic resources. Another topic might be whether the amount of rock and the degree to which it has been altered relates to length of site occupation.

Given this summary, Cannon and Seddon (2010: 312-314) developed the following set of research questions related to subsistence:

- With larger sample sizes, are there statistically significant differences in vertebrate taxonomic richness among time periods?
- Are changes in mean utility or some other economic measure related to artiodactyl body part representation consistent with the evidence for variability in foraging efficiency that is provided by artiodactyl taxonomic relative abundance? Do patterns in artiodactyl age structure suggest that hunters experienced resource depression?
- Does the intensity of bone processing increase as foraging efficiency declined?
- Is there spatial variability in faunal assemblages within the area that is understandable in terms of the geographic distribution of different types of resources and/or different functional site types?
- Are there statistically significant differences in plant taxonomic richness among time periods?

- Is there spatial variability in macro-botanical assemblages within the area that is understandable in terms of the geographic distribution of different types of resources and/or different functional site types?
- What do patterns in floral and faunal data suggest about settlement patterns in light of the division of labor model presented by Zeanah (2004)?
- With larger sample sizes, does the degree of investment in milling technology exhibit temporal patterns that are consistent, in light of the tech investment model, with those observed in faunal and floral data? How about when mano length is considered in addition to degree of shaping?
- Why are the majority of the ground stone milling tools from the area relatively informally shaped ("expedient"), even from time periods when other lines of evidence suggest that the amount of time spent using them was relatively high?
- Are there differences in the functional types of ground stone tools present in Middle Archaic, Maggie Creek, and Eagle Rock occupations? What do the types of ground stone tools indicate about activities performed during these occupations?
- When do ceramics first appear in the archaeological record in the area? Are ceramics present in Maggie Creek (pre–A.D. 1300) occupations, and, if so, what is their relationship to "Fremont" ceramics that are present elsewhere in northeastern Nevada (e.g., Hockett and Morgenstein 2003)?
- Do ceramics typically occur in close spatial association with milling tools and small thermal features?
- Does investment in ceramic technology change over time? Are grayware ceramics truly present at area sites?
- Where were clay sources located and how does the distribution of sites with ceramic artifacts relate to the distribution of those sources?
- How does the distribution of sites with ceramics inform on settlement patterns in light of the division of labor model presented by Zeanah (2004)?
- What types of food resources were processed in thermal features? Do associations exist between specific feature types and specific resource types? Are there temporal or spatial patterns in the types of resources processed in thermal features?
- Are there ways in which thermal features used for heat treating lithic materials can be distinguished from those used for processing food resources?
- Are there associations between fire-cracked rock attributes and independent indicators of mobility/occupational duration?
- What caused changes over time in subsistence-related aspects of the archaeological record that are evident in the area? Were changes in mobility and settlement patterns, as evidenced by chipped stone data, part of broader adaptive shifts?
- How do such changes, particularly those that occur around A.D. 1300, relate to the postulated spread of Numic-speaking peoples into the area?

Approximately two decades of research at the sites in the Little Boulder Basin area has resulted in a substantial data set. However, the poor preservation of some materials and difficulty in separating occupations at multi-component sites has led to a smaller useful data set than would be expected. Many subsistence-related research questions require sufficient data from single-component contexts, particularly those from time periods prior to the Eagle Rock Phase, to draw conclusions regarding changes in subsistence practices through time. Thus, a primary data need is to identify pre–Eagle Rock, dated, single-component deposits containing faunal remains, macro-

botanical remains, ground stone, and/or thermal features. Also, there is a need for any deposits of any age containing ceramics. The recovery and secure dating of ceramics should be a high priority for future research.

4.1.4. Site Structure and Function

Seddon and Clark (2010:209-241) provide a discussion of site structure and function that is centered on the definition of site types and their relationship to subsistence and settlement patterns. Seddon and Clark focused on examining existing site data, utilizing exploratory statistical tools to identify consistent variation in site types. They conclude that in the general study area the most common form of site is what they refer to as a "simple camp" occupied by a small group of highly mobile hunters and gatherers for a short period of time. Despite years of effort, structures have not been identified at area camps. The number of features present is generally low, and even camps with a high number of features appear to have been re-occupied repeatedly. Features are almost always very simple, unlined fire pits. No secondary refuse areas have been identified. Site structure (as defined by features and artifact distributions) is extremely simple, and is interpreted as representing short occupations by small groups, probably comprised of extended-family members. Variation between camps, even where identified, is slight, reflecting differences in artifact and faunal material densities.

Seddon and Clark identified potential variations of the generalized camp. One contains a high density of debitage (generally greater than 2,000 flakes per cubic meter), while another contains a high density of tools (generally greater than 10 tools per cubic meter). These camp types may represent areas where stone tool production and repair (and possibly hunting) were a particular focus. Another potential variation of the generalized camp is characterized by a high density of ground stone and high faunal richness. These camps may represent areas where food collection and processing were emphasized more heavily. General camps and tool processing camps are located in a variety of settings. Food processing camps, on the other hand, appear restricted to particular ridge tops and the big sagebrush vegetation zone.

A number of other observations emerged from the analysis. One is that the mere presence of ground stone is of itself a poor discriminator. It does not seem to clearly co-vary with other factors considered in the site-type analysis. The strongest association, as noted above, is where ground stone is present in high quantities and co-occurs with high faunal richness. Also, features are a poor discriminator. With the exception of the Middle Archaic Period, features are relatively common and are found on most sites. During the Eagle Rock Phase, nearly all sites have at least one feature, and observed variation in feature numbers appears to relate to site reoccupation rather than differences in site structure. Sites dating to earlier time periods, the Middle Archaic Period and Maggie Creek Phase in particular, contain fewer features. It is unclear whether this is a reflection of diminished preservation or differences in settlement practices.

Based on this summary, Cannon and Seddon (2010:314-315) developed the following set of research questions related to site structure and function:

- Is there a bipartite site type distribution in the Middle Archaic period characterized by small generalized camps and specialized plant and animal processing camps? Or, are more camp types present?

- Are there large multi-family occupations during the Middle Archaic Period, or are sites with multiple features simply sites that were reoccupied repeatedly during the Middle Archaic?
- Is there a bipartite distribution in the Maggie Creek Phase characterized by small generalized camps and specialized hunting and animal processing camps? Or, are more camp types present?
- Is there a tripartite site distribution in the Eagle Rock Phase characterized by small generalized camps, specialized hunting and tool production/repair camps, and specialized botanical and faunal processing camps? Or, are more or fewer camp types present?
- Are larger, multi-family occupations represented during the Eagle Rock Phase?
- Are site types and inter-site differentiation greater prior to the Eagle Rock Phase with less intersite variability during the Eagle Rock Phase?
- Are food processing sites consistently restricted to particular portions of the landscape?

4.1.5. Lithic Source Use, Technology, and Mobility Patterns

Seddon et al. (2010:242-301) provide a discussion of lithic use, technology, and mobility patterns, primarily from the perspective of the Little Boulder Basin. Their summary of results is presented by prehistoric phase.

Middle Archaic Period occupations appear to represent remains of highly mobile residential foragers traveling over a large annual range. They moved from resource area to resource area, employing a fairly generalized foraging strategy. Seddon et al. (2010:242-301) suggest that there should be little significant difference between Middle Archaic Period site types and assemblages. Since groups carried a general tool kit designed to meet all contingencies, assemblages should not vary significantly from site to site. Any variations should be explainable based on the availability of local resources (e.g., quarry sites near raw material sources, fishing sites near streams or lakes, etc.). There should be little evidence for long-term occupation.

The Maggie Creek Phase appears to represent a highly distinct mode of occupation. Annual range size appears to have decreased, while occupation duration and intensity of exploitation may have increased. Consequently, research questions focus on the distinct nature of mobility during this phase.

During the Eagle Rock Phase the foraging range appears to have once again expanded. Mobility patterns appear different from those of earlier phases. The study area may represent a locale where logistically organized foraging parties stopped and reduced materials while returning from supply trips to the Tosawihi Quarries. Historically observed Shoshone settlement pattern may have developed during this phase. However, it is not clear if the historically defined pattern held for pre-Contact populations, or if they reflect population displacement following historical contact.

Based on this summary, Cannon and Seddon (2010:315-316) developed the following set of research questions related to lithic source use, technology, and mobility patterning.

- Are there differences in chipped stone assemblages between South Fork and James Creek phase occupations?
- Do all Middle Archaic Period occupations represent generalized mobile foragers or are different functional site types present that relate to something larger than focusing on a local

resource? Are Middle Archaic Period occupations present that represent true extractive sites or logistical exploitation sites?

- Are all Middle Archaic Period occupations relatively short-term or is there evidence of longer term occupations?
- What is the annual range during the Maggie Creek Phase?
- What causes the change in mobility and range size during the Maggie Creek Phase? Environmental change? Population increase?
- Do all Maggie Creek Phase occupations represent generalized mobile foragers, or are there different functional site types beyond those focused on particular local resource? Are Maggie Creek Phase occupations present that represent true extractive sites or logistical exploitation sites?
- What is the length of occupation for Maggie Creek Phase sites?
- Do all Maggie Creek Phase sites have chipped stone assemblages with no significant variation between use of Tosawihi Chert and non-Tosawihi Chert? In particular, is the observed pattern a result of having excavated Maggie Creek phase sites in similar settings or does the pattern hold regardless of site setting?
- Is there evidence of logistical foraging during the Eagle Rock Phase? Do any sites indicate clear evidence of specialized collecting?
- Are there significant functional differences between site types during the Eagle Rock Phase? Are there, for example, base or residential camps, possibly along major rivers and streams, as noted for the historical Shoshone inhabitants of the region?
- Does the Shoshone pattern of occupation develop early or late in the region? Is this pattern a result of Euro-American contact and, possibly, depopulation due to disease?
- Does the Little Boulder Basin represent a specialized locale during the Eagle Rock Phase, perhaps as a place for quarry supply parties to stop on their return from the Tosawihi Quarries? Needed are Eagle Rock phase sites from outside the Little Boulder Basin. Then it will be possible to determine if there is any difference in chipped stone assemblages or other data.
- Are the observed differences in usage of Tosawihi and non-Tosawihi chert over time visible outside the Little Boulder Basin area?
- Does the pattern of Tosawihi chert exploitation observed in the Little Boulder Basin hold steady or change at different distances from the quarries? What are reduction strategies for sites 10 km from the quarries? 30 km? 50 km? Might those strategies have been structured by factors other than simply transport distance (e.g., social or political factors)?
- Can we refine the differences in chipped stone assemblages between the Middle Archaic Period and the Eagle Rock Phase?
- Non-Tosawihi raw material types (other than obsidian) remain poorly defined in the region. How widely does the use of non-Tosawihi raw materials range, what is their utility and quality, and what is their distributions on the landscape?

Data needs related to the above questions include the following. There is an emphasis on any site with a high probability to contain Middle Archaic (South Fork and James Creek) occupations. Few excavated sites or components represent these phases. Any clear South Fork or James Creek phase occupation (rather than generalized Middle Archaic occupations), will merit further field investigation. Any Maggie Creek phase sites that appear significantly different from previously excavated sites in the area are of interest. Key identifiers would be evidence of differential use of Tosawihi Chert and non-Tosawihi Chert, sites located in settings significantly different from

previously excavated Maggie Creek Phase sites, and sites containing evidence of specialization in activities. Sites of any phase with high potential to provide data on use of raw materials other than Tosawihi Chert also are of interest. Such sites would be identified by having high proportions of chert types other than Tosawihi, or high proportions of obsidian.

4.2 Ethnographic Period Context

No previously recorded ethnographic period cultural resources were noted as present in the current study area. Field examination of the study area did not result in the identification of any such resources. As a result, there is no need to provide a detailed context for use in evaluating the National Register eligibility of ethnographic resources.

4.3 Historic Period Context

Archival research conducted in advance of fieldwork suggests that historic period sites found in the present inventory corridor would likely relate to one of three themes - transportation, mining, or ranching. Fieldwork resulted in the documentation of a resource that relates specifically to the transportation theme. As a result, a context is provided only as it relates to the transportation theme.

4.3.1 Transportation

Most cultural resources associated with historic period transportation are linear features/corridors. They may include trails, roads, and railroads. Route development often began with early exploration of a region and gradually evolved with subsequent emigration, settlement, and economic development. The interplay of transportation systems on one another was often pronounced and changed over time. Governmental involvement with roads on a local, state, and national level became increasingly pronounced over time.

Historical information regarding the transportation theme is provided in section 3.4 of the present report. Review of that information allowed for the identification of chronological periods, geographic areas, and property types likely to be encountered in the EPP corridor. In turn, this information allowed for development of an evaluation matrix that assesses relative research potential.

Two levels of transportation system appear relevant within the EPP corridor. The first is the regional system, one that linked major regional population centers. Early on these roadways might have been developed as toll roads whereas today they are public roadways maintained by state and local governments. The second is the resource-specific system. Mining, farming, and ranching are all dependant on this form of transportation system. They link elements of any given operation and they link the operation to the outside world. The delivery of needed goods and supplies and the shipment of products to the consumer depended on that system.

Other forms of transportation played only a small role in development along the EPP corridor. No railroads crossed the EPP corridor. No formal airports are located along the corridor. Present, however, are small runways constructed and used by local ranchers. They are more an element of the ranch than a stand-alone resource.

4.3.1.1 Chronological Periods

Along the EPP corridor, the transportation theme can be divided into three simple periods. The first reflects the use of simple roadways by horse-drawn wagons. The second period reflects the early development of roads intended for use by motorized vehicles. This is represented by the reuse of old local and regional level roads, and by the designation and use of national routes such as the Victory Highway. The final period represents the development and use of surfaced roadways.

Period 1: Horse-drawn Wagon Period	1862-1910
Period 2: Early Motorized Period	1910-1926
Period 2: Modern Period	1926-1962

4.3.1.2 Geographic Areas

Given the small size of the project area, it is not necessary to identify specific geographic areas.

4.3.1.3 Property Types

Transportation-related property types will vary based on period and the level of roadway system. Nineteenth century regional systems were used most prominently by stage drivers, freighters, and mail service providers. These users confined their travels to established ways, which during this time consisted of unimproved or barely improved, rutted roadways. Since they carried feed for their animals and themselves, the freighter and mail provider would have camped adjacent to the trail. The emphasis was on traveling the route in as short a time as possible. Archaeologically, evidence of this use should be reflected by the travel way itself, camp spots located immediately adjacent to the travel way, stage stations intended to provide accommodations for travelers (freighters and mail service providers were not as closely linked to stations as were stage lines), and trail detritus. Twentieth century regional systems consist of engineered and most often paved roadways designed to accommodate automobiles. These roadways are far more likely to exhibit designed features such as a raised roadbed, retaining walls, earthworks (such as cut and fill slopes), bridges, and drainage features. During any period, resource level transportation systems tend to be simpler and more rudimentary that regional systems. Nineteenth and many early twentieth century resource level roads consisted of little more than an unimproved rutted roadway that connected the mine, farm, or ranch to the nearest regional route.

Property types associated with this theme can be sorted into gross categories dealing with properties along the way, the intersection of transportation systems, and ancillary properties.

Properties Along the Way: Properties included in this category include the way itself (the road or railroad grade), structures associated with the way (bridges, culverts, cuts, fills, etc), construction camps, buildings or structures associated with the operation and maintenance of the transportation system (stations, signal structures, maintenance stations, etc.), and debris located along the way that relates directly to construction or operation of the transportation system. This group of properties relates directly to the construction and operation of the transportation system.

It is important to recognize that only segments of roadways will be encountered in the EPP corridor. The BLM and SHPO have developed standards for assessing such roadway segments. These standards will be adhered to.

System Intersections: Properties included in this category might include toll stations, passenger stations, freight stations, and isolated structures located adjacent to a transportation corridor (corrals, loading chutes, etc.). The central factor is that properties assigned to this general group are locations where transportation systems intersect either with another form of transportation system, or with some other type of property. Of relevance at these properties is the nature and importance of the interface.

Ancillary Properties: Properties included in this category might include material storage or staging areas, quarries for gravel and ballast, ditches or other water control features, property demarkation features (fences, rock walls, etc.), signage, mileposts, and various forms of informal or secondary refuse disposal. By nature, ancillary features are ephemeral, relate to only one aspect or period of the transportation system's operation, or relate to the system only secondarily. Ancillary features are seldom found in association with resource level transportation systems.

It should be noted that the secondary dumping of trash along roadways creates an unwarranted associative relationship between the debris scatter and a transportation system. The scatter was not a component of the system as designed or as operated. As a result, such scatters can be considered significant only if they are intact, discrete in content and chronology, and located in close proximity to the activity from which they are derived; or if they contain information that may reveal patterns germane to broader research questions.

4.3.1.4 Property Evaluation

Hardesty and Little (2000:79-86) list factors used to determine the significance of historic linear features and sites. They note that development of an historic context for transportation features is facilitated by focusing upon the socio-technic system of which transportation is a part. This often involves definition of transportation corridors, composed of components associated with particular historic property types. These include construction-related properties (i.e., survey camps, construction camps), industrial properties (i.e., those associated with engineering and supply), operational and maintenance properties (i.e., those associated with use of the corridor), and miscellaneous properties. Such a socio-technic transportation corridor system has thematic, chronological, and geographic dimensions.

Myhrer (1993) develops a regional historic transportation systems model for the Salt Lake City to Los Angeles transportation corridor in southern Nevada. Evolution of this major transportation corridor included initial exploration, wagon roads, a railroad, and several iterations of motor highways. Myhrer argues that the developmental trajectory of a transportation corridor typically includes of an exploration phase, a construction phase, a use/maintenance phase, and an abandonment/reuse phase. Critical factors in a transportation corridor's development include its purpose/function, the means of financing its construction and maintenance, and sources of supplies and labor for construction and subsequent maintenance. Questions of particular archaeological concern relevant to the study of historic transportation corridors include those associated with the historic themes of ethnicity, demography, technology, economics, and social structure.

Transportation-related sites with the greatest research potential will be nineteenth century roadways that have not been impacted substantially by subsequent development or use. Of particular interest would be stations or camp sites located along such routes. Resource level transportation systems, on the other hand, are less likely to hold out much intrinsic research potential. In many cases, it may be advisable to consider their importance in association with the ranch, farm, or mine that they served. Specific research topics that should be considered include the following:

- Is there archaeological evidence of historical transportation features or facilities such as roads, road beds, constructed engineering features, stage stations, way stations, route-related camp sites, or wagon parts related to a specific, defined route?
- Are there archaeological remains at locations of significant transportation-related events within the project APE?
- Do archaeological remains or patterning of sites or features illustrate changes in transportation systems that occurred with arrival of the Transcontinental Railroad and subsequent development of regional transportation networks?
- Is sufficient evidence present to allow for the definition of a specific route's developmental history? In particular, how did the trail/road network develop and what are its geographic parameters?
- How did historic land use shape the placement and alignment of historic road systems, corridors, and infrastructure elements in the project area?
- Is there archaeological evidence of facilities connected with construction, maintenance, and/or use of the transportation network?

Fawcett (2005:13-14) provides a discussion of the transportation theme from the specific perspective of the Victory Highway. He notes that the Victory Highway has already been determined to be Eligible to the National Register, but that some segments no longer retain integrity, while other portions of the abandoned highway still retain graveled road beds and engineering works (such as bridges, road cuts, retaining walls, etc.) situated in relatively intact landscapes. He notes that segments of the highway may have research potential is that provide data for addressing any of the following research questions:

- How did the existence of the Victory Highway alter ranching and mining land use patters? How did this further change with shifts in the route of the Highway?

- What sorts of infra-structure developed along the Victory Highway to support travelers and how did this impact local economies and communities?

- How was the decision reached to utilize specific highway routes? To what extent did construction costs and existing infrastructure determine which routes were used, versus lobbying by various interested parties and political motivations?

5.0 Environmental Background

The general project area is part of a region characterized by basin and range geomorphology, typified by rugged mountain ranges dissected by creeks and drainages. The EPP corridor is astride a major north-south-trending mountain range, the Tuscarora Mountains. At its north end, the EPP corridor runs along the west flank of the range, crosses over the crest of the range in the vicinity of Popovich Hill, and then runs along the east flank of the range to its southern terminus.

5.1 Geology

The bedrock geology of north–central Nevada consists of strata deposited from late Proterozoic through Triassic times, with sporadic distributions of later Jurassic- and Cretaceous-age rocks. Most consist of marine deposits that underwent subsequent deformation. The more significant tectonic event in the area was the Roberts Mountains thrust, which resulted in the eastward movement of silicic and volcanic rock (Coats 1987). Igneous rock formations in the general area consist of Jurassic–, Cretaceous–, and Tertiary–aged volcanic episodes in the form of various lava flows and ash layers. During the Miocene, volcanic deposits of rhyolitic ashes and tuff were laid down to the northwest. Among the rock formations present in the general area, several were important to prehistoric inhabitants as sources of raw lithic materials.

- Miocene deposits include cryptocrystalline rock that includes Tosawihi chert, the tool stone quarried at the Tosawihi Quarries (Elston and Raven 1992). Tosawihi chert, also known as Tosawihi opalite, is the dominant lithic tool stone observed within archaeological assemblages from the general area surrounding the EPP. In addition to Tosawihi chert, volcanic activity near the Tosawihi Quarries also formed other potential tool stones, including basaltic andesite and rhyolite. These lithic sources were used by prehistoric inhabitants for manufacturing grinding stones, hammer stones, and, possibly, flaked stone tools (Elston 1992b).
- The Ordovician Vinini Formation makes up the primary bedrock of the Tuscarora Mountains. Two named toolstones can be found in this formation: Vinini Silicified Shale and Vinini Chert, both of which are found as tools and debitage at regional archaeological sites (Schroedl 1995, 1996).
- The Valmy Formation consists of vitreous quartzite interbedded with chert and shale (Roberts et al. 1967). Outcrops of the Valmy Formation are located in Whirlwind Valley, immediately south of Boulder Valley.
- Outcrops of the Roberts Mountain Formation are exposed in the Tuscarora Mountains (Roberts et al. 1967). Cherts derived from this formation were used for chipped stone tool production (Schroedl 1995, 1996).

Other sources of cryptocrystalline rocks suitable for use as tool stone are located in the general area as well (LaFond 1996a).

- Sheep Creek Chert is found in the Sheep Creek drainage.
- Schroeder Mountain Chert refers to several varieties of banded cherts that come from the Maggie Creek drainage in the Schroeder Mountain area on the east side of the Tuscarora Mountains.

- Hadley Chert is another tool stone found in the Maggie Creek drainage.
- Susie Creek Chalcedony and Susie Creek Chert are found in the Susie Creek area, located southeast of the present project area. These materials can be found in the form of pebbles and small cobbles on the hills between Dry Gulch and Maggie Creek.
- Elko Hills Chalcedony is found on the north flank of the Elko Hills and is subsumed within what Elston (1990a:171) describes as Elko Hills Chert. Sources of South Fork/Elko Hills Chert are found with Elko Hills Chalcedony on the north side of the Elko Hills and near the South Fork Reservoir. The chert obtained from the two locations cannot be differentiated, and it is probable that the sources are outcrops of the same geologic formation.
- South Fork Quartzite is found in limestone deposits that forms the cliff above South Fork Shelter at the confluence of the South Fork and Humboldt rivers.

5.2 Soils

Soils occur in an orderly pattern related to the geology, landforms, relief, climate, and natural vegetation of an area. Each soil is associated with a particular kind of landform or with a segment of that landform. Surveys regarding soils in the general area include a description of the soils, their location on the landscape, soil properties, and limitations affecting various uses. The following information was derived from a custom soil resource report prepared by the Natural Resources Conservation Service (NRCS). The EPP corridor is within one NRCS soil survey area - Tuscarora Mountain Area, Nevada (Survey Area Data: Version 7, September 10, 2012). According to NRCS data, 26 soil associations are present within the EPP archival study area (Table 13). Seven soil associations account for nearly three-fourths of the project corridor.

- The Stampede-Donna association (13.1 percent of the EPP corridor) is located on fan remnants with a slope of 4 to 15 percent, between elevations of 5,500 and 6,200 feet.
- The Cherry Spring-Berning association (12.8 percent of the EPP corridor) is located on fan remnants with a slope of 2 to 8 percent, between elevations of 5,100 and 5,400 feet.
- The Bucan-Malpias association (10.6 percent of the EPP corridor) is located on hill slopes with a slope of 15 to 30 percent, between elevations of 5,200 and 5,800 feet.
- The Slaven-Torro association (10.1 percent of the EPP corridor) is located on mountains with a slope of 30 to 50 percent, between elevations of 6,000 and 7,000 feet.
- The Slaven Primeaux association (9.4 percent of the EPP corridor) is located on mountains with slopes of 15 to 30 percent between elevations of 5,600 and 6,500 feet. Included in this unit are about five percent Cumulic haplaquolls on floodplains.
- The Donna-Simon association (8.2 percent of the EPP corridor) is located on fan remnants with a slope of 2 to 8 percent, between elevations of 5,800 and 6,200 feet.

5.3 Hydrology

Water sources in the EPP area are part of the Boulder Flat and Maggie Creek hydrographic areas, all tributary to the Humboldt River. Surface water sources include several creeks. From north to south, the corridor extends along the north side of Rodeo Creek, crosses the upper most reaches of Simon Creek, Soap Creek, and finally James Creek just upstream of where it flows into Maggie Creek. Stream flows along most of these streams are ephemeral over much of the year. The southern-most portion of the proposed corridor runs parallel to Maggie Creek. No named springs

are present within or immediately adjacent to the EPP corridor. Because water levels in the area are generally low, alluvial deposition appears to be minimal. However, Schroedl (1995, 1996) suggests that many drainages show signs of past high–energy water flows, as evidenced by the depth of cut–banks.

Table 13. EPP Corridor Soil Characteristics

Map Unit Symbol	Map Unit Name	Acres in Archival Study Area	Slope (percent)	Landform	Depth to Restrictive Layer (Inches)
SR	Stampede-Donna association	2,072.2	4-15	Fan Remnant	20-37
CF	Cherry Spring-Berning association	2,025.5	2-8	Fan Remnant	20-40
BZm	Bucan-Malpais association	1,665.5	15-30	Hills	40-60
CH	Cherry Spring-Cortez-Tomera association	1,595.5	2-8	Fan Remnant	20-40
SH	Slaven-Torro association	1,592.8	30-50	Mountains	20-40
SE	Slaven-Primeaux association	1,485.1	15-30	Mountains	20-40
DM	Donna-Simon association	1,287.2	2-8	Fan Remnant	20-40
TA	Taylor Creek-Chen association	813.3	30-50	Mountains	>80
OU	Orovada-Humdun association	658.5	4-15	Inset Fans	>80
CC	Chen-Pie Creek-Ramires association	525.5	15-30	Mountains	12-40
CK	Cherry Spring-Orovada association	354.2	2-8	Fan Remnant	20-40
OSB	Orovada gravelly fine sandy loam	274.2	2-4	Inset Fans	>80
Wd	Welch loam, drained	235.6	0-2	Flood Plain	>80
OtA	Orovada silt loam	203.1	0-2	Inset Fans	>80
Fm	Four Star loam, drained	161.8	0-2	Flood Plain	>80
491	Orovada-Puett association	154.0	4-15	Fan Apron	>80
Au	Alluvial land	143.4	0	Flood Plain	>80
Od	Ocala silt loam, drained, slightly Saline	126.8	0-1	Flood Plain	>80
CG	Cherry Spring-Cortez-Chiara association	103.4	2-8	Fan Remnant	20-40
WE	Welch-Bosco association	90.3	0-2	Flood Plain	>80
WlA	Wholan silt loam	67.1	0-2	Flood Plain	>80
SW	Susie Creek-Short Creek Association	49.6	4-15	Mountains	40-60
PC	Pie Creek-Susie Creek association	28.9	15-30	Hills	24-60
Co	Cluro silt loam, drained	22.2	0-2	Alluvial Flat	>80
DN	Donna-Stampede association	15.8	2-8	Fan Remnant	20-40
RaA	Rad silt loam	15.7	0-2	Fan Remnant	>80
W	Water	1.4			
	Totals for Area of Interest	15,768.6			

5.4 Flora

The EPP corridor lies within the Big Sagebrush area of the Intermountain Sagebrush vegetation province (Bailey 1978), which covers the broad valleys and lower foothills of the northern Great Basin. Big sagebrush communities thrive in well-drained valleys and at the bases of mountain ranges, especially on alluvial fans. Plant species noted as present within the corridor are listed in Table 14.

The EPP corridor nears or crosses seasonal creeks each of which contains, to varying extents, seasonal riparian/mesic zones. Most contain both wetland and upland species. Species may include watercress, Baltic rush, biscuitroot, woods rose, willow, least phacelia, sego lily, sagewort,

common yarrow, bottlebrush squirreltail, rabbitbrush, big sagebrush, bitterbrush, crested wheatgrass, wild onion, and cheatgrass (Dean et al. 2011, Appendix B).

Table 14. Plant Species Present Within Project Vicinity

antelope bitterbrush (*Purshia tridentate*)	long-leaf phlox (*Phlox longifolia*)
arnica (*Arnica* L.)	low hawksbeard (*Crepis modocensis*)
balsamroot (*Balsamorhiza* spp.)	lowly penstemon (*Penstemon humilus*)
Baltic rush (*Juncus balticus*)	lupine (*Lupinus* spp.)
basin rayless daisy (*Erigeron aphanactis*)	mariposa lily (*Calochortus* spp.)
basin wildrye (*Leymus cinereus*)	medium fiddleneck (*Amsinckia intermedia*)
biscuitroot (*Lomatium* spp.)	medusahead (*Taeniatherum caputmedusae*)
bitterbrush (*Purshia* spp.)	mission bells (*Fritillaria affinis*)
black sagebrush (*Artemisia nova*)	mugwort (*Artemisia vulgaris*)
black willow (*Salix nigra*)	mustard (*Brassica* spp.)
blepharipappus (*Blepharippus scaber*)	stinging nettle (*Urtica dioica*)
blue pod lupine (*Lupinus sellulus*)	northern mule's ears (*Wyethia amplexicaulis*)
bluebunch wheatgrass (*Pseudoroegneria spicata*)	panicle willowherb (*Epilobium brachycarpum*)
bog geranium (*Geranium palustrane*)	penstemon (*Penstemon* ssp)
bog mallow (*Sidalcea oregano*)	pestle lomatium (*Lomatium nudicaule*)
Bolanders yampa (*Perideriddia bolanderia*)	prickly lettuce (*Lactucaserriola*)
bottlebrush squirreltail (*Elymus elymoides*)	prickly pear cactus (*Opuntia* spp.)
bur buttercup (*Ranunculus testiculatus*)	pubescent wheatgrass (*Agropyron trichophorum*)
cheatgrass (*Bromus tectorum*)	Pursch's milkvetch (*Astragalus pershii*)
chenopods (*Chenopodium* spp.)	rayless erigeron (*Erigeron* spp.)
clover (*Trifolium* spp.)	rubber rabbitbrush (*Chrysothamnus nauseosus*)
coyote willow (*Salix exigua*)	sagewort (*Artemisia frigida*)
creeping wildrye (*Leymus triticoides*)	Sandberg bluegrass (*Poa secunda*)
crested wheatgrass (*Agropyron cristatum*)	scablandfleabane(*Erigeron bloomeri*)
Cryptantha (*Cryptantha* spp.)	scarlet globemallow (*Sphaeralcea coccinea*)
curly dock (*Rumex crispus*)	scotch thistle (*Onopordum acanthium*)
cushion phlox (*Phlox pulvinata*)	sedge (*Carex L.*)
dark red onion (*Allium atrorubens*)	seep-spring arnica (*Arnica longifolia*)
death camas (*Zygadenus venenosus*)	sego lily (*Calochortus nuttallii*)
desert evening primrose (*Oenothera primiveris*)	serviceberry (*Amelanchier* spp.)
desert globemallow (*Sphaeralcea ambigua*)	showy penstemon (*Penstemon spectabilis*)
Douglas buckwheat (*Eriogonum douglasii*)	silver lupin (*Lupinus argenteus*)
Douglas rabbitbrush (*Chrysothamnus viscidiflorus*)	silverleaf phacelia (*Phacelia hastate*)
dusty maiden (*Chaenactis douglasii*)	snowberry (*Symphoricarpos* alba)
elk thistle (*Cirsium foliosum*)	soft arnica (*Arnica mollis*)
false dandelion (*Agoseris glauca*)	spreading phlox (*Phlox diffusa*)
fernleaf biscuitroot (*Lomatium dissectum*)	storksbill (*Erodium cicutarium*)
field bindweed (*Convolvulus arvensis*)	sulfur buckwheat (*Eriogonumum bellatum*)
flix weed (*Descurainium sophia*)	tapertip hawksbeard (*Crepis acuminatus*)
forage kochia (*Bassia prostrata*)	Thurbers needlegrass (*Achnatherum thurberiana*)
freckle pod milkvetch (*Astragalus lentiginosus*)	Torrey's lupin (*Lupinus lepidus*)
golden currant (*Ribes aureum*)	tufted evening primrose (*Oenothera caespitosa*)
granite gilia (*Leptodactylon pungens*)	tumble mustard (*Cicimbrium altissima*)
gray horsebrush (*Tetradymia canescens*)	turkey mullein (*Croton setigerus*)
gray rabbitbrush (*Ericameria nauseosa*)	vetch (*Astragalus* spp.)

groundsel (*Senecia* spp)	watercress (*Nasturtium officinale*)
hoary cress (*Cardaria draba*)	western hawksbeard (*Crepis occidentalis*)
hoary tansyaster (*Machaeranthera canescens*)	western wheatgrass (*Pascopyrum smithii*)
Hooker's balsamroot (*Balsamorhiza hookeri*)	wild onion (*Allium ascalonicum*)
Indian ricegrass (*Achnatherum hymenoides*)	wild rose (*Rosa californica*)
iris (*Iris L.*)	yampa (*Perideridia gairdneri*)
king's penstemon (*Penstemon kingii*)	yarright-of-way (*Achillea millefolium*)
larkspur (*Delphinium* spp.)	yellow alyssum (*Alyssium alyssoides*)
lava aster (*Aster scapulorum*)	yellow Indian paintbrush (*Castilleja mutis*)
least phacaelia (*Phacaelia minutissima*)	yellow spined thistle (*Cirsium ochrocentrum*)

Source: Dean et al. (2011: Appendix B)

Non-native, invasive plant species noted within the project vicinity include Bull thistle (*Cirsium vulgare*), Scotch thistle (*Onopordum acanthium*), medusahead (*Taeniatherum caput-medusae*), curly dock (*Rumex crispus*), and hoary cress (*Cardaria draba*) (see Dean et al. 2011, Appendix B).

5.5 Fauna

The EPP corridor and the surrounding area provide habitat for numerous species of wildlife (Dean et al. [2011], Cannon [2010]). A list of mammal species native to the project vicinity is provided in Table 15.

Pronghorn antelope (*Antilocapra americanas*) are the primary big game mammal occupying the EPP corridor, especially in rolling to flat terrain with an open topography. The burned areas provide a wide open expanse suitable for the pronghorn. The western half of the Little Boulder River Basin, adjacent portions of Boulder Valley, and the Sheep Creek Range provide crucial winter habitat for pronghorn (Bureau of Land Management 2007, 2008).

Mule deer (*Odocoileus hemionus*) also are present in the area. Mule deer prefer cover provided by tall shrubs and trees. The EPP corridor passes through some such mule deer habitat and crosses known deer migration routes (Bureau of Land Management 2007, 2008). In all cases, deer were moving between summer habitat in the higher reaches of the Tuscarora Range and winter habitat located on the east flank of the Sheep Creek Range and along the Humboldt River. Toward the north end of the EPP corridor, a migration route extends between the Tuscarora Range and the Dunphy Hills. Movement along this corridor is now low due to mining activities. The Little Boulder River Basin serves as an intermediate range staging ground, accommodating deer prior to their movements through the migration corridors (Cannon 2011:9).

Elk (*Cervus canadensis*) are distributed from British Columbia through the western United States down to central Arizona and New Mexico. Elk live in a variety of ecosystems ranging from conifer forests to desert grasslands. Elk typically mate between September and October and give birth and late May or early June. Elk require cover during calving and to protect them against extreme heat and cold, but these cover requirements vary between locations and populations. Elk prefer to browse on grasses and forbs during the growing season and will browse on woody vegetation during the winter. The high topographic area northeast of the EPP corridor has been identified as elk summer range.

Table 15. Mammal Species Native to the EPP Corridor

Common and Scientific Name	Common and Scientific Name
Merriam's Shrew *Sorex merriami*	Great Basin Pocket Mouse *Perognathus parvus*
Vagrant Shrew *Sorex vagrans*	Chisel-toothed Kangaroo Rat *Dipodomys microps*
American Water Shrew *Sorex palustris*	Dark Kangaroo Rat *Microdipodops megacephalus*
Raccoon *Procyon lotor*	Ord's Kangaroo Rat *Dipodomys ordii*
North American River Otter *Lontra canadensis*	American Beaver *Castor canadensis*
American Mink *Neovison vison*	Western Jumping Mouse *Zapus princeps*
American Badger *Taxidea taxus*	Bushy-tailed Woodrat *Neotoma cinerea*
Long-tailed Weasel *Mustela frenata*	Canyon Deer Mouse *Peromyscus crintus*
Ermine *Mustela erminea*	North American Deer Mouse *Peromyscus maniculatis*
Western Spotted Skunk *Spilogale gracilis*	Desert Woodrat *Neotoma lepida*
Striped Skunk *Mephitis mephitis*	Northern Grasshopper Mouse *Onychomys leucogaster*
Coyote *Canis latranas*	Pinyon Deer Mouse *Peromyscus truei*
Wolf *Canis lupus*	Western Harvest Mouse *Reithrodontomys megalotis*
Kit Fox *Vulpes velox*	Long-tailed Vole *Microtus longicaudis*
Red Fox *Vulpes vulpes*	Montane Vole *Microtis montanus*
Mountain Lion *Puma concolor*	Muskrat *Ondatra zibethicus*
Belding's Ground Squirrel *Spermophilus beldingi*	Sagebrush Vole *Lemmiscus curtatus*
Golden-mantled Ground Squirrel *Spermophilus lateralis*	North American Porcupine *Erethizon dorsatum*
Least Chipmunk *Tamias minimus*	American Pika *Ochotona princeps*
Merriam's Ground Squirrel *Spermophilus canus*	Black-tailed Jackrabbit *Lepus californicus*
Piute Ground Squirrel *Spermophilusmollis*	Mountain Cottontail *Sylvilagus nuttalli*
Uinta Chipmunk *Tamias unbrinus*	Pygmy Rabbit *Brachylagus idahoensis*
Antelope Ground Squirrel *Ammospermophilus leucurus*	White-tailed Jackrabbit *Lepus townsendii*
Wyomin Ground Squirrel *Spermophilus elegans*	Elk *Cervus elaphus*
Yellow-bellied Marmot *Marmota flaviventris*	Mule Deer *Odocoileus hemionus*
Norther Pocket Gopher *Thomomys talpoides*	Pronghorn Antelope *Antilocapra americana*
Botta's Pocket Gopher *Thomomys bottae*	American Bison *Bison bison*
Townsend's Pocket Gopher *Thomomys townsendii*	Bighorn Sheep *Ovis canadensis*

Source: Cannon (2010:9, Table 1)

Mammalian predators that inhabit the area include coyote (*Canis latrans*), bobcat (*Lynx rufus*), mountain lion (*Felix concolor*), and badger. Because they exploit a diverse prey base, these animals can be found in a wide variety of habitats. Bobcat and mountain lion are generally associated with rugged, rocky areas, whereas badgers and coyotes are more closely associated with sagebrush, mountain brush, shadscale (*Atriplex confertifolia*), greasewood (*Sarcobatus vermiculatus*), and winterfat (*Krascheninnikovia lanata*) plant communities.

Bird species of the area include species typical of the sagebrush and grassland communities that might occur within the EPP corridor. A large number of migratory birds breed and raise young in Nevada. These birds are typically present within the respective Great Basin habitats from spring through fall. The species likely to be present within the EPP corridor include American robin (*Turdus migratorius*), horned lark (*Eremophila alpestris*), chipping sparright-of-way (*Spizella passerine*), Brewer's sparright-of-way (*Spizella breweri*), mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), sage thrasher (*Oreoscoptes montanus*), and the common raven (*Corvus corax*). Upland game birds include greater sage-grouse, chukar (*Alectoris chukar*), and Canada geese (*Branta canadensis*).

Birds of prey include the red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), northern goshawk (*Accipiter gentilis*), and Swainson's hawk (*Buteo swainsonii*). Most are associated with a variety of habitats and can be found in sagebrush, grassland, riparian, or pinion-juniper dominated areas.

In addition to the species already discussed, reptiles, such as Great Basin rattlesnakes (*Crotalus oreganuslutosus*), northern desert horned lizards (*Phrynosoma platyrhinos*), and long-nose leopard lizards (*Gambelia wislizenii*) can be found throughout the EPP corridor.

5.6 Paleo-environment

During the late Pleistocene much of the Great Basin landscape was dominated by large pluvial lakes. Lake Bonneville was located to the east, covering much of the eastern Great Basin. Lake Lahontan spread out over much of what is currently western Nevada. Smaller pluvial lakes were present in valleys located south of the Humboldt River. However, no pluvial lakes were present in or near the present study area (Benson et al. 1992; Madsen 2000). Vegetation in much of the Great Basin at this time consisted of subalpine conifers and sagebrush steppe in the valley bottoms (Grayson 2011; Louderback and Rhode 2009). Mega-fauna present during the Pleistocene included ground sloths, horses, camels, mastodons, and mammoths. These, and other species, went extinct before the onset of the Holocene (Grayson 2011).

The Holocene is divide into three general periods. Though different names and date ranges have been proposed (see Antevs 1955; Currey and James 1982), for purposes of the present discussion the Holocene is divided into three periods: early (10,000–7500 B.P.), middle (7500–4500 B.P.), and late (4500 B.P.– present) (see Grayson 2011).

The early Holocene is characterized by a cooler and moister climate than at present. Pluvial lakes and large marshes of the late Pleistocene had diminished considerably in size, but shallow lakes and marshes were still present in some valleys. Sagebrush was predominant in areas currently dominated by plants in the Chenoam group (Grayson 2011). The period also saw the expansion of xerophytic shrubs such as shadscale into areas dominated by pine and sagebrush during the late Pleistocene (Louderback and Rhode 2009). Faunal data from early Holocene sites suggest that the climate was generally cooler (Grayson 2011; Madsen 2000). Data indicate that by the end of the early Holocene conditions had become drier, causing lakes and marshes to shrink in size (Grayson 2011).

The middle Holocene is characterized by generally hotter and drier conditions throughout the Great Basin (Grayson 2011). Many remaining lakes and marshes were further reduced in size or dried up altogether. Warmer temperatures of the middle Holocene facilitated the spread of pinyon pine throughout the eastern Great Basin and prompted further expansion of plants such as shadscale into areas previously dominated by sagebrush (Grayson 2011; Louderback and Rhode 2009). The middle Holocene was marked by a dramatic reduction in mammalian taxonomic richness (Grayson 2000). The distribution of some mammals that had survived the cooler and moister early Holocene was substantially reduced in some portions of the Great Basin (Grayson 2000; Madsen 2000). The rarity of middle Holocene archaeological sites suggests that human populations in the Great Basin may also have declined during this period.

The late Holocene extended from around 4500 B.P. to the present day. It was characterized by moister, cooler conditions than the seen during middle Holocene, but not as moist and cool as the early Holocene (Grayson 2011). Precipitation increased beginning in the latter part of the middle Holocene and continued to 3200 B.P. This was followed by a somewhat drier period that extended from 3200 to 2800 B.P. Modern climate conditions became established a little before 2300 B.P. (Elston and Budy 1990). Over the late Holocene, sagebrush became more widespread (Grayson 2011; Louderback and Rhode 2009) and the range of some mammals increased (Madsen 2000). There is evidence that bison were widespread in the eastern and northern parts of the Great Basin during the late Holocene (Grayson 2006). In contrast to the early and middle Holocene, there is ample evidence of significant human populations throughout the Great Basin during the late Holocene.

6.0 Expectations

The area through which the EPP will extend is not known to be rich in archaeological resources. Archival research indicates that 245 archaeological sites have been identified as a result of 20,990 acres of inventory. This suggests a site density of one site for every 85.7 acres inventoried. This is in marked contrast to areas north of the proposed project corridor, where site densities are three to four times higher. Given a proposed inventory area of approximately 50 acres, it is reasonable to expect that only one archaeological site will be encountered.

Large, complex prehistoric period sites appear most frequently along terraces adjacent to area streams. Stream crossing associated with the EPP project occur along the upper reaches of Rodeo and Simon creeks, or along ephemeral segments of James and Soap creeks. None appear to be prime locations for large complex sites. In contrast, the project corridor does extend along the edge of the Maggie Creek flood plain. This area has a higher probability for the presence of larger sites, possibly with buried material.

Historical research suggests that evidence of early ranching and mining activities should be present. Large-scale ranching operations were active in the area by the 1870s and continued to have a presence through the early half of the twentieth century. Ranching-related resources most likely to be found along the inventory corridor include line camps, corrals, stock ponds, and fence lines. Within the archival study area, mining didn't really appear on the scene until the early 1900s. Mining-related activities are most likely to be reflected toward the south end of the proposed corridor, in the Lynn Mining District. The area is known to have undergone extensive prospecting and limited development using both placer and underground mining methods.

Of the 245 archaeological sites that have been identified in the archival study area only 12 consist solely of historic period material, while another 4 sites contain both prehistoric and historic period material. This suggests a historic period site density of one site for every 1,311.9 acres inventoried. It is noted that this density is very low in comparison with other surrounding portions of the Great Basin. Given a proposed inventory area of approximately 50 acres, it is reasonable to expect that we will not encounter a historic period archaeological site.

7.0 Methods

7.1 Field Methods

The objective of this archaeological inventory was to identify previously unrecorded archaeological resources within 150 feet of the proposed project centerline (a total inventory corridor width of 300 feet). Consultation with the BLM resulted in the development of project-specific objectives regarding previously recorded sites located near the inventory corridor. Based on discussions with BLM, it was decided that with one exception (the Victory Highway) previously recorded sites located within the APE did not need to be revisited. Finally, the proponent directed that alignment modifications be reviewed that would eliminate, or greatly reduce impacts to significant cultural resources. No such changes were prompted as a result of the archaeological fieldwork.

The EPP APE includes 674.6 acres. A majority of the APE has been examined as a result of previous inventories (625.2 acres, or 92.7 percent of the total APE). As a result, inventory activities were limited to the 49.4 acres that had not been inventoried previously (Figure 7). A Class III level cultural resources inventory was conducted of those areas. The inventoried corridor was 300 feet wide (approximately 92 meters), centered on the centerline of the proposed pipeline. A field crew of two walked line-abreast transects spaced no more than 30 meters apart along either side of the centerline. This corresponded to two transects on each side of the survey corridor. The crew chief maintained field notes and tracked conditions affecting inventory results (i.e., weather observations, vegetation type and density, surface disturbance, and estimations of ground surface visibility).

BLM inventory guidelines (BLM 2011:48) set the minimum threshold for an archaeological site at one artifact within 30 meters. With regard to historic period resources, isolated prospect pits, cairns, and other features are to be recorded as isolated finds if there are no other associated remains within 30 meters. These thresholds were used to identify archaeological sites throughout the inventory corridor.

BLM inventory guidelines (BLM 2011:12) stipulate that where a site extends beyond the inventory corridor, the documentation responsibility extends 100 meters out from the edge of the APE (in the present case, 100 meters beyond the limit of the 300 foot wide inventory corridor). This standard was applied to sites and linear features. When a resources was encountered it was assigned sequential field numbers with an EP prefix, such as EPS-1. Sites were mapped using a Trimble GeoXT 2005 GPS receiver, which meets or exceeds standards prescribed in the BLM inventory guidelines (2011, Appendix F). Post processing of GPS data included differentially correcting rover files using the nearest local base station (Cors, Elko [LKN1], Nevada), and then converted to GIS shape files projected to NAD83, UTM Zone 11. All GIS data and shape files, including data sets assembled during archival research and associated metadata, will be provided to the BLM.

Field photography was executed using either a Pentax 10 megapixel camera (model Optio WG-1 GPS) or an Olympus 8 megapixel camera (model FE 370 SLV). Generally, at least two site overview photos were taken at opposing angles with UTM coordinates noted. When unique artifacts were encountered, three photos (both sides and the profile) were taken.

No artifacts were collected during the inventory. Obsidian was not collected for hydration analysis as a part of the present study. Should a future researcher wish to undertake such a study, selected pieces of obsidian were assigned artifact numbers and mapped on individual site forms.

All updated and newly recorded sites were documented on forms specified by current BLM inventory guidelines (BLM 2011, Appendix E). Field personnel collected descriptive data useful in the evaluation of a site's eligibility for listing on the National Register of Historic Places. Distinct clusters of flaked stone debitage and/or tools that appeared to represent a single-component activity area were afforded particular attention. However, no probings, shovel tests, or excavations were conducted at any of the sites as part of the present field effort. When surface data were not considered sufficient to make a National Register eligibility recommendation, this was noted on the site form along with a recommendation as to the types of required data collection (e.g., shovel probes, additional archival research, etc.).

The only linear historic site type encountered in the present study area was the road. Roads were recorded to the limits specified by BLM guidelines (as discussed above). Roads that varied in character or that had breaks in them were recorded by segment, with each segment separately described and photographed. Segments were categorized according to the system developed by OCTA (1994:14-15).

7.2 National Register Eligibility Assessment Methods

Cannon and Seddon (2010:302-324) conduced a detailed review of regional research questions and data needs. As part of that effort they compared inventory-based eligibility recommendations against excavation results. Based on their review, Cannon and Seddon summarized types of data that need to be present if a prehistoric site is to address relevant regional research questions and thus be considered eligible for listing on the National Register of Historic Places under Criterion D. Types of data they felt were critical for such a determination included the following:

- The presence of one or more discrete, high-density, single-component loci.
- The presence of one or more single-component locus that contains an abundance of dating-related information (preferably moderate to large quantities of several different dating sources).
- The presence of one or more features (typically identified through the presence of fire cracked rock).
- The locus must have an abundance of different stone tool types.
- If pottery is present, it must be associated with other datable items.

Following the identification of likely single-component loci or sites, Cannon and Seddon identified a number of characteristics that address specific research questions. Those characteristics include:

- The presence of paleo-environmental data, including packrat middens, spring or other wetland sediments (which can provide charcoal and pollen samples), or other paleontological assemblages.

- The presence (or a high probability) of a clear South Fork or James Creek phase occupation (rather than generalized Middle Archaic occupations).
- Any site with a probability to contain a single-component Maggie Creek phase occupation.
- Any pre–Eagle Rock phase, dated, single-component occupation that contains faunal remains, macro-botanical remains, ground stone, ceramics, and/or thermal features.
- Any Eagle Rock phase site that appears significantly different from other similar sites excavated to date. This would include sites with a potential to contain structures, sites with a density of greater than 5,000 items per cubic meter, and sites that appear to represent something other than a generalized camp. An Eagle Rock phase site with more than three pieces of ground stone may meet this criterion.
- Any Eagle Rock occupation located at or near a spring.
- Any single-component occupation located within a floodplain.
- Sites located in settings conducive to addressing the question of whether deeply buried sites are present in floodplains.
- Any site known or suspected to contain two or more stratigraphically separate occupations.
- Sites with a high potential to serve as a test case for refining geophysical remote sensing techniques. Such a site would have as many of the following characteristics as possible:
    - archaeological features (or direct indications of features such as fire-cracked rock) are known to be present;
    - artifacts often associated with archaeological features (particularly ceramics and ground stone) are present; and,
    - surface sediments are such that they will result in minimal background noise and "false positives" (sites that consist of relatively deep deposits of sands or finer sediments would be best; sites with bedrock at or near the surface and sites in rocky alluvial terrace settings are more problematic).
- Sites of any phase with a high potential to provide data on the use of raw materials other than Tosawihi Chert. Such sites would be identified by having high proportions of chert types other than Tosawihi, or high proportions of obsidian.
- Any sites with evidence of pottery manufacture, especially sites with high quantities of pottery and a high probability of having datable features.
- Sites with a high potential to yield information regarding the proximity of ground stone, ceramics, and thermal features. Such sites would be identified by the presence of ground stone or ceramics along with any other characteristics indicating a high probability of features.

To clarify how these site characteristics and research questions relate to National Register eligibility based on Criterion D, Cannon and Seddon (2010:319) developed a flow chart that documents the decision-making as it relates to the immediate Little Boulder River basin.

On a more general scale, archaeological inventories often result in the assignment of identified sites to a specific site type. Types can be essentially descriptive, or they can be integrated into a theoretical construct directed at some aspect of past use. In either case, site types often take on implications regarding the assumed research potential of sites. Over the past several decades researchers have focused on site types thought to have relevance within the spheres of subsistence and settlement. Implicit within the site types were assumptions regarding site purpose, size of the occupying group, and length of settlement. Recently, Cannon and Johnson (2010) reviewed archaeological data from the Little Boulder Basin, attempting to correlate inventory level site types

with excavated, single component archaeological deposits. Their goal, in part, was to identify characteristics that could be seen at an inventory level that would result in the early identification of sites or site components that have the greatest research value. Cannon and Johnson (2010:119) concluded:

> Thus, there unfortunately appears to be no variable, environmental or archaeological, that might be used to predict prior to excavation whether a site or site locus will be single-component. It would therefore seem that the most productive approach to identifying single-component deposits would simply be to target sites or site loci that appear to be able to provide abundant dating information, so that there will be sufficient data with which to evaluate whether the assemblage is single- or multi-component. In other words, there is no magic bullet for locating single-component sites or site loci, and the best that can be hoped for is to focus efforts on those that are likely to be able to produce enough dating information that their occupational history can be adequately evaluated. To the extent that the presence of archaeological features increases the amount of available dating information, which it clearly does, focusing on identifying sites or site loci that are likely to contain features is perhaps the next best strategy.

Cannon and Johnson (2010:125) add further that site location, and the presence of ground stone artifacts and ceramics appear to be reasonably good indicators that features are present at a site.

> Site loci located in certain kinds of settings, particularly in upland locations, also appear to have a greater than random chance of containing features. In turn, to the extent that the presence of features increases our ability to distinguish single-component from multi-component deposits, landform (or at least soil type) and the presence of ground stone or ceramic artifacts should be given some consideration in evaluating the research potential of sites in the area.

Based on these considerations, if an archaeological inventory is to be even modestly successful at predicting the identification of single-component deposits, at least three characteristics need to be monitored - the relative abundance of dating information, the presence or absence of discrete high-density loci, and the presence or absence of items commonly associated with the presence of features (fire-affected rock, ground stone, and pottery). The site type key provided in Table 16 is an attempt to combine very simple site type designations based on the presence of major site characteristics (as proposed by BLM) with factors Cannon and Johnson recommended. While this is not a complete paradigm, it is sufficient to address sites encountered as part of the present inventory.

Seven site types are recognized within this typology. Type 1 is your ubiquitous diffuse lithic scatter, a location at which debitage is present in the absence of temporally diagnostic artifacts, concentrations, special items, or formed tools. Type 2 contains a debitage scatter with the addition of one or more shaped tools. Type 1 and 2 sites would not appear to be likely locations at which to find single component loci with research potential. Types 3, 4, and 5 introduce temporally diagnostic artifacts (most often projectile points), concentrations (typically defined based on debitage density), or special items (most often ground stone) into the mix. Depending on site specific characteristics (relative abundance of datable and special items, discreteness and intensity of the concentration, and

association of items with the concentration), these site type may hold some research potential. It is with types 6 and 7 that one sees a coalescence of characteristics that truly hold a potential for the site to contain single component loci with research potential. Datable artifacts, concentrations, and special items a(at Type 7 sites) are present, holding out the potential that discrete, single component occupation episodes may be reflected. It is important to remember that some data categories need to appear "in abundance" if a site is to be deemed as having research potential. A site with a limited debitage concentration, a single projectile point, and a single piece of ground stone will qualify as a Type 7 site, but such a site would likely have limited potential to yield the tightly defined single component research target sought after by Cannon and Johnson. Sites of a type should be compared with one another to determine which are the most representative.

Table 16. Proposed Site Type Key

Site Type	Datable Material Potential	Concentrations Present	Special Items Present	Lithic Tools Present
1	-	-	-	-
2	-	-	-	+
3	-	+	-	+
4	+	-	-	+
5	+	-	+	+
6	+	+	-	+
7	+	+	+	+

8.0 Results of The Inventory

Archaeological fieldwork conducted on behalf of the EPP included a Class III examination of two previously un-inventoried segments of the alignment, and Storage Areas 1 and 3. Emphasis was placed on identifying and recording cultural resources present within those previously un-inventoried segments. Fieldwork resulted in the examination of 49.4 acres. Previously recorded sites are listed first, followed by the tabulation of recorded isolates and the description of previously unidentified sites.

8.1 Previously Recorded Archaeological Resources

Archival research resulted in the identification of seventeen previously recorded sites that are present, in part or in whole, within the APE (Table 17, Figure 7). Fourteen are prehistoric in age, two are historic in age, and one contains evidence use during both periods. Prehistoric sites typically consist of smaller lithic scatters. One larger, more complex scatter was recorded near a spring. All of the historic period sites relate to mining.

Table 17. Previously Recorded Sites Within the EPP APE

EXCLUDED

Review of agency case files indicate that previously recorded sites located within the APE have been subject to previous BLM / SHPO consultations regarding National Register eligibility and a project effect determination. Two sites determined to be National Register eligible have been treated in advance of a proposed undertaking. Many of the previously recorded sites were subsequently impacted as a result of authorized actions. On examination of available data, BLM determined that existing eligibility determinations and treatment levels are adequate, and that there was no need to revisit or update previously recorded sites within the APE.

Figure 7. Previously Recorded Site Locations

EXCLUDED

8.1.1 CrNV-12-9948 (26EU4649)

EXCLUDED

Figure 8. Inventory and Site Locations - Victory Highway Area

EXCLUDED

8.2 Recorded Archaeological Resources

8.2.1 Recorded Isolated Artifacts and Features

A total of 3 isolates were identified as a result of the present inventory (Table 18, Figures 9 and 10). Two are prehistoric in age. They represent individual pieces of lithic debitage. The remaining isolate was historic in age. It consisted of a crushed piece of 8 inch diameter iron pipe which appears to date to the first half of the twentieth century.

Table 18. Isolates Identified Within the EPP APE

EXCLUDED

8.2.2 Recorded Sites

One previously undocumented archaeological site was identified as a result of the present inventory (Figure 8b).

8.2.2.1 CrNV-11-17802 (26EU7242)

EXCLUDED

Figure 9. Inventory and Site Locations - North Area

EXCLUDED

Figure 10. Inventory and Site Locations - South Area

EXCLUDED

9.0 Eligibility Recommendations

An important component of an intensive inventory is the development of recommendations regarding the National Register eligibility of identified resources. Eligibility is based on a consideration of two site characteristics – significance and integrity. Significance assesses the merits of a resource as measures against four criteria - does it contribute to a major pattern in history (Criterion A), is it associated with an important individual (Criterion B), is it an exemplary example of a distinctive type (Criterion C), or is it capable of contributing information relevant to important historic or prehistoric research questions (Criterion D)? Historic contexts provided in Chapter 4 of this report provide a substantive means of judging site eligibility, especially with regard to eligibility based on Criterion D. Those context provide relevant research questions and a discussion of pertinent data needs. Integrity refers to the authenticity of a property's historic or prehistoric period. Integrity is measured based on seven elements – location, design, setting, materials, workmanship, feeling, and association.

9.1 Previously Recorded Archaeological Resources

Archival research resulted in the identification of seventeen previously recorded sites that are present, in part or in whole, within the APE (see Table 17). Fourteen are prehistoric in age, two are historic in age, and one contains evidence use during both periods. Review of agency case files indicate that all of the previously recorded sites located within the APE have been subject to previous BLM / SHPO consultations regarding National Register eligibility. Two sites determined to be National Register eligible have been treated in advance of a proposed undertaking (see discussion in section 3.1.2 of this report). On examination of available data, BLM determined that existing eligibility determinations remain appropriate and do not need to be revisited.

9.1.1 CrNV-12-9948 (26EU4649)

Fawcett (2005) noted that the Victory Highway has been determined eligible for listing on the National Register (no citation was provided documenting this determination). As he notes, the goal is to determine whether individually recorded segments of roadway contribute to the eligibility of this National-level, transportation-related property.

The segment recorded as a part of the present effort represents a portion of the old Victory Highway that was abandoned in 1925 and that saw little if any subsequent use. It is unlikely that many segments of the old original roadway remain in as pristine a condition. As such, it is recommended that the segment recorded herein does contribute to the National Register eligibility of the Victory Highway based on Criterion A due to its strong association with that major, National-level transportation corridor.

9.2 Recorded Isolated Artifacts

Appendix E of the Protocol Agreement between the BLM and the SHPO states that isolated artifacts, and isolated or unassociated features are not eligible for listing on the National Register of Historic Places. Three isolated artifacts were identified as a result of the present inventory effort (see

Table 11). Based on directions provided in the Protocol Agreement, it is recommended that these isolated artifacts are not eligible for National Register listing.

9.3 Recorded Sites

One site was recorded as a result of the present inventory. A National Register eligibility recommendation for that site is provided below.

9.3.1 CrNV-11-17802 (26EU7242)

Site CrNV-11-17802 (26EU7242) consists of a prehistoric period dispersed lithic scatter. The site is assigned to Prehistoric Site Type 1 as defined in Section 7.2 of this report. Sites assigned to this type consist of a simple scatter of lithic debris. Concentrations, formed tools, temporally diagnostic artifacts, or items commonly associated with the presence of features are not present. Based on these considerations, it is recommended that the site is not eligible for listing on the National Register based on any of the four criteria.

10.0 Management Recommendations

10.1 Project Effect Considerations

Consistent with terms of our fieldwork authorization, we examined (to Class III standards) two previously un-inventoried segments of the proposed EPP corridor, and alternate material Staging Areas 1 and 3. In total, 49.4 acres were inventoried. No potentially eligible sites were found along the inventoried corridor segments. As a result, no re-routes were proposed or examined as part of the archaeological inventory process.

Three isolated artifacts were identified as a result of the present inventory effort. It is recommended that based on the State Protocol Agreement these isolated artifacts are not eligible for listing on the National Register of Historic Places. EPP-related impacts to these isolates need not be considered further.

Seventeen previously recorded sites are present, in part or in whole, within the EPP APE. The eligibility of these resources has been reviewed as part of previous consultations between the BLM and SHPO. Based on those agency consultation, two sites were determined to be National Register eligible. In both cases, a treatment plan was developed, reviewed, and implemented (see discussion in section 3.1.2 of this report). Many of the previously recorded sites have experienced some level of impact as a result of post-consultation activities. On examination of available data, BLM determined that existing eligibility determinations and treatment levels are adequate. As a result, EPP-related activities will not impact intact, previously recorded National Register eligible properties.

Table 19 Eligibility of Cultural Resources in the EPP APE

EXCLUDED

Archival research identified a previously recorded site located well outside of the present APE. By logical extension, it was anticipated that this site, the Victory Highway (CrNV-12-9948), would cross the EPP APE. The location of this crossing was identified and the earlier site form was updated to include the new segment. It is recommended that recorded segments of the old highway contribute to the National Register eligibility of the Victory Highway based on Criterion A. With careful construction planning, it is recommended that the proposed project will not cause any additional impact to the this segment of the Victory Highway beyond what has occurred previously. To insure compliance with this recommendation, it is proposed that the BLM include in its project authorization a stipulation that the BLM review and approve the exact placement of the pipeline within 200 feet either side of where it crosses the Victory Highway.

One archaeological site was identified and recorded as a result of the present inventory effort (CrNV-11-17802 [26EU7242]). It is recommended that this site is not National register eligible.

In summary, if the above mentioned recommendations are accepted, then the proposed EPP will not impact National Register eligible properties.

10.2 Native American Consultation

Federal law and agency guidance require the BLM to consult with Native American tribal governments regarding the identification of cultural values, religious beliefs, and traditional practices that may be affected by actions on BLM-administered lands. This consultation includes the identification of places (i.e., physical locations) of traditional cultural importance to the affected Native American tribes. Places that may be of Native American traditional cultural importance include, but are not limited to locations associated with traditional beliefs concerning tribal origins, cultural history, or the nature of the world; or locations where religious practitioners have gone or go to perform ceremonial activities based on traditional cultural rules or practice; ancestral habitation sites; trails; burial sites; and places from which plants, animals, minerals, and waters believed to possess healing powers or used for other subsistence purposes, may be taken.

In 1992, the National Historic Preservation Act (NHPA) was amended to allow for the listing of traditional cultural properties (TCPs) on the National Register of Historic Places. If a resource has been identified as having importance in traditional practices and the continuing cultural identity of a community, it may be considered a traditional cultural property (TCP). In addition to NRHP eligibility, some places of cultural and religious importance may also require evaluation based on other federal laws, regulations, directives, or policies. These include, but are not limited to, the Native American Graves Protection and Repatriation Act of 1990, American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act (ARPA) of 1979, and Executive Order (EO) 13007 (Sacred Sites) of 1996.

The effects of federal undertakings on properties of religious or cultural significance to contemporary Native Americans are considered under provisions of EO 13007, American Indian Religious Freedom Act, and recent amendments to the NHPA. As amended, the NHPA now integrates Indian tribes into the Section 106 compliance process. Furthermore, under the Native American Graves Protection and Repatriation Act, culturally affiliated Indian tribes and the BLM jointly may develop procedures to be taken when Native American human remains are discovered on federal land.

Tribal ethnographic resources are associated with the cultural practices, beliefs, and traditional history of a community. In general, ethnographic resources include places in oral histories or traditional places, such as particular rock formations, geothermal water sources, or a rock cairn; large areas, such as landscapes and viewscapes; sacred sites and places used for religious practices; social or traditional gathering areas, such as racing grounds; natural resources, such as plant materials or clay deposits used for arts, crafts, or ceremonies; and places and natural resources traditionally used for non-ceremonial uses, such as trails or camping locations.

The BLM, Elko District, Tuscarora Field Office has consulted and shared information with groups listed in Table 20. Consultation and communication with these tribal/band governments have included letters, phone calls, and visits with the individual Tribal/Band Councils. Consultation will be ongoing throughout the life of the project. In addition to tribal consultation efforts, results of previous analyses were reviewed. This focused on ethnographic studies conducted over the last 20 years, and background research and information provided through Tribal consultation for current and on-going projects across the District. Identified issues of concern include the overall health of water sources, riparian species, and historic remains (cultural resources).

Table 20. Summary of Native American Consultation Activities

Name of Tribe or Band	Date of Contact	Type of Contact	Comments/Notes
Te-Moak Tribe of Western Shoshone	11-19-2013	Council Meeting	Information sharing at Councils request. No Comments or concerns provided. Requested a copy of the EA draft for review.
Battle Mountain Band	07-25-2013	Council Meeting	Information sharing at Councils request. No Comments or concerns provided.
Elko Band	07-31-2013	Council Meeting	Information sharing at Councils request. No Comments or concerns provided.
	11-19-2013	Council Meeting	Information sharing at Councils request. No Comments or concerns provided.
South Fork Band	08-01-2013	Council meeting	Meeting cancelled.
	11-18-2013	Council Meeting	Information sharing at Councils request. No Comments or concerns provided.
Wells Band	08-19-2013	Council meeting	Information sharing at Councils request. No Comments or concerns provided.
	11-18-2013	Council Meeting	Information sharing at Councils request. No Comments or concerns provided.

To date, no known or identified issues of traditional value or other concern have been identified within the project area as a result of consultation efforts. No pre-contact era or Tribally identified archaeological sites of interest have been located within the project area. Existing ethnographic information indicates that two TCPs exist, approximately six and twelve miles west of the proposed project area, well outside the area that would experience any impact. Therefore, no effects to issues of Tribal values or concerns are anticipated as a result of the currently proposed project.

10.3 Other Management Considerations

This inventory was conducted along an alignment identified in the field (lath and flagging) by the proponent. Archaeological field crews maintained careful records of areas they examined. Electronic shape files showing the detailed inventory area have been provided to the proponent and the BLM. Results of our field effort and conclusions drawn thereon are valid as long as construction activities are limited to the identified corridor and associated project areas. Should it be necessary to relocate some portion of the alignment, or to introduce project elements not previously considered, then additional archaeological inventory activities may be necessary.

Techniques and methods used during this inventory were such that existing resources of a prescribed size (30 meters across, and a sample of smaller resources) in the study area that were visible to surface examination have been identified. Every reasonable effort was made to identify cultural resources in the study area. If, however, prehistoric or historic period resources are subsequently discovered that could be adversely affected by project-related activities, all such activities should cease immediately and the BLM should be contacted.

Based on previous archaeological excavations in the region, human remains are not typically found on area archaeological sites (Fawcett, personal communication). Although improbable, it is possible that prehistoric burials might be found in the study area (none were apparent based on an examination of the ground surface). Should human remains be encountered while engaged in construction activities, work must cease in the immediate area and the contractor must immediately report the finding to the Tuscarora Field Office of the Bureau of Land Management and other designated officials.

Zeier & Associates, LLC prepared this report at the direction of Wood Rodgers and the Prospector Pipeline Company for use by the BLM as the intended beneficiary of this work. Interpretations, conclusions, and recommendations contained within the report are based in part on information provided by Wood Rodgers and Prospector Pipeline, and presented in other reports that are cited in the text and listed in the references. This report is subject to limitations and qualifications inherent to the referenced documents.

Neither Zeier & Associates, LLC nor any of the authors of this document have any present or contingent material interest in the outcome of this work, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of Zeier & Associates. Zeier & Associates has no prior association with the proponent in regard to the business assets that are the subject of this document. Zeier & Associates has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence. Zeier & Associates' fee for preparing this document is based on normal professional rates plus reimbursement of incidental expenses. The payment of that professional fee is not contingent upon the outcome of the work reported herein.

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Attachment One

Previous Inventories

EXCLUDED

Attachment Two

Previously Recorded Cultural Resources

EXCLUDED

Attachment Three

IMACS Site Forms

EXCLUDED

EXHIBIT G

NOTICE OF APPLICATION

AND PROOF OF PUBLIC NOTICE

Public Notice or Legal Notice

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA, NOTICE OF APPLICATION UNDER NEVADA UTILITY ENVIRONMENTAL PROTECTION ACT FOR PERMIT TO CONSTRUCT NATURAL GAS PIPELINE IN EUREKA COUNTY

Pursuant to the Nevada Utility Environmental Protection Act set forth in NRS 704.820 through NRS 704.900, inclusive ("UEPA"), on April 29, 2013, Prospector Pipeline Company ("Prospector") submitted to the Public Utilities Commission of Nevada ("Commission") an initial application for a permit to construct approximately 18 miles of underground natural gas pipeline and associated facilities (collectively, the "Pipeline") to be located in Eureka Counties, Nevada, which matter has been assigned Docket No. 13-04035 by the Commission (NRS 704.820-900; NAC 703.415-427).

Notice is hereby given to persons residing in the municipalities in which any portion of the pipeline is to be located that Prospector has filed or will file with the Commission an application ("Application") under UEPA, in Docket No. 13-04035, for a permit to construct the Pipeline on a combination of public and private lands located approximately 6 miles northwest of the City of Carlin, Nevada, in the vicinity of T 36N R 50E; T 35N R 50E; T 35N R 51E; T34N R 51E; and T 34N R 52E, M.D.B.&M, and located entirely within Eureka County, Nevada. The Application includes, without limitation, a request for the UEPA permit, a description of the proposed pipeline and the location thereof, the impact of the Pipeline on the environment and a description of how the Pipeline will serve the public interest. Prospector is concurrently pursuing a right of way grant from the Bureau of Land Management, within which right of way Prospector proposes to locate the Pipeline. Information about the Application may be obtained from the Commission and protests and written comments about the Application and permit must be filed with the Commission as provided by law. Dated this 3rd day of April, 2014.

Battle Born Media
10120 W Flamingo Rd 4629
LAS VEGAS, NV, 89147
7752894491

Date: 3/28/2014 10:48:00 AM (Pacific Time)

Transaction ID: 558551202

Ref ID: ADVERTISING

Purchase Order #:

Account #: **********2903

Auth:218274

Amount: $56.00

Signature:

I, STEVEN STRICKLAND, agree to pay the above amount according to the card issuer agreement. (Merchant agreement if credit voucher)

Thank You!

EXHIBIT H

PROOF OF APPLICATION SUBMITTAL TO

NEVADA STATE CLEARINGHOUSE,

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION DEPARTMENT OF

CONSERVATION AND NATURAL RESOURCES, AND

PROOF OF SUBMITTAL TO CLERK EUREKA COUNTY, AND

CERTIFICATE OF SERVICE

WOOD RODGERS

April 3, 2014

Nevada State Clearinghouse
Skip Canfield
Nevada Division of State Lands
901 S. Stewart St, Suite 5003
Carson City, NV 89701-5246
(775) 684-2723

RE: Utility Environmental Protection Act Permit Application
Amended Filing per NRS 704.870(2)(b)
Eureka Pipeline Project
Docket No.: 13-04035

Dear Mr. Canfield:

On behalf of Prospector Pipeline Company (applicant), enclosed please find one hard copy of the above referenced PUCN application packet for the Eureka Pipeline Project.

The State Clearinghouse review period will correspond with the notice period for the PUCN.

Thank you for your assistance and if you should have any questions regarding the application materials, please let us know.

Sincerely,
WOOD RODGERS, INC.

Leslie M. Burnside

Leslie M. Burnside, Associate
Environmental Program Manger

Letter of Transmittal

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

Date: April 3, 2014

Job No.: 2811.008

To: Eureka County

Attn: Clerk - Treasurer

Address: 10 South Main Street

City: Eureka **State:** Nevada **ZIP:** 89316

Phone:

From: Leslie Burnside

Re: Eureka Pipeline Project UEPA Application

These are transmitted as checked below:

☐ For Approval ☐ For your use ☐ As requested ☐ For review/comment

We are sending you:

Mail

We are sending you:

☐ Exhibits ☐ Plans
☐ Prints ☐ Maps
☐ Copies
☐ Specifications
☐ Contract/Change Order
☒ Other: UEPA Application

Copies	Description
1	Hard Copy of Public Utilities Commission UEPA Application

Comments:

5440 Reno Corporate Drive, NV 89511 Tel: 775.823.4068 Fax: 775.823.4066
www.woodrodgers.com

Letter of Transmittal

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS

Date: April 3, 2014

Job No.: 2811.008

To: Nevada Dept. of Environmental Protection

Attn: Dept. of Conservation & Natural Resources

Address: 901 S. Stewart Street, Suite 4001

City: Carson City **State:** NV **ZIP:** 89701

Phone:

From: Leslie Burnside

Re: **Eureka Pipeline UEPA Permit Application**

We are sending you:

Aerospeed/Hand Delivery

We are sending you:

☐ Exhibits ☐ Plans
☐ Prints ☐ Maps
☐ Copies
☐ Specifications
☐ Contract/Change Order
☐ Other: ____

These are transmitted as checked below:

☐ For Approval ☐ For your use ☐ As requested ☒ For review/comment

Copies	Description
1	Hard copy of the above referenced PUCN application packet for the Eureka Pipeline Project

Comments:

5440 Reno Corporate Drive, NV 89511 Tel: 775.823.4068 Fax: 775.823.4066
www.woodrodgers.com

CERTIFICATE OF SERVICE

I am a resident of the State of Nevada, over the age of eighteen years, and not a party to the within application. My business address is Wood Rodgers, Inc., 5440 Reno Corporate Drive, Reno, NV 89511. On April 3, 2014, I served the

UTILITY ENVIRONMENTAL PROTECTION ACT PERMIT APPLICATION OF PROSPECTOR PIPELINE

☐ **BY FAX:** by transmitting via facsimile the document(s) listed above to the fax number(s) set forth below on this date before 5:00 p.m.

☐ **BY HAND:** by personally delivering the document(s) listed above to the person(s) at the address(es) set forth below.

☒ **BY MAIL:** by placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at Reno, Nevada addressed as set forth below.

Clerk – Treasurer
Eureka County
10 South Main Street
Eureka, Nevada 89316

☐ **BY OVERNIGHT MAIL:** by causing document(s) to be picked up by an overnight delivery service company for delivery to the addressee(s) on the next business day.

☒ **BY PERSONAL DELIVERY:** by causing personal delivery by **Leslie Burnside** of the document(s) listed above to the person(s) at the address(es) set forth below.

Nevada State Clearinghouse
Department of Administration
Nevada Division of State Lands
901 S. Stewart Street, Suite 5003
Carson City, Nevada 89701

Office of the Administrator
Nevada Division of
Environmental Protection
Department of Conservation
and Natural Resources
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701

I declare under penalty of perjury under the laws of the State of Nevada that the above is true and correct.

Executed on April 3, 2014 at Reno, Nevada.

Leslie M. Burnside

EXHIBIT I

PERMITS OBTAINED

Standard Permit Application

NDOT Use Only	
Milepost:	SR 766 EU 2.0230 - SR 766 EU 2.2940
System ID #:	202153
Permit #:	202153
Work Order #:	20151311
Permit Type:	Underground And Aerial
Permit Category:	CAT I A - UNDERGROUND - LESS THAN 2.5 MILES
Type of Activity:	UNDERGROUND GAS, PRIMARY

REVOCABLE APPLICATION AND PERMIT FOR OCCUPANCY OF NEVADA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY

(Under the provisions of NRS 408.423, 408.210 and NAC 408)

Applicant Information

Name:		Brian		Habersack	
	Prefix	First	Middle	Last	Suffix
Company Type:	Permitting				
Company Name:	Prospector Pipeline Company				
Title:	Vice President, Operations				
Address:	2981 Gold Canal Drive				
	Rancho Cordova		California	95670	
	City		State	Zip Code	
Number:	(916) 859-4700				
	Phone		Fax		
Email:					

Location and/or Occupancy is Proposed

Local Name of Highway:	SR-766			
Street Address:	Gold Quarry Road			
	Street Address or Nearest Cross Street			
Starting Location:	Eureka	STATE ROUTE	766	2.0230
	Nevada County	Route Type	Route	Milepost #
Ending Location:	Eureka	STATE ROUTE	766	2.2940
	Nevada County	Route Type	Route	Milepost #
District:	District 3 - Elko			

Applicant Name: Brian Habersack System ID #: 202153 Permit #: 202153

Work Description

Describe in details, number of participants, proposed route, scheduled dates and time.
(Attach 4 sets of plans and/or drawings of proposed route.)

Description Title: 766 Gas Line

Description Details: The Prospector Pipeline Company proposes to construct and maintain an approximate 18+/- mile underground gas pipeline to supply natural gas from the North Elko Pipeline for delivery to the Newmont Leeville and Gold Quarry mines. The pipeline, referred to as the Eureka Pipeline Project would be prodominately located on BLM and private lands in Eureka County, Nevada. A portion of this pipeline will encroach on DNOT R/W on SR-766 at EU MP-2.01 The proposed pipeline would enter NDOT R/W and run parallel to the roadway and outside of the traveled way for approximately 900=/- feet (from EU MP-2.07 to EU MP-2.29) before turning to cross the roadway (at EU MP 2.07). The parallel and backfill methods while the crossing will be achieved with horizontal directional

Number of Participants: 0 Minimum 0 Maximum

Closure Information: Lane Closure: No Road Closure: No Shoulder Closure: No

Time Schedule:

Please include (Start Date, Start Time, End Date, End Time, and Location)

Required Documents: Traffic Control, Desk Audit, Plan, Bore Detail, Signed Application, UFO Docs, Vicinity Map

Additional documents may be required depending on the type of work description. You will be notified of the additional documents if necessary.

Applicant Name: Brian Habersack | System ID #: 202153 | Permit #: 202153

Standard Terms and Conditions

1. PERMITEE hereby acknowledge that he had read and received a copy of the specific Terms and Conditions relating to Right-of-Way Occupancy permits issued by the State of Nevada Department of Transportation, and accepts said terms and conditions and any additional terms and conditions stated in this permit.

2. SPECIFIC TERMS AND CONDITIONS APPURTENANT TO THIS PERMIT IS LISTED BELOW.

3. THE PERMIT SHALL BE SIGNED AND RETURNED TO THE DISTRICT OFFICE

Additional Terms and Conditions

1. PERMITTEE shall notify NDOT District III Elko Permits office two working days before doing any work in the highway right-of-way.

2. All work performed within the highway right-of-way shall be in accordance with the State of Nevada "Standard Specifications for Road and Bridge Construction", 2001 edition, & "Standard Plans", 2010 edition.

3. PERMITTEE shall observe all applicable safety regulations in accordance with the "Manual on Uniform Traffic Control Devices".

4. PERMITTEE shall comply with the National Cooperative Highway Research Program (NCHRP) Report 350 requirements for work zone devices.

5. PERMITTEE shall ensure that when workers are within NDOT right-of-way their apparel complies with ANSI/ISEA 107-2004 standards for high visibility with a minimum of Class II for daylight or Class III for low light conditions.

6. PERMITTEE shall, prior to commencing any work, develop and present a traffic control plan to the District Engineer for his written approval.

7. PERMITTEE shall at no time during construction allow construction vehicles or equipment to remain on the paved roadway of SR-766, and during non-working hours, PERMITTEE shall store all equipment a minimum of thirty (30) feet from the edge of the roadway unless equipment is protected by temporary barrier rail.

8. PERMITTEE shall be responsible for maintaining the integrity of the roadway surface. Dust, dirt, mud, gravel, etc. carried onto the roadway surface shall be cleaned off on a regular basis (at least once a day or as requested by NDOT personnel). Failure to comply may result in the Nevada Department of Transportation having the roadway cleaned and the cost for the clean-up billed to PERMITTEE.

9. Temporary pollution control and erosion control work shall conform to the requirements of NDOT's "Construction Site Best Management Practices (BMP's) Manual," hereinafter referred to as the Manual, and addenda thereto issued up to and including, the date of advertisement of the contract. The Manual is available for purchase, or can be accessed on the NDOT website. Adhere to the Manual's minimum requirements found in Section 2 for the selection and implementation of construction site BMP's. The requirements of the Manual are minimum requirements and additional BMP's may be required to meet permit requirements and the requirements specified herein. Know and fully comply with the provisions of the Manual, and Federal, State, and local regulations governing storm and non-storm water discharges from both the project site and areas of disturbance outside the project limits during construction.

10. PERMITTEE shall have any open pits or trenches within the right-of-way of SR-766 fenced or barricaded during construction hours. Any open pits or trenches within the right-of-way shall be protected by concrete barrier rail, interlocking and in good, sound condition, covered with traffic-rated plates if approved by the District Engineer in writing, or backfilled after working hours.

11. PERMITTEE shall locate bore pits behind portable concrete barrier rail, interlocking and in good, sound condition, as shown on the plans. Bore shall be at a minimum depth of 8 feet below the surface of SR-766 as shown on the plans.

12. PERMITTEE shall place a warning tape one foot above the gas line.

13. PERMITTEE shall seed disturbed areas with a seed mixture recommended by the local Bureau of Land Management office for this area.

14. PERMITTEE shall restore any disturbed portion of the right-of-way (shoulders, fences, etc.) to its original condition or better after all construction is completed. Any disturbed highway monuments or permanent survey markers must be replaced by a Nevada licensed PLS in accordance with State law and Department policy.

15. PERMITTEE shall supply as-built plans showing the actual location of these facilities as well as the correct location of other existing utilities in relation to them. Field adjustments of the proposed facilities must be approved by the District Engineer.

* Required Fields Brian Habersack 202153 202153

Applicant or Authorized Agent Signature
By signing this application you agree to all terms and conditions appurtenant to this permit.
Signed application attached
* Printed Name * Signature
* Date

This Right-of-Way Occupancy permit is granted to the PERMITTEE in accordance with the provisions of Chapter 408 NRS and subject to the terms and conditions stipulated to perform the work described.

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION

Authorized Signature(s)

☐ Traffic ☐ Inspector ☒ District Engineer ☐ Permit Coordinator ☐ Director ☐ Assistant Director

District	Printed Name	Signature	Date
3	Michael Murphy		12/09/13

Comments:

725-1

RECEIVED
NOV 1 2013
NDOT DIST II

Fee	$600.00
Permit No.	202153
Milepost	EU-2.023 to EU 2.294
District	III
District No.:	202153
Applicant:	Prospector Pipeline Company
Type of Work:	Underground Gas
W.O.#	2015131

FOR DEPARTMENT USE ONLY

REVOCABLE APPLICATION AND PERMIT FOR OCCUPANCY OF NEVADA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY
(Under the provisions of NRS 408.423, 408.210 and NAC 408)

1. Location where excavation, construction, installation and/or occupancy is proposed

SR766	EU PM 2.07
Local name of highway	Street address or nearest cross street

2. Describe in detail the type and scope of work; capacity or size of facility; stages and time frame for development; scheduled dates for start and completion. Attach 4 sets of detailed plans or drawings.

The Prospector Pipeline Company proposes to construct and maintain an approximate 18± mile underground gas pipeline to supply natural gas from the North Elko Pipeline for delivery to the Newmont Leeville and Gold Quarry mines. The pipeline, referred to as the Eureka Pipeline Project would be predominately located on BLM and private lands in Eureka County, Nevada. A portion of this pipeline will encroach on NDOT R/W on SR 766 at EU PM 2.01

The proposed pipeline would enter NDOT R/W and run parallel to the roadway and outside of the traveled way for approximately 900± feet (from EU PM 2.07 to EU PM 2.29) before turning to cross the roadway (at EU PM 2.07). The parallel and backfill methods while the crossing will be achieved with horizontal directional drilling so as to not disturb the existing roadway surface.

PIPELINE TIE-IN TO EXISTING AT EU PM 1.06 - NORTH R/W LINE. MJC

3. PERMITTEE hereby acknowledges that he has read and received a copy of the specific Terms and Conditions Relating to Right-of-Way Occupancy Permits issued by the State of Nevada Department of Transportation, and accepts said terms and conditions and any additional terms and conditions stated in this permit.

4. **SPECIFIC TERMS AND CONDITIONS APPURTENANT TO THIS PERMIT ARE LISTED ON PAGE 2.**

5. THE PERMIT SHALL BE SIGNED AND RETURNED TO THE DISTRICT OFFICE.

Prospector Pipeline Company (Brian Habersack)	Brian B. Habersack
Name of PERMITTEE (Type or Print)	Signature of PERMITTEE
2981 Gold Canal Drive	Vice President, Operations (916) 859-4700
Address	Title Phone No.
Rancho Cordova, CA 95670	10/29/13
City, State, Zip	Date of Application
(916) 859-4700 (916) 859-4747	n/a
Phone No. Fax No.	Permittee's I.D. No. or Parcel No.

NDOT
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Rev. 10/03