U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-101-EA

CASEFILE/PROJECT NUMBER COC69874

PROJECT NAME: Sagebrush – pipeline expansion

LEGAL DESCRIPTION:

Sixth Principal Meridian, Colorado
T. 2S., R. 98W.
sec. 19, NE¼SE¼,
sec. 20, lots 4, 5, 6, 7,
sec. 28, lots 4, 5, 6, 7, NE¼SW¼, W¼SE¼,
sec. 29, lots 1, 2, 8, 10, 11, 12, 14,
sec. 30, SE¼SE¼,
sec. 31, lots 6, 9, 10, 16,
sec. 32, lot 8, NW¼SE¼,
T. 2S., R. 99W,
sec. 36, SE¼SE¼ .
T. 3S., R. 98W,
sec. 7, E½NW¼.
T. 3S., R. 99W,
sec. 1, lot 1, SW¼NE¼, NE¼SW¼, SW¼SW¼,
sec. 11, N½NE¼, SW¼NE¼, SE¼NW¼, SW¼SW¼,
sec. 14, NW¼NW¼,
sec. 15, E½NE¼, S½NE¼, NW¼SE¼.

APPLICANT: Sagebrush Pipeline LLC

ISSUES AND CONCERNS: Sagebrush Pipeline is an affiliate of Riata Energy and will be building their pipelines. On May 4, 2006, Sagebrush dropped 3 segments of the original proposal that went cross-country. The proposed lines now follow existing roads and/or pipelines. The new line was entered into caret as of May 8.

Additional proposals involved cross-country routes, lines that have not been properly transferred, alternate routes and sage grouse habitat. These pipelines will not be addressed in the current EA.

Sagebrush has contracted with another company to analyze older lines that Riata has acquired that the companies may use or update. These actions will also be proposed in a separate action.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: These pipelines will be for Riata wells. The plant and existing pipelines that were built by ROC Gas will be assigned to Sagebrush Pipelines in a separate action. The application refers to these facilities as the Sagebrush Plant, but application for assignment has not been received or approved.

Proposed Action: Sagebrush Pipeline LLC proposes the construction of gathering lines to extend the service area of the existing ROC gas processing plant. The line will connect into the ROC line in T2S., R99W., section 19 and will follow Rio Blanco County (RBC) Road 85 and the William's/Bargath pipe line. Two branches will then follow existing roads to the southwest through BLM and private lands. The northern branch of up to 8 inch line will follow BLM Road 1019 to the southwest and then follow RBC Road 144 up Wagonroad Ridge to connect the 299-31-1, and 399-2-1, 15-1, 15-2, 15-3, 22-1 and other proposed wells. This is the same route that Enterprise has proposed and is being analyzed in CO-110-2006-068-EA. The southern branch will follow RBC Road 26 to the southwest and then BLM Road 1184 up Black Sulphur Creek to the 298-7-2 and 7-3 wells with up to 8 inch line going up Black Sulphur and up to 10 inch line along RBC Roads 85 and 86 and connecting into the existing ROC line. On-sites were conducted on the proposed wells in summer, 2005. A map is attached as Exhibit A.

The line will operate year around and a 30 year term is requested. The volume will vary through the various legs of the system, with a total capacity of 80,000 MSCFD. The pipeline will be constructed of up to 10 inch buried steel pipeline, typically .219 wall of x-42. This project will include approximately 69,800 feet of line, of which 50,595 feet will be on public lands. The width of the permanent ROW will be 30 feet for a total permanent ROW of 34.85 acres +/-. An additional 20 foot temporary construction width would add 23.23 acres of disturbance for a total of 58.08 acres impacted by the project. The ROW width will overlap existing ROWs. Sagebrush initially proposed that construction would begin in April or May, of 2006.

Related structures along the route will include valves, pigging stations, cathodic protection equipment and related structures. Sagebrush has included in their application their Standard Construction Guidelines that they provide their contractors, which is attached as Exhibit B to this document. A cultural clearance has been contracted and will be conducted as soon as weather conditions permit. A raptor survey was conducted by WRFO staff.

No Action Alternative: The pipeline would not be authorized and would not be constructed. Riata would have to develop an alternative method to deliver gas from current and future wells.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: Proposed lines that crossed sensitive species habitat, fragile soils, and undisturbed vegetation, and were to serve wells that may not be drilled, were dropped from the proposal. Sagebrush will try to find routes with less chance of impact if a pipeline is needed in the future.

NEED FOR THE ACTION: Sagebrush Pipeline requests this action to provided needed transportation for natural gas produced by approved Riata Energy wells.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-49 thru 2-52

Decision Language: "To make public lands available for the siting of public and private facilities through the issuance of applicable land use authorizations, in a manner that provides for reasonable protection of other resource values."

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a ten mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM_{10}) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during construction due to the combustion of fossil fuels associated with construction operations. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight short term increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants).

Unfortunately, no monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than PM_{10}. Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be near 50 micrograms per cubic meter ($\mu g/m^3$). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

Environmental Consequences of the Proposed Action: This project does not include any new pump stations, tank batteries or treatment facilities. Therefore, no new permanent air pollution emission sources are anticipated.

Air quality may be temporarily decreased during construction due to pollutants generated from construction activities. Construction equipment producing elemental and organic carbon via fuel combustion combined with surface disturbing activities that leave soils exposed to eolian processes will both increase production of particulate matter (PM_{10}) during construction. Elemental and organic carbon existing in the air as PM_{10} can reduce visibility and increase the potential of respiratory health problems to exposed parties. However, following initial construction, suggested mitigation, and successful interim reclamation, criteria pollutant levels should return to near pre-construction levels.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Disturbed areas will be restored to original contours, and revegetated as outlined in the vegetation portion of this EA. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.

Furthermore, soils stockpiled for short durations will be wetted during dry periods to reduce production of fugitive particulate matter.

Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

CULTURAL RESOURCES

Affected Environment: The proposed pipeline routes have been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006, Compliance Dated 8/16/2006, Conner and Davenport 2005, Compliance Dated 11/12/2005, Conner and Davenport 2004, Compliance Dated 8/26/2004) with four cultural resource sites and two isolated finds found in the inventoried areas. Isolated finds are generally not considered significant and will not be given further consideration.

One of the sites (5RB 60) could not be relocated at the plotted and reported location and may have been either miss-plotted or destroyed since it's recording in 1973.

One site, 5RB 5214, is located on a proposed well pad location for another company. The proposed pipeline should be on the west side of the well pad, away from the proposed pipeline. The well location proponent shall be required to do any needed mitigation to the site.

One site is a historic ranch/homestead that does not appear to be eligible for nomination to or listing on the National Register of Historic Places (NRHP).

The last site appears to be a small, limited lithic scatter, based on surface exposures, that would not be eligible for the NRHP either.

Environmental Consequences of the Proposed Action: The proposed action could potentially result in impacts to at least three known cultural resources. If mitigation measures are strictly adhered to there would be no adverse impacts to the cultural resources from the proposed action.

Environmental Consequences of the No Action Alternative: There would be no new impacts to cultural resources under the No Action Alternative.

Mitigation: 1. Site 5RB 5214 must be completely avoided by all pipeline construction activity. The site shall be fenced and completely avoided by all pipeline workers and pipeline related activities, unless the site has been previously destroyed by well pad construction.

2. Pipeline construction through site 5RB 5023 shall be monitored to ensure that no previously undetected surface features are inadvertently impacted by construction.

3. All standing or other features associated with site 5RB 4809, the homestead/ranch shall be avoided by pipeline construction.

4. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

5. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: The noxious weeds houndstongue, black henbane and mullein are known to occur in the project area. The invasive alien cheatgrass occurs through the project area primarily in association with areas of unrevegetated earthen disturbance along roads, pipelines and well locations.

Environmental Consequences of the Proposed Action: The proposed action will create about 30 acres of new earthen disturbance, which if it is not promptly and effectively revegetated with desirable species and /or treated with herbicides to eradicate noxious weeds/ cheatgrass, will be invaded and dominated by noxious weeds/cheatgrass, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project site to surrounding native rangelands resulting in a long term negative impact. The resulting proliferation of noxious weeds/cheatgrass will perpetuate a downward cycle of environmental degradation that will be largely irreversible. The will be a low likelihood of long term negative impact if the proposed mitigation is properly implemented.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: Promptly revegetate all disturbed areas not necessary for production with Native Seed mix #2 (see vegetation). The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer

MIGRATORY BIRDS

Affected Environment: The proposed pipeline system primarily involves aged stands of Wyoming big sagebrush that are variously encroached by older (sub-100 year) pinyon and juniper trees. The remainder of the route traverses woodland stands with mature elements, either widely scattered or patchily distributed among sub-mature forms (about 5%), and bottomland basin big sagebrush/greasewood sites (about 30%).

A number of migratory birds fulfill nesting functions in these woodland and shrubland habitats during the months of May, June, and July. Species associated with the shrublands are typical and widely represented in the Resource Area and region. Those bird populations identified as having higher conservation interest by the Rocky Mountain Bird Observatory/Partners in Flight program (i.e., Brewer's sparrow, green-tailed towhee) are abundant and well distributed in extensive suitable habitats throughout the Resource Area. As pinyon-juniper begins to establish on these sites, the abundance of sagebrush obligates declines and more generalized woodland species (e.g., chipping sparrow) begin to appear. Species of higher conservation interest associated with the woodlands include: black-throated gray warbler, gray flycatcher, juniper titmouse, pinyon jay, and violet-green swallow. Again, these birds appear in higher densities in mature woodland communities and only sparingly in areas of pinyon-juniper regeneration or encroachment.

Environmental Consequences of the Proposed Action: Clearing and installation of the pipeline system is expected to commence in early July and would be completed by September 2006. Based on this schedule, and considering that much of the right-of-way would lie immediately adjacent to maintained and heavily traveled county roads (unlikely to support nesting activity within 50 feet of roadside), the potential to disrupt the nesting activities of migratory birds would be limited. In the event surface disturbances during the later portion of the nesting season were limited to those portions of the right-of-way adjacent to heavy pre-existing disturbances, disruption of migratory bird nesting activity would be virtually nil.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to disrupt the breeding activities of migratory birds. Alternate actions would have similar or more substantive consequences as those discussed under the proposed action.

Mitigation: To minimize disruption of migratory bird nesting efforts, ROW clearing and pipeline installation activities that take place prior to July 15 should take place first along RBC 144 (about 7 miles) and secondly along the Black Sulphur Creek valley (3.5 miles).

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: No animals listed, proposed, or candidate to the Endangered Species Act inhabit or derive important benefit from the project area. Several BLM sensitive species are possible seasonal inhabitants of the project vicinity (i.e., Townsend's big-eared bat,

and fringed and Yuma myotis, northern goshawk), but rely on mature stands of pinyon and juniper for roosting and nesting substrate. Because areas potentially influenced by the proposed action involve only young regeneration or scattered mature trees, these project sites have no effective utility for goshawk nesting or bat roosting functions.

Environmental Consequences of the Proposed Action: The proposed action would have no reasonable probability of affecting special status animals.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would influence federally listed or BLM sensitive species.

Mitigation: None.

Finding on the Public Land Health Standard for Threatened & Endangered species: The area potentially influenced by the proposed and no-action alternatives does not currently support habitats associated with listed animal species, therefore, neither alternative would influence the applicable land health standards.

THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES (includes a finding on Standard 4)

Affected Environment: An on-the-ground inventory was conducted by BLM staff of shale outcrops occurring on some slopes in the area of T2S R98W, sec. 28 NWSE (RGU 31-8-398 pipeline). Outcroppings on both sides were inventoried also for the presence of threatened, endangered and BLM sensitive plants. No plants were located. The remainder of the routes did not encounter any other potential habitat or plants.

Environmental Consequences of the Proposed Action: The shale outcroppings could be potential habitat in the future if a seed source were to come into the area

Environmental Consequences of the No Action Alternative: None

Mitigation: If the pipeline is buried at T2S, R98W, sec. 28 NWSE where the pipeline comes down near the toe of slope, the topsoil containing the light colored shale outcropping should be set aside and then replaced in the same place when the groundwork is completed.

Finding on the Public Land Health Standard for Threatened & Endangered species: There is no reasonable likelihood that the proposed action or no action alternative would have an influence on the condition or function of Threatened, Endangered, or Sensitive plant species. Thus there would be no effect on achieving the land health standard.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

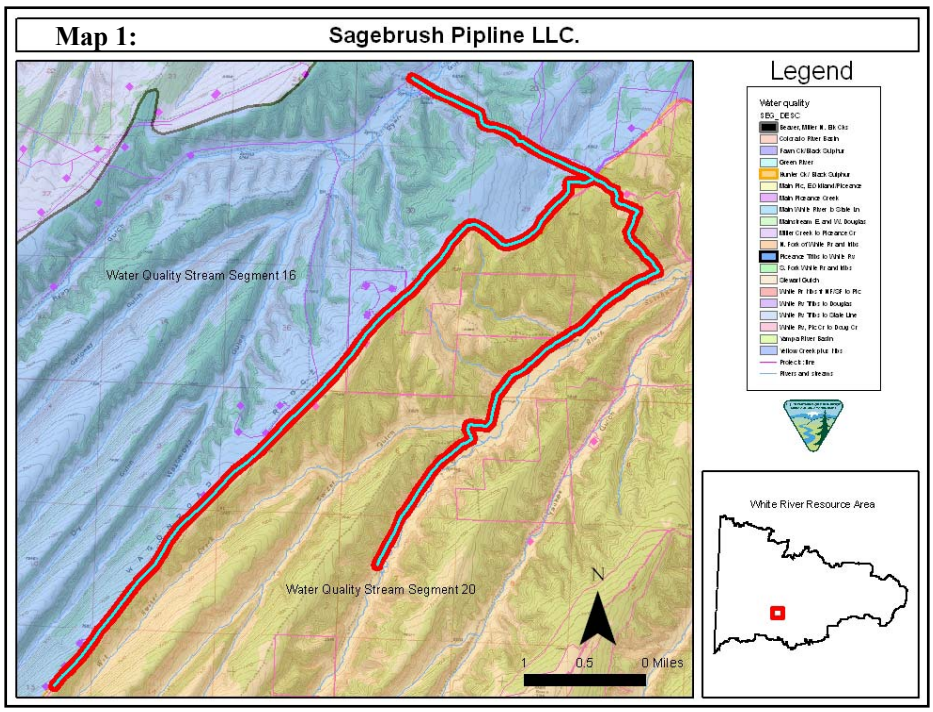
Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The operator shall be required to collect and properly dispose of any solid wastes generated by this project.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The proposed action is situated entirely within the Lower Piceance Creek 5th Level Watershed. Sixth and seventh level watersheds affected by the proposed pipeline are Ryan Gulch, Swizer Gulch, Wet Swizer Gulch, Wagon Road Gulch, and Black Sulphur Creek. The pipeline route is situated along the drainage divide between Ryan Gulch and Black Sulphur Creek as well as along BLM road 1184 adjacent to Black Sulphur Creek. Several small ephemeral tributary drainages to Ryan Gulch and Black Sulphur Creek will be directly impacted by surface disturbing activities associated with the proposed actions on BLM surface. No perennial streams will be crossed by the proposed pipeline. Map 1 (below) shows the proposed pipeline route and associated water quality stream segments.



Black Sulphur Creek (perennial) and Ryan Gulch (ephemeral) are both tributaries to Piceance Creek which is a perennial tributary to the White River. The White River is a tributary to the Green River (tributary to the Colorado River). Black Sulphur Creek is situated in stream segment 20 of the White River Basin while the affected portion of Ryan Gulch can be found in stream segment 16 of the White River Basin. Past oil and gas activities within the Black Sulphur Creek watershed have resulted in channel alteration, accelerated stream bank erosion, and increased sediment/salt loadings to the Colorado River system.

The "Status of Water Quality in Colorado –2006" (CDPHE 2006b) and Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a) were reviewed for information relating to drainages within the project area. Stream segment 16 of the White River Basin is defined as all tributaries to Piceance Creek, including all wetlands, lakes and reservoirs, from the source to the confluence with the White River, except for the specific listings in segments 17, 19, and 20. The State has classified stream segment 16 of the White River Basin as "Use Protected" and further designated as beneficial for the following uses: Warm Aquatic Life 2, Recreation 2, and Agriculture. The antidegradation review requirements in the Antidegradation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. For this reach, minimum standards for three parameters have been listed. These parameters are: dissolved oxygen = 5.0 milligrams per liter (mg/l), pH = 6.5 - 9.0, and Fecal Coliform = 2,000/100 milliliters (ml) and 630/100 ml E. coli. Numeric standards for inorganic compounds and metals can be found within Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a). Stream segment 20 of the White River Basin is defined as the mainstems of Black Sulphur and Hunter Creeks from their sources to their confluences with Piceance Creek. Segment 20 has not been designated use-protected. An intermediate level of water quality protection applies to waters that have not been designated outstanding waters or use-protected waters. For these waters, no degradation is allowed unless deemed appropriate following an antidegradation review. The state has classified segment 20 as being beneficial for the following uses: Cold aquatic life 1, Recreation 2, and Agriculture (CDPHE 2005a).

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE 2006c and 2006d, respectively) were reviewed for information related to the proposed project area drainages. Regulation No. 93 is the State's Section 303(d) list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2006 303(d) list of segments needing development of TMDLs includes two segments within the White River - segment 9b, White River tributaries North and South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development) and segment 22, tributaries to the White River, Douglas Creek to the Colorado/Utah boarder, specifically West Evacuation Wash, and Douglas Creek (sediment impairments). Regulation 94 is the State's list of water bodies identified for monitoring and evaluation, to assess water quality and determine if a need for TMDLs exists. The list includes two White River segments that are potentially impaired – 9 (Flag Creek) and 22 (Soldier Creek). Stream segments 16 and 20 were not listed.

Ground Water: Surface geologic formation at all of the proposed locations is Tertiary in age (Uinta Formation) and consists primarily of interbedded sandstone and siltstone. A review of the

US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed action. The proposed action is located in the Piceance Creek structural basin. Primary hydrogeologic units within the Piceance Basin are listed in table 1.

Table 1:

Summary of Hydrogeologic Units						
Hydrogeologic Unit	**Stratigraphic Unit**	**Physical Description**	**Thickness**	**Hydraulic Conductivity**	**Yield**	**TDS**
			(ft)	**(ft/day)**	**(gpm)**	**mg/L**
Upper Piceance Basin aquifer	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
Lower Piceance Basin aquifer	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
Fort Union aquifer	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
Mesaverde aquifer	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL
Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.						

Table information from Topper et al. (2003).

The Piceance Creek drainage basins upper and lower aquifers are separated by the semi-confining Mahogany Zone. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces (elevation at which water level would have stood in tightly cased wells, 1985/1986) within hydrogeologic units: Based on a surface elevation of 7,000 feet along Wagonroad Ridge; upper Piceance basin aquifer 600 feet, lower Piceance basin aquifer 500 feet, and Mesaverde aquifer 0 feet. Based on a surface elevation of 6,700 feet near Riata location 398-7-3 along Black Sulphur Creek approximate potentiometric surfaces are as follows: upper Piceance basin aquifer 100 feet, lower Piceance basin aquifer 0 feet, and Mesaverde aquifer +500 feet (flowing artesian). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicated that in central Rio Blanco County water wells are uncommon. Based on existing water well data near the project area, total concentration of dissolved constituents in the upper and lower aquifers is generally lower than 1000 milligrams per liter.

Environmental Consequences of the Proposed Action: Surface Water: Improper drainage from the pipeline ROW will elevate sediment/salt production from disturbed areas. Increased sediment loads to local surface water drainages will result in a sediment rich system. Sediment

rich systems are characterized by deposition and high width to depth ratios (W/D ratio) (wide shallow channels). As the W/D ratio increases, the hydraulic stress against the banks also increases and bank erosion is accelerated. Increases in the sediment supply to the channel develop from bank erosion, reducing the systems capability to transport sediment. As a result, deposition occurs, further accelerating bank erosion, and the cycle continues (Rosgen, 1996).

Construction activities may disrupt natural surface and ground water flow patterns. Altered flow patterns could disrupt natural surface and ground water recharge/discharge patterns. Changes to natural recharge/discharge patterns could have adverse impacts on stream channel morphology, riparian areas and aquatic life.

Groundwater: Construction operations may encounter shallow ground water associated with colluvial/alluvial aquifers situated adjacent to stream channels. Activities such as trenching and backfilling could cause minor fluctuations in shallow groundwater levels and/or increased turbidity within the aquifer adjacent to the activity. Turbidity would be a temporary impact and would subside after trench and backfilling activities are completed.

There is a small potential for groundwater contamination by accidental spills and leaks of fuels, lubricants, and hazardous materials during construction especially in groundwater recharge areas. Accidental releases or leaks from the pipeline or construction equipment could impact groundwater quality by introducing hydrocarbons into soil materials which could percolate to the water table.

Failure to successfully re-vegetate disturbed surfaces with preferred species may increase erosive potential and elevate sediment/salt loads to the Colorado River system. Some of the identified pipeline is located in close proximity to perennial streams and alluvial materials, leakage from pipelines could have significant adverse environmental impacts to water quality in the White River Basin.

Environmental Consequences of the No Action Alternative: None

Mitigation: Comply with "Gold Book" fourth edition surface operating standards for pipeline constructing (copies of the "Gold Book" fourth edition can be obtained at the WRFO). To minimize potential contamination of surface water in Black Sulphur Creek, the pipeline trench will be situated on the up-hill side of Rio Blanco County Road 26 and BLM road 1184. In addition, the operator will restrict non emergency maintenance activities on pipeline ROW and associated access roads when soils become saturated to a depth of three inches or more. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

Surface Water: The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation

may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

To mitigate additional soil erosion along the pipeline ROW and reduce the potential increased sediment and salt loading to nearby surface waters, reclamation of all disturbed surfaces will immediately follow pipeline construction. Stockpiled topsoil and spoil piles will be separated to prevent mixing during reclamation efforts. Reclamation efforts will include (but will not be limited to) the following procedures:

- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces and brought to back to near pre-construction contours.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in re-contouring efforts.
- All disturbed surfaces will be seeded with a BLM native seed mixture #3, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex, …) to provide additional protection to topsoil and help retain soil moisture.
- Following seeding and placement of biodegradable fabrics, all available woody debris cleared during initial construction will be pulled back over the recontoured area to act as flow deflectors and sediment traps. Woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be required to monitor all reclaimed areas for signs of erosion and the presence of noxious and invasive plant species. If problems arise the operator will consult with the BLM for further assistance.
- It will be the responsibility of the operator to continue revegetation/reclamation efforts until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM).
- Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative techniques (e.g. biodegradable fabrics, woody debris, straw waddles…).
- Prior to any discharge, hydrostatic testing water will be tested and processed, if necessary, to ensure that the water meets local, State or Federal water quality standards. Prior to discharge of hydrostatic testing water from the pipeline, the holder shall design and install a suitable energy dissipator at the outlets, and design and install suitable channel protection structures necessary to ensure that there will be no erosion or scouring of natural channels within the affected watershed as a result of such discharge. The holder will be held responsible for any erosion or scouring resulting from such discharge. Sandbags, rock, or other materials or objects installed shall be removed from the site upon completion of hydrostatic testing.

Finding on the Public Land Health Standard for water quality: Stream segments 16 and 20 of the White River Basin currently meet water quality standards set by the state. Many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. Following suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: There are no wetlands or riparian zones potentially influenced by those portions of the pipeline system located along Wagonroad Ridge or in the Ryan Gulch drainage. The nearest persistent waters (i.e., Piceance Creek) are separated from these wells by a minimum of 8 miles of ephemeral channel.

A relatively short segment descending the ridge into Black Sulphur Creek, as well as the leg that parallels the Black Sulphur valley (about 3.5 miles) has potential to involve Black Sulphur Creek, a larger and predominantly privately-owned perennial system whose upper reaches are characterized primarily by stands of yellow and coyote willow. The southern terminus of this pipeline segment is located on a corner tract of BLM that encompasses an isolated 0.25 mile reach of this creek. BLM-administered portions of this stream are largely in a functional-at-risk category with much of the channel stability reliant on dams constructed and maintained by beaver. Since fall 2003, many of the beaver ponds in the vicinity of the proposed action have become silt-filled. Although ephemeral side channels are likely a major source of course sediments accumulating in these ponds, historic livestock use, the existing road, and previous oil and gas developments were identified in prior stream surveys as contributing to sediment loads. The next nearest BLM-administered aquatic community is located in lower Piceance Creek, over 20 miles downstream of the project area.

Environmental Consequences of the Proposed Action: Surface disturbances associated with those portions of the ROW in the Black Sulphur drainage would be expected to contribute to sediment loading in adjacent and downstream portions of Black Sulphur Creek. Contributions would likely persist only in the short term (i.e., during construction and prior to rehabilitation), and depending on the success of reclamation and future land use (much of these segments are on private land) it is possible that sediment originating from the ROW corridor may decrease relative to the current situation. Although unlikely that short term sediment discharges into Black Sulphur Creek would, in and of itself, adversely affect channel function or riparian conditions, any additional soil movements attributable to surface disturbance would accelerate sedimentation of beaver ponds (i.e., compromising integrity and reducing longevity of dams, and with failure, destabilizing lateral and vertical channel profiles). Because the project, as sited, involves no special reclamation issues, diligent observance of reclamation COAs on those portions of ROW within the Black Sulphur drainage would be expected to reduce cumulative sediment yields to Black Sulphur Creek to negligible levels.

Considering lengthy downstream separation via ephemeral channels in the Ryan Gulch drainage, there is no reasonable probability that installation of the proposed pipeline system would adversely influence downstream riparian conditions or function.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to influence downstream channel or riparian conditions. Alternate locations would likely have impacts similar to those associated with the proposed action.

Mitigation: None, but see related sections of this document.

Finding on the Public Land Health Standard for riparian systems: With diligent observance of applied BMPs, the proposed Wagonroad Ridge and Ryan Gulch watershed locations (as well as the no-action alternative) would have no conceivable influence on the condition or function of downstream channel or riparian systems. These actions are well removed from the nearest riparian-bearing channels and further yet from BLM-administered lands (i.e., minimum additional 10 miles along Piceance Creek) and they would have no potential to influence the status of land health standards as applied to those stream reaches.

Public land portions of Black Sulphur Creek generally meet the Public Land Health Standard for riparian and channel systems, but the creek suffers locally from excessive sedimentation that is at least partially attributable to past oil and gas development activities. With application and diligent maintenance of proposed mitigation, it is expected that sediment originating from the proposed action would be reduced to negligible levels and would therefore not accelerate current sedimentation patterns nor detract from continued meeting of the standard.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No flood plains, prime and unique farmlands, Wilderness, ACECs, or Wild and Scenic Rivers exist within the area affected by the proposed action. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The following data is a product of an order III soil survey conducted by the Natural Resources Conservation Service (NRCS) in Rio Blanco County, CO. Table 2 highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

Table 2:

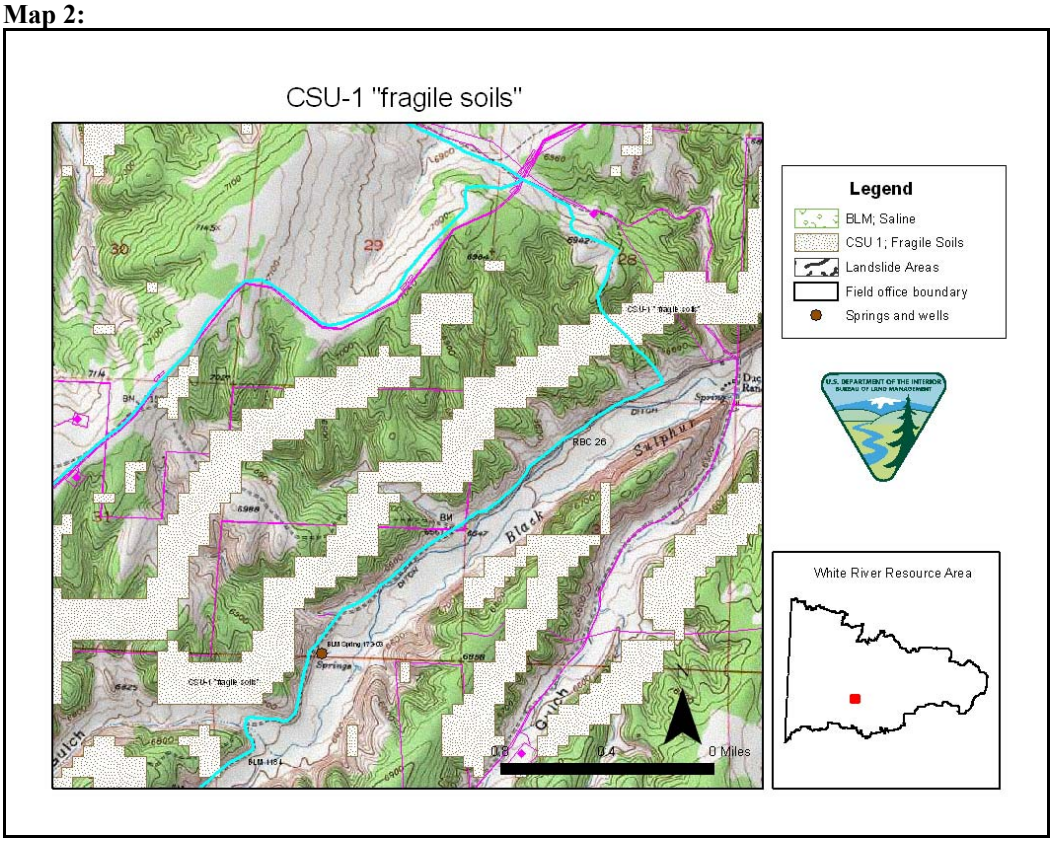
Soil Number	Soil Name	Slope	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
6	Barcus channery loamy sand	2-8%	Foothills Swale	<2	Slow	Moderate	>60
15	Castner channery loam	5-50%	Pinyon-Juniper woodlands	<2	Medium to rapid	Moderate to very high	10-20
33	Forelle loam	3-8%	Rolling Loam	<2	Medium	Moderate	>60
34	Forelle loam	8-15%	Rolling Loam	<2	Medium	Moderate to high	>60
36	Glendive fine sandy loam		Foothills Swale	2-4	Slow	Slight	>60
40	Hagga loam		Swale Meadow	2-8	Slow	Slight	>60
64	Piceance fine sandy loam	5-15%	Rolling Loam	<2	Medium	Moderate to high	20-40
70	Redcreek-Rentsac complex	5-30%	PJ woodlands/PJ woodlands	<2	Very high	Moderate to high	10-20
73	Rentsac channery loam	5-50%	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very high	10-20
75	Rentsac-Piceance complex	2-30%	PJ woodland/Rolling Loam	<2	Medium	Moderate to high	10-20
91	Torriorthents-Rock Outcrop complex	15-90%	Stoney Foothills		Rapid	Very high	10-20

Control Surface Use (CSU-1) "fragile soils" are mapped along approximately 870 feet of the southern branch of the pipeline as is descends down to county road 26. As outlined in the White River ROD/RMP, All surface disturbing activities encountering "fragile soils" will be allowed only after an engineered construction/reclamation plan is submitted by the operator and approved by the Area Manager. The following items must be addressed in the plan:

- How soil productivity will be restored
- How surface runoff will be treated to avoid accelerated erosion such as riling, gullying, piping, and mass wasting.

Map 2 shows the locations that CSU-1 "fragile soils" will be encountered. Fragile soils have also been mapped along Wagonroad Ridge. However, onsite evaluations of this portion of the pipeline route indicated that the affected area will NOT occur on slopes greater than 35% and controlled surface use stipulations will not be required along this portion of the pipeline.

Map 2:



Environmental Consequences of the Proposed Action: The entire pipeline route is situated on soils which have been identified as having slight to very high erosive potential. Improper drainage from the project areas will increase potential for overland flows accelerating erosion rates leading to soil piping, head cutting and gully formation. Removal of limited ground cover will also expose soils to erosional processes. Heavy traffic along the pipeline ROW will increase soil compaction decreasing infiltration rates which in turn will also increase potential for erosive overland flows.

Grading, trenching, and backfilling associated with construction/reclamation activities could result in mixing of soil horizons and may result in reduced soil fertility and revegetation potential. In addition, surface disturbing activities may give noxious weeds the opportunity to establish as equipment could transport seed to/from the project areas.

Leaks or spills of environmentally unfriendly substances on or near the pad may contaminate soils hindering revegetation efforts. Soils unable to support a healthy plant community will be less cohesive (due to lack of root structure) and more vulnerable to erosional processes.

Environmental Consequences of the No Action Alternative: None

Mitigation: Comply with "Gold Book" fourth edition surface operating standards for pipeline constructing (copies of the "Gold Book" fourth edition can be obtained at the WRFO).

To mitigate additional soil erosion along the pipeline ROW and reduce the potential increased sediment and salt loading to nearby surface waters, reclamation of all disturbed surfaces will immediately follow pipeline construction as outlined in the Water Quality section of this document.

All disturbed surfaces associated with the proposed actions must be monitored and treated for noxious and invasive plant species. Treatment and monitoring for noxious and invasive plant species will persist until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM).

Finding on the Public Land Health Standard for upland soils: Infiltration and permeability rates will be reduced with increased soil compaction. Following proper mitigation techniques and reclamation procedures, soil health will remain unchanged from current conditions.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The proposed action takes place in two basic vegetation types- pinyon- juniper woodland and Wyoming big sagebrush/basin big sagebrush uplands and bottomlands. The Wagonroad ridge route traverses pinyon-juniper woodlands interspersed with Wyoming big sagebrush parks. These parks are in a stage one invasion process, the principal invading agent being pinyon. The corresponding ecological site is Rolling Loam. The pinyon-juniper woodlands are primarily young age stands. The Black Sulphur leg of the pipeline occurs primarily on toeslope and basin big sagebrush vegetation. The corresponding ecological sites are Foothill Swale and Stony Foothills.

Environmental Consequences of the Proposed Action: The proposed action will create about (30) thirty acres of new earthen disturbance. The principal impact to vegetation will be complete removal of vegetation on the pipelines, and the earthen disturbance associated with it. In terms of plant community composition, structure and function, the principal negative impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas resulting from pipeline construction. In addition, airborne dust from road and construction operations will coat adjacent vegetation, impairing plant function and rendering it unusable by animal and insect grazers.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: Promptly revegetate all disturbed areas not necessary for production with Native Seed mix #2.

Seed MIX #	SPECIES (VARIETY)	LBS.PLS ACRE	RANGE SITES
#2	Western wheatgrass (Rosanna) Indian ricegrass (Nezpar) Bluebunch wheatgrass (Whitmar) Thickspike wheatgrass (Critana)	2 1 2 2	Deep Loam, Loamy 10"-14", Loamy Breaks, Loamy Slopes, Rolling Loam, Valley Bench

Seed MIX #	SPECIES (VARIETY)	LBS.PLS ACRE	RANGE SITES
	Green needlegrass (Lodorm) Globemallow* Alternates for *: American vetch, Utah sweetvetch, balsamroot	1 0.5	

The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer

Revegetation operations will start immediately following the completion of recontouring/dirt work operations and under no circumstances will be delayed until the following growing season.

No debris will be redistributed on the pipeline until seeding operations have been completed. Water access roads and construction sites to reduce or eliminate airborne dust.

The pipeline route paralleling RBC Rd. 85 (Sec 20, 29)should be heavily waterbarred as this area is highly erosive due to soils, slope and aspect.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial)*:* Vegetation in the project area currently meets the Standard on a watershed basis and is expected to continue to meet the Standard in the future following implementation of the proposed action.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: About 3.5 miles of the proposed pipeline corridor parallels Black Sulphur Creek, a larger and predominantly privately-owned perennial system that supports a fishery composed of rainbow and non-native forms of cutthroat trout. The southern terminus of this pipeline segment is located on a corner tract of BLM that encompasses an isolated 0.25 mile reach of this creek. BLM-administered portions of this stream are largely in a functional-at-risk category with much of the channel stability reliant on dams constructed and maintained by beaver. Fish densities fluctuate dramatically in response to the availability and condition of beaver ponds. Since fall 2003, many of the beaver ponds in the vicinity of the proposed action have become silt-filled and are occupied by far fewer fish. Although ephemeral side channels are likely a major source of course sediments accumulating in these ponds, historic livestock use, the existing road, and previous oil and gas developments were identified in prior stream surveys as contributing to sediment loads. The next nearest BLM-administered aquatic community is located in lower Piceance Creek, over 20 miles downstream of the project area.

Environmental Consequences of the Proposed Action: Surface disturbances associated with ROW clearing and pipeline installation would take place between the county road and the valley's toeslope. This mildly sloped valley position supports a basin big sagebrush/black greasewood complex with poorly developed understories. Equipment use along the country

road and ROW would be expected to contribute to sediment loading in adjacent and downstream portions of Black Sulphur Creek. Contributions would likely persist only in the short term, during construction and prior to rehabilitation (short term), and depending on the success of reclamation and future land use (virtually all of route is private land) it is possible that sediment originating from the ROW corridor may decrease relative to the current situation. Although unlikely that short term sediment discharges into Black Sulphur Creek would adversely affect successful fish reproduction (e.g., sediment deposition on gravel spawning beds), it's most deleterious aspect may be in abbreviating the functional lifespan of beaver ponds (e.g., minimize longevity of deep water pool habitat and destabilize lateral and vertical channel profiles). Because the project, as sited, involves no special reclamation issues, BMPs applied as Conditions of Approval would be expected to reduce cumulative sediment yields to the Black Sulphur fishery to negligible levels.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to influence downstream aquatic habitats. Alternate locations would likely have impacts similar to those associated with the proposed action.

Mitigation: see Vegetation and Soils/Hydrology sections

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): Public land portions of Black Sulphur Creek generally meet the Public Land Health Standard for this fisheries, but the creek suffers locally from excessive sedimentation that is at least partially attributable to past oil and gas development activities. With application and diligent maintenance of proposed mitigation, it is expected that sediment originating from the proposed action would be reduced to negligible levels and would thereby not detract from continued meeting of the standard.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The proposed wells are encompassed by higher elevation winter ranges of deer and the general winter distribution of elk. These ranges are most consistently occupied by the largest number of animals from October through January and again in April and early May. About 90% of the proposed pipeline corridor is situated immediately adjacent to maintained BLM or county roads and the remaining sections parallel a newly constructed pipeline corridor and an old powerline/access corridor.

Vegetation communities involved along the ROW are predominantly composed of aged stands of Wyoming big sagebrush that are variously encroached by older (sub-100 year) pinyon and juniper trees. The remainder of the route traverses woodland stands with mature elements either widely scattered or patchily distributed among sub-mature forms (about 5%) and bottomland basin big sagebrush (about 30%). Woodland patches with limited extent, open canopies, or adjacent to well traveled roads do not tend to support strong and consistent use by nesting woodland raptors. No past or recent evidence of woodland raptor nesting was found within 400-500 feet of the ROW during BLM raptor surveys in early June. A lengthy series of sandstone cliffs occur along Black Sulphur Creek, but similarly, no red-tailed or golden eagle nest activity

would be influenced by the proposed action. Other non-game wildlife using this area are typical and widely distributed in extensive like-habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

Environmental Consequences of the Proposed Action: Vegetation clearing on these lands and the reduction in the herbaceous and woody forage base for big game (about 42 acres on Public Land) would be discountable. Much of the proposed surface disturbance would occur in situations where effective habitat utility is currently influenced by existing features (road margins) or that support limited woody forage production (e.g., pinyon-juniper encroached Wyoming big sagebrush). Herbaceous forage availability would be largely regained through reclamation by the following growing season. Similarly, the loss of forage and cover for non-game animals would be negligible at the local scale.

The proposed action, as conditioned, would not add to the local road network and would, therefore, avoid density-related big game-related effects attributable to vehicle use (e.g., elevated energy demands, habitat disuse). It should be noted that the proposed corridor appears to roughly follow an historic roadbed (depicted on USGS quads from 1948-vintage aerial photos). Inspections of 2005 aerial photographs and previous (2004) on-site visits during well pad clearances revealed no remaining evidence of this road. The adjacent county road (RBC 85) appears to have assumed all local traffic.

Environmental Consequences of the No Action Alternative: No immediate action would be authorized that would have potential to adversely modify terrestrial wildlife habitats or be capable of disrupting animal behavior within the project area.

Mitigation: That portion of the proposed ROW extending west of the William's 22-28 well and paralleling the William's pipeline along RBC 85 (approximately 1 mile) will be shifted south as necessary to avoid any involvement with the existing parallel and rehabilitated ROW. Thus, the northern edge of the proposed ROW will abut, but not encroach on the southern margin of the William's pipeline ROW and will protect this section of newly revegetated ROW.

That portion of the ROW that descends from the William's 22-28 well to Black Sulphur Creek will be conditioned to effectively preclude further vehicular travel, including ATVs (e.g., redistributing woody material windrowed on the edge of the present ROW). The grantee would be responsible for maintaining this condition on the ROW through the term of the grant.

The proposed ROW should incorporate as much of the currently cleared ROW corridor as is possible on that portion of the ROW that descends from the William's 22-28 well to Black Sulphur Creek

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): The project area presently meets the public land health standards for terrestrial animal communities. As conditioned, the proposed action and no-action alternatives would have negligible short and long term influence on the utility or function of big game, raptor, or nongame habitats in the vicinity of these sites. Prior to successful rehabilitation,

pipeline right-of-ways cannot be considered as meeting the definition of the land health standard, but this condition is presumably short term and the overall shrubland communities comprising this landscape retain sufficient character to support viable populations of resident game and nongame species. Thus, in an overall context, lands affected by the no-action or proposed action would continue to meet the land health standard for terrestrial animals.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management	X		
Forest Management	X		
Geology and Minerals	X		
Hydrology/Water Rights			X
Law Enforcement		X	
Noise			
Paleontology			X
Rangeland Management			X
Realty Authorizations			X
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

ACCESS AND TRANSPORTATION

Affected Environment: Proposed actions will impact Rio Blanco County roads 85, 26 and 144 as well as BLM roads 1019 and 1184. All roads are native surface and provide access for oil and gas industry traffic (largest demand), local ranch traffic and recreational traffic during fall big game hunting seasons. Due to road surface materials coupled with moderate traffic demands (especially large vehicles) dust is an ongoing issue and can create both a nuisance as well as a safety concerns (decreased visibility).

Environmental Consequences of the Proposed Action: An increase in traffic will occur while facilities are being constructed leading to a potential in the increase in traffic accidents due to decreased visibility as well as a deterioration of road surfaces. Roads may be closed periodically due to construction limiting public access.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Dust abatement program should be in place as well as notice given to pipeline construction employees concerning Rio Blanco County and BLM road speed limits and road sharing.

HYDROLOGY AND WATER RIGHTS

Affected Environment: The proposed action is situated entirely within the Lower Piceance Creek 5th Level Watershed. Sixth and seventh level watersheds affected by the proposed pipeline are Ryan Gulch, Swizer Gulch, Wet Swizer Gulch, Wagon Road Gulch, and Black Sulphur Creek.

Black Sulphur Creek is the only perennial stream directly impacted by the proposed action. It must be noted that past oil and gas activities (well pad and BLM 1184 access road) combined with poor grazing practices on private land in Black Sulphur Creek have aided in channel modifications (channel straitening) and deterioration of riparian communities resulting in disconnected floodplains, deep channel incision, accelerated stream bank erosion, and increased sediment/salt loads to the Colorado River System. Based on measured cross sectional data, Black Sulphur Creek above Yankee Gulch is a G4/5 Rosgen stream channel type. G4 stream channels are very unstable due to the very high sediment supply available from both upslope and channel derived sources. G5 channels are generally in the degradation mode derived from near continuous channel adjustments, due to excessive bank erosion. Bedload transport rates in G5 channels can exceed 50% total load; with active, extensive, consistent channel erosion more typical than not (Rosgen, 1996).

Only one spring, BLM spring 173-03 (water rights case #85CW361) will be impacted by the proposed action. BLM spring 173-03 is located in lot 8 of section 32, T2S, R98W 6th P.M. at a point whence the SE corner of said section 32 bears south 89º east 2,750 feet, Rio Blanco County (refer to Map 2 in the soils section). The BLM obtained water rights on spring 173-03 in case number 85CW361 for 0.02 cfs (absolute). Proposed use for the water was identified for stock and wildlife watering as well as recreational use. The majority of the resource area was inventoried in the early 1980's for springs. BLM spring 173-03 was most recently inventoried on 7/24/2006. Table 3 lists water quality parameters identified in the WRFO Water Atlas for BLM spring 173-03 in 1983 as well as 2006.

Table 3:

Map Code	Quarter	Section	Twp	Range	Water Rights Case #	SC	pH	Q (gpm)	Date	Comments
173-03	Lot 8-SESW	32	2S	98W	85CW361	1480	7.8	2.7	8/30/83	Perennial
173-03	Lot 8-SESW	32	2S	98W	85CW362	1530	6.42	Ponded	7/24/06	Perennial

Environmental Consequences of the Proposed Action: Improper drainage from the pipeline ROW will elevate sediment production from disturbed areas. Increased sediment loads to local surface water drainages will result in a sediment rich system. Sediment rich systems are

characterized by deposition and high width to depth ratios (W/D ratio) (wide shallow channels). As the W/D ratio increases, the hydraulic stress against the banks also increases and bank erosion is accelerated. Increases in the sediment supply to the channel develop from bank erosion, reducing the systems capability to transport sediment. As a result, deposition occurs, further accelerating bank erosion, and the cycle continues (Rosgen, 1996).

Construction activities may disrupt natural surface and ground water flow patterns. Altered flow patterns could disrupt natural surface and ground water recharge/discharge patterns in Black Sulphur Creek and BLM spring 173-03. Changes to natural recharge/discharge patterns could have adverse impacts on stream channel morphology, riparian areas and aquatic life.

Environmental Consequences of the No Action Alternative: None

Mitigation: Limit surface disturbance to the uphill sides of Rio Blanco County road 26 and BLM road 1184. Reclaim disturbed surfaces as outlined in the Water Quality portion of this document.

PALEONTOLOGY

Affected Environment: The proposed pipelines are in an area that appears to be underlain by two general formations, the Uinta on the ridge tops and slopes and Quaternary alluviums in the drainage bottoms (Tweto 1979). The Uinta Formation has been classified by the BLM WRFO, as a Condition I formation meaning it is known to produce scientifically important fossil resources. The Quaternary alluviums, on the other hand, are classified as a Condition III formation meaning that it is not considered to be fossil producing. The depth of the Quaternary alluviums is variable and in some areas is may be shallow in which case it is likely underlain by the Uinta Formation.

Environmental Consequences of the Proposed Action: If, for any reason, it becomes necessary to excavate into the underlying rock formation, on the ridge tops, on the slopes or in the more shallow elements of the Quaternary alluvium, there is a potential to impact scientifically important fossil resources.

Environmental Consequences of the No Action Alternative: There would be no new impacts to fossil resources under the No Action Alternative.

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or

the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. If at any time it becomes necessary to excavate into the underlying rock, for any reason, then a paleontological monitor shall be present for any such excavations.

RANGELAND MANAGEMENT

Affected Environment: The proposed pipelines are on three contiguous grazing allotments, Reagles (06026), Square S (06027) and Black Sulphur (06028) which are licensed as follows:

The Reagle allotment is permitted for cattle use with two operators whose use is as follows:

Larry Mautz: 70 cattle 5/1- 12/15 65% FR 343 AUMs

Dean Mantle: 81 cattle 5/1- 12/15 100% FR 610 AUMs

The Square S grazing allotment has two grazing permit holders, Mantle Ranches and Boone Vaughn. Both permit holders run cattle on the allotment from May through January. The Swizer pasture where the proposed action will take place is used primarily during late May through mid June as a transition pasture between the spring and summer range pastures in alternate years with some fall drift use in other years.

The Black Sulphur allotment has the same grazing permittees as the Square S allotment, Boone Vaughn and Mantle Ranch. The Black Sulphur pasture of this allotment where the proposed action occurs is used primarily in the winter with some spring use every third year.

Environmental Consequences of the Proposed Action: The pipeline construction will result in the short term loss of 5 AUMs of forage production. The proposed pipelines intersect allotment boundary pasture fences at 5 locations:

T 3S R 99W Sec 2 SESE
T3S R 99W Sec 36 SESE
T 2S R 98W Sec 28 NWNW
T 2S R 98W Sec 20 SESW
T 3S R 98W Sec 5 NWNW

Failure to maintain these fences intact will cause inter-allotment livestock trespass and contradict the vegetation management objectives of the White River ROD/RMP.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Any and all fences (4 allotment boundary fences) intersected by the pipeline will be braced to BLM specifications prior to cutting. The integrity of these fences is to be maintained at all times, (that is, they will be up and intact). A temporary wire gate will be constructed. This work will take place prior to access road/ pipeline ROW construction. A copy of the applicable BLM fence specifications will be included as part of the conditions of approval.

Revegetation operations will start immediately following the completion of recontouring/dirt work operations.

Promptly revegetate all disturbed areas not necessary for production with Native Seed mix #2 (see vegetation). The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

No debris will be redistributed on the pipeline until seeding operations have been completed.

REALTY AUTHORIZATIONS

Affected Environment: The route for the proposed pipeline follows the general route of existing pipelines and Rio Blanco County roads. Portions of the route are on private lands. Other linear ROWs that are adjacent to, or crossed by, this proposal are:

Rio Blanco County Roads 26, 85, 86, and 144;
White River Electric powerlines COC 39354, COC39362, COC040171;
Public Service Company pipelines COC20275, COC 23293, COC27134, COC0124497;
Williams/Bargath pipelines COC67964, COC67991;
Riata Energy pipelines COC24022, COC61014, COC70192 (pending);
Enterprise proposed pipeline.

Environmental Consequences of the Proposed Action: The proposed action must be authorized by a right-of-way grant, and has been serialized as COC70159. The width of the permanent ROW will be 30 feet for a total permanent ROW of 34.85 acres +/-. An additional 20 foot temporary construction width would add 23.23 acres of disturbance for a total of 58.08 acres impacted by the project. The ROW width will overlap existing ROWs.

Environmental Consequences of the No Action Alternative: The pipeline would not be authorized or constructed and there would be no resulting impacts. Riata would still need to develop some type of transportation for transportation for their natural gas wells.

Mitigation: 1. Colorado One Call must be implemented before any ground disturbance. The operator must reach separate agreement with the private landowners involved.

2. Construction shall not begin on the Wagonroad Ridge segment beyond the 398-31-1 well until Riata drills the wells that the pipeline will serve. Sagebrush will notify the BLM at that time, and a Notice to Proceed will be issued.

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project area has been delineated a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM physical and social recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

The project area has been delineated a Recreation Opportunity Spectrum (ROS) class of Roaded Natural (RN). RN physical and social recreation setting may have modifications which range from being easily noticed to strongly dominant to observers within the area. However, from sensitive travel routes and use areas these alterations would remain unnoticed or visually subordinate. There is strong evidence of designed roads and/or highways. Structures are generally scattered, remaining visually subordinate or unnoticed to the sensitive travel route observer. Structures may include utility corridors, microwave installations and so on. Frequency of contact is moderate to high on roads and low to moderate on trails and away from roads. RN recreation experience is characterized by a moderate probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

Environmental Consequences of the Proposed Action: Dispersed camping spots typically utilized by big game hunters may be inaccessible due to open pipeline trench. The public will lose approximately 30 acres of dispersed recreation potential while pipeline is being constructed. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pads and roads, an increase of traffic could be expected increasing the likihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment.

Environmental Consequences of the No Action Alternative: No loss of dispersed recreation potential and no impact to hunting recreationists.

Mitigation: The pipeline trench shall be open no more than 48 hours at a time so that wildlife travel is not impeded and access by recreationists (hunters) is not blocked for extended periods of time.

VISUAL RESOURCES

Affected Environment: The proposed action would be located in an area with both a VRM II and VRM III classification. The major portion of the proposed action would be located in the area with the VRM III classification. The objective of the VRM II 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. The objective of the VRM III 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.

Environmental Consequences of the Proposed Action: The routes for the proposed pipeline follow existing roads and an existing buried pipeline ROW. The increase in linear disturbance adjacent to existing roads and an existing pipeline would be visible if traveling on the adjacent road, but would not attract the attention of the casual observer. By painting all above ground facilities Juniper Green to blend with and mimic the surrounding and back drop vegetation types, the basic elements of color of the natural features of the characteristic landscape would be repeated. The level of change to the existing character of the landscape would be low and the objective of the VRM II and VRM III classification would be retained.

Environmental Consequences of the No Action Alternative: There would be no environmental impacts.

Mitigation: Paint all production facilities Juniper Green (Munsell Soil Color Chart of Standard Environmental Colors) within 6 months of installation.

CUMULATIVE IMPACTS SUMMARY:

Cumulative impacts for each resource value that would be affected by from oil and gas development were analyzed in the White River Resource Area Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) completed in June 1996. Current development, including the proposed action, has not exceeded the cumulative impacts from the foreseeable development analyzed in the PRMP/FEIS.

REFERENCES CITED:

Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC), 2005a. Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin. Amended December 12, 2005 and Effective March 2, 2006.

Conner, Carl E. and Barbara J. Davenport

2004 Class III Cultural Resource Inventory Report for Five Proposed well Locations and Their Associated Pipeline routes (8.8 miles) and a Compressor Site in Rio Blanco County, Colorado for Riata Energy, Inc. Grand River Institute, Grand Junction, Colorado.
2005 Class III Cultural Resources Inventory of Ten Proposed Well Locations and Their Related Access/Pipeline Routes in Rio Blanco County, Colorado, for Riata Energy, Inc. and Sagebrush pipeline LLC. Grand River Institute, Grand Junction, Colorado.
2006 Class III Cultural Resources Inventory of a 6.6 Mile Long Portion of a Proposed Pipeline Route and a 10-Acre Bloc in Rio Blanco County, Colorado for Sagebrush Pipeline LLC. Grand River Institute, Grand Junction, Colorado.

CDPHE-WQCC, 2006b. "Status of Water Quality in Colorado – 2006, The Update to the 2002 and 2004 305(b) Report," April 2006.

CDPHE-WQCC, 2006c. "Regulation No. 93, 2006 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs," effective April 30.

CDPHE-WQCC, 2006d. "Regulation No. 94, Colorado's Monitoring and Evaluation List," effective April 30.

Rosgen, Dave. 1996. Applied River Morphology. Wildland Hydrology, Pagosa Springs, Colorado: 5-21, 5-22, 5-178, 5-182 pp.

Topper, R., K.L. Spray, W. H. Bellis, J.L. Hamilton, and P.E. Barkmann. 2003. Ground Water Atlas of Colorado. Colo. Geol. Surv. Special Pub. 53.

Tweto, Ogden
1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

PERSONS / AGENCIES CONSULTED: none

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Mark Hafkenschiel	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation, Rangeland Management
Ed Hollowed	Wildlife Biologist	Migratory Birds
Ed Hollowed	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa J. Kindall	Hazmat Collateral	Wastes, Hazardous or Solid
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Ed Hollowed	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Ed Hollowed	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Linda Jones	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2006-101-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to approve the proposed action for the construction, operation, maintenance, and termination of a buried natural gas pipeline and an adjoining temporary work area, located on public lands, with the addition of the mitigation measures listed below. This development, with mitigation, is consistent with the decisions in the White River ROD/RMP, and environmental impacts will be minimal.

MITIGATION MEASURES:

1. Colorado One Call must be implemented before any ground disturbance begins. The holder will make separate agreements with the private landowners involved.

2. Construction shall not begin on the Wagonroad Ridge segment beyond the 398-31-1 well until Riata drills the wells that the pipeline will serve. Sagebrush will notify the BLM at that time, and a Notice to Proceed will be issued.

3. Archeological sites:
   - Site 5RB 5214 must be completely avoided by all pipeline construction activity. The site shall be fenced and completely avoided by all pipeline workers and pipeline related activities, unless the site has been previously destroyed by well pad construction.
   - Pipeline construction through site 5RB 5023 shall be monitored to ensure that no previously undetected surface features are inadvertently impacted by construction.
   - All standing or other features associated with site 5RB 4809, the homestead/ranch, shall be avoided by pipeline construction.

4. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:
   - whether the materials appear eligible for the National Register of Historic Places

- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

5. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

6. To minimize disruption of migratory bird nesting efforts, if there is any delay which results in ROW clearing and pipeline installation activities taking place prior to July 15, such activities should take place first along RBC 144 (about 7 miles) and secondly along the Black Sulphur Creek valley (3.5 miles).

7. The proposed ROW shall incorporate as much of the currently cleared ROW corridor as is possible on that portion of the ROW that descends from the William's 22-28 well southward to Black Sulphur Creek with the goal of limiting the width of the corridor in this area. The proposed ROW extending northwest of the William's 22-28 well and paralleling the William's pipeline along RBC 85 (approximately 1 mile) will be shifted south as necessary to avoid any disturbance on the existing parallel and rehabilitated ROW. Thus, the northern edge of the proposed ROW will abut, but not encroach on the southern margin of the William's pipeline ROW and will protect the new vegetation.

8. Air Quality:
   a). The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so.
   b) To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter.
   c) Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Soils stockpiled for short

durations will be wetted during dry periods to reduce production of fugitive particulate matter.

d) Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

e) The contractor/holder shall provide notice to pipeline construction employees concerning Rio Blanco County and BLM road speed limits and road sharing.

9. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

10. The operator shall comply with "Gold Book" fourth edition surface operating standards for pipeline constructing (copies of the "Gold Book" fourth edition can be obtained at the WRFO). The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

11. To minimize potential contamination of surface water in Black Sulphur Creek, the pipeline trench will be situated on the up-hill side of Rio Blanco County Road 26 and BLM road 1184. In addition, the operator will restrict non emergency maintenance activities on pipeline ROW and associated access roads when soils become saturated to a depth of three inches or more.

12. The operator shall be required to collect and properly dispose of any solid wastes generated by this project.

13. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing **paleontological** sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:
   - whether the materials appear to be of noteworthy scientific interest
   - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

   If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for

whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

14. If at any time it becomes necessary to excavate into the underlying rock, for any reason, then a paleontological monitor shall be present for any such excavations.

15. Prior to any discharge, hydrostatic testing water will be tested and processed, if necessary, to ensure that the water meets local, State or Federal water quality standards. Prior to discharge of hydrostatic testing water from the pipeline, the holder shall design and install a suitable energy dissipater at the outlets, and design and install suitable channel protection structures necessary to ensure that there will be no erosion or scouring of natural channels within the affected watershed as a result of such discharge. The holder will be held responsible for any erosion or scouring resulting from such discharge. Sandbags, rock, or other materials or objects installed shall be removed from the site upon completion of hydrostatic testing.

16. Reclamation efforts will include (but will not be limited to) the following procedures:

a) Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
b) Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces and brought to back to near pre-construction contours.
c) The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in re-contouring efforts.
d) In particular, to preserve potential T&E plant habitat, if the pipeline is buried at T2S, R98W, sec. 28 NWSE where the pipeline comes down near the toe of slope, the topsoil containing the light colored shale outcropping should be set aside and then replaced in the same place when the groundwork is completed.
e) All disturbed slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex, etc.) to provide additional protection to topsoil and help retain soil moisture.

17. Following seeding and placement of biodegradable fabrics, all available woody debris cleared during initial construction will be pulled back over the recontoured area to act as flow deflectors and sediment traps. Woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.

18. It will be the responsibility of the operator to continue revegetation/reclamation efforts until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM). The operator is required to monitor all reclaimed areas for signs of erosion. If problems arise, the operator will consult with the BLM for further assistance.

19. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative techniques (e.g. biodegradable fabrics, woody debris, straw waddles, etc.) In particular, the pipeline route paralleling RBC Rd. 85 in Sections 20 and 29 will be heavily water barred as this area is highly erosive due to soils, slope and aspect.

20. Revegetation operations will start **immediately** following the completion of recontouring/ dirt work operations and under no circumstances will be delayed until the following growing season. No debris will be redistributed on the pipeline until seeding operations have been completed. Promptly revegetate all disturbed areas with Native Seed Mix #2.

Seed MIX #	SPECIES (VARIETY)	LBS. PLS ACRE	RANGE SITES
Native Seed #2	Western wheatgrass (Rosanna) Indian ricegrass (Nezpar) Bluebunch wheatgrass (Whitmar) Thickspike wheatgrass (Critana) Green needlegrass (Lodorm) Globemallow* Alternates for *: American vetch, Utah sweetvetch, balsamroot	2 1 2 2 1 0.5	Deep Loam, Loamy 10"-14", Loamy Breaks, Loamy Slopes, Rolling Loam, Valley Bench

21. The operator is required to monitor and treat noxious and invasive plant species on the project area for a minimum of three years post disturbance or until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM). All noxious and invasive species which occur on site will be eradicated/controlled using materials and methods approved in advance by the Authorized Officer.

22. That portion of the ROW that descends from the William's 22-28 well to Black Sulphur Creek will be conditioned to effectively preclude further vehicular travel, including ATVs (e.g., redistributing the woody material windrowed on the edge of the present ROW). The grantee will be responsible for maintaining this condition on the ROW through the term of the grant.

23. Any and all fences (4 allotment boundary fences) intersected by the pipeline will be braced to BLM specifications prior to cutting. The integrity of these fences is to be maintained at all times, (that is, they will be up and intact). A temporary wire gate will be constructed. This work will take place prior to access road/ pipeline ROW construction. A copy of the applicable BLM fence specifications will be included as part of the conditions of approval.

24. The pipeline trench shall be open no more than 48 hours at a time so that wildlife travel is not impeded and access by recreationists (hunters) is not blocked for extended periods of time.

25. Paint all production facilities Juniper Green (Munsell Soil Color Chart of Standard Environmental Colors) within 6 months of installation.

COMPLIANCE/MONITORING: Compliance inspections will be performed at 5 year intervals by White River Field Office staff.

NAME OF PREPARER: Linda Jones

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: _____
Field Manager

DATE SIGNED: 8/18/06

ATTACHMENTS: Exhibit A – Map
Exhibit B – Sagebrush Construction Guidelines
Fence Specifications

CO-110-2006-101-EA 36

SAGEBRUSH PIPELINE FOR RIATA
CO-110-06-101-EA COC69874

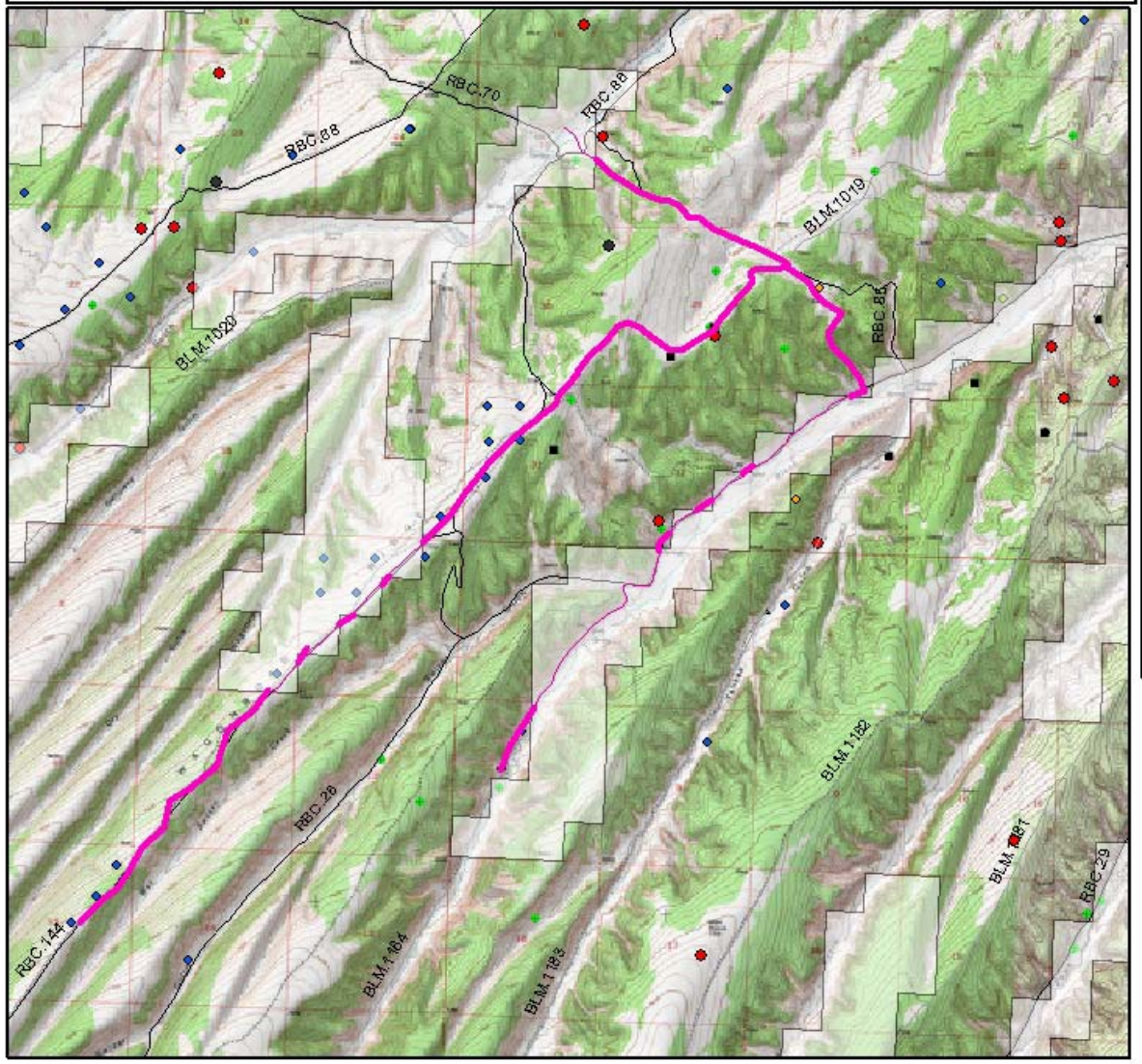


EXHIBIT A

Sixth Principal Meridian,
T.2S., R.98W., and R.99W.,
T.3S., R.98W., and R. 99W.

Legend

- Field office boundary
- BLM
- CDW
- FOR
- NPS
- PRI
- STA

Major roads

RD_CODE

- Highway
- County
- NPS
- Forest service
- BLM

- Abandoned Location
- Dry & Abandoned
- DM
- Injection
- Plugged&Abandoned
- Producing
- Shut In
- Temp&Abandoned
- Unknown
- Verbal Plugging
- Waiting on Completion
- XX

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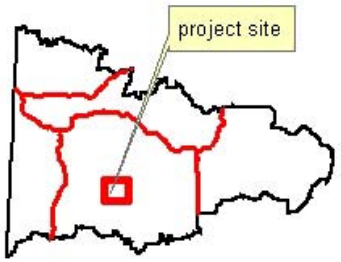

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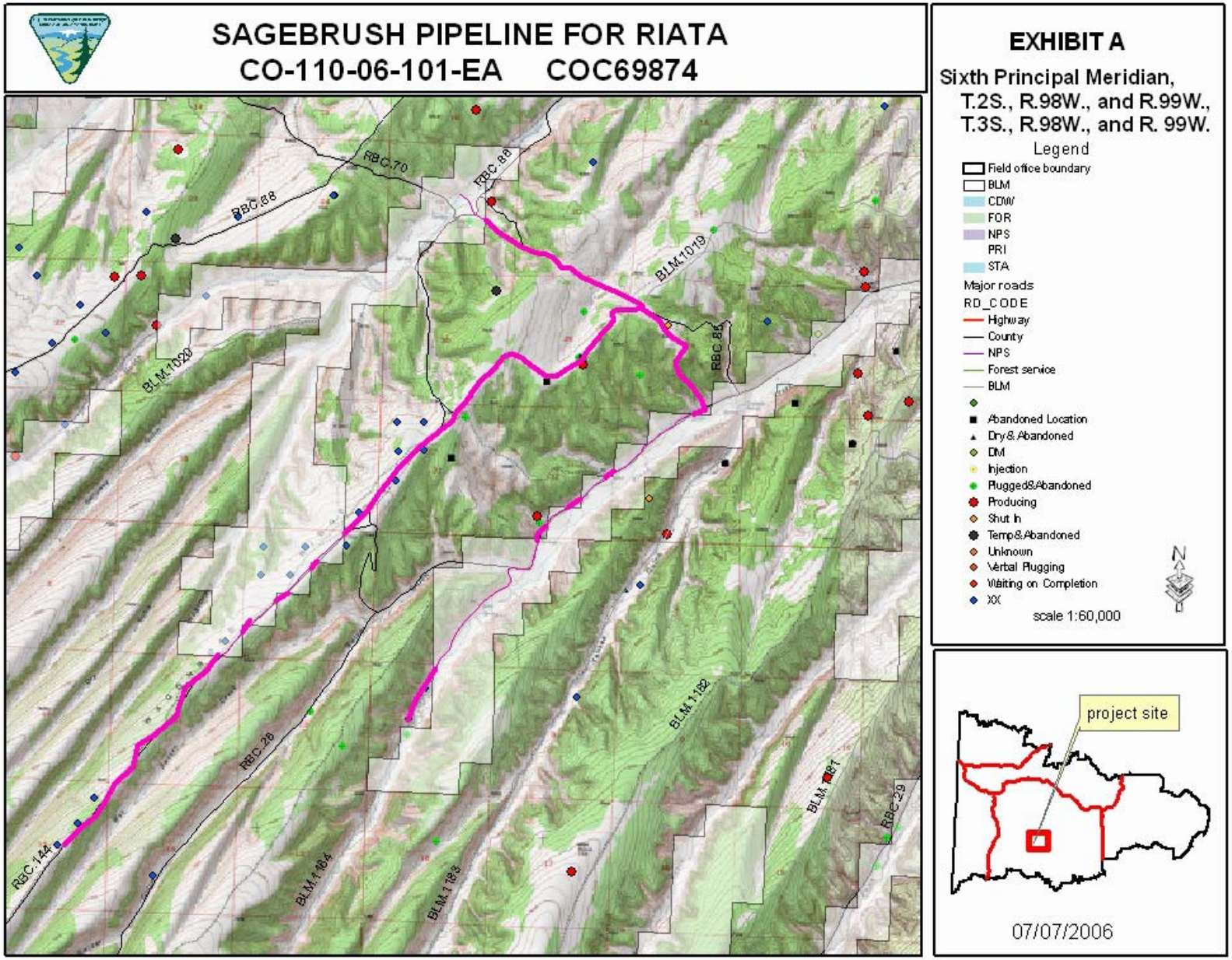

SAGEBRUSH PIPELINE FOR RIATA
CO-110-06-101-EA COC69874
EXHIBIT A
Sixth Principal Meridian,
T.2S., R.98W., and R.99W.,
T.3S., R.98W., and R. 99W.
Legend
Field office boundary
BLM
CDW
FOR
NPS
PRI
STA
Major roads
RD_CODE
Highway
County
NPS
Forest service
BLM
Abandoned Location
Dry & Abandoned
DM
Injection
Plugged&Abandoned
Producing
Shut In
Temp&Abandoned
Unknown
Verbal Plugging
Waiting on Completion
XX
scale 1:60,000
N
project site
07/07/2006
RBC.70
RBC.88
RBC.88
BLM.1019
RBC.86
BLM.1020
RBC.28
RBC.144
BLM.1184
BLM.1183
BLM.1182
BLM.1181
RBC.29

EXHIBIT B - PIPELINE CONSTRUCTION GUIDELINES

Sagebrush Pipeline LLC document of Standard Construction Methods for the use of their contractors – May 2006

1.0 PREPARATION AND USE OF RIGHT-OF-WAY

1.1 RIGHT-OF-WAY AND PERMITS

Sagebrush Pipeline LLC (Sagebrush) will provide and furnish all necessary rights-of-way; railroad crossing permits; Federal, State, City, and Country highway permits; and water crossing permits necessary for construction of the pipeline. Sagebrush shall furnish right-of-way of a maximum width as stipulated in the JOB DESCRIPTION. Additional widths of right-of-way will be provided at road, railroad, stream, etc., crossing, or where construction needs warrant such increased widths in Sagebrush's opinion.

1.2 SPECIAL REQUIREMENTS BY LANDOWNERS AND TENANTS

When acquiring right-of-way along the routs of the line, it may be necessary at various locations for Sagebrush to agree to certain special requirements by landowners and tenants. Special requirements shall be noted on separate line lists and shall be made available to CONTRACTOR prior to its entry on those parts of the right-of-way which are subject to such special conditions. CONTRACTOR shall comply with these special requirements.

1.3 PRESERVATION OF SURVEY STAKES

Before clearing and grading right-of-way, CONTRACTOR shall accurately move survey stakes to the edge of the temporary working easement and preserve them during all phases of the work for use in reporting progress and locations along the line. Cost of replacing survey stakes which have been destroyed by construction activities will be paid by CONTRACTOR. After right-of-way has been cleared and graded, CONTRACTOR shall set a second set of stakes in the proposed ditch line at the original location of the survey stakes. CONTRACTOR shall accurately position such stakes.

1.4 CUTTING FENCES AND INSTALLING GATES

All fences shall be cut and temporary gates installed in a manner acceptable to Sagebrush (See Exhibit "4"). CONTRACTOR shall install a substantial temporary gate in every fence necessary for passage of equipment required in the performance of the work. A permanent type gate, if required by Sagebrush, shall be installed as shown in Exhibit "5". Opening shall not exceed the width of the right-of-way specified. Prior to cutting fences, CONTRACTOR shall securely brace fence posts with H-braces and fasten fencing wire to maintain the original tautness in fencing

adjacent to the proposed cut. Special care shall be taken to preserve the tautness of woven wire fencing, and it shall be rolled back using a maximum of one cut if the fencing cannot be taken apart at an existing splice.

The span of wires in the temporary gate shall be supported and separated by wire stays. Gates shall be provided with fasteners, preferably rope, and leverage devices which will permit one man to open and closed the gate and permit the gate to be kept taut. Gates shall be adequate to prevent passage of livestock and shall be kept closed at all times except during passage of men and equipment. All livestock shall be prevented from entering or leaving, and if necessary CONTRACTOR shall furnish watchmen to accomplish this stipulation. Gates shall be maintained in good condition until fences are permanently repaired.

CONTRACTOR shall comply with restrictions by property owners regarding fences. CONTRACTOR shall rebuild fences in a condition as good or better than they were found. Where property is fenced by hedges or other types of barriers, temporary gates shall be installed across the gaps cut for the right-of-way. When the pipeline is completed, a permanent fence shall be installed.

1.5 CLEARING OF RIGHT-OF-WAY

CONTRACTOR shall clear the right-of-way of boulder, rocks, trees, shrubs, grass, weeds, crops, or other obstacles as necessary to the construction of the pipeline and in a manner and to the width specified by Sagebrush. CONTRACTOR shall prepare right-of-way to the minimum width necessary for construction vehicles and perform work in such a manner to cause the least possible damage, especially where right-of-way passes over or through farm yards, groves, orchards, vineyards, gardens, lawns, valuable timber lands, drainage or irrigation ditched, along public highways, or similar valuable properties.

Where timber is encountered, tree stumps on the cleared right-of-way shall not project more than two inches above the normal surface of the ground. Tree stumps in the ditch line shall be completely removed. Tree stumps in the areas to be enclosed by fences and roadways, shall be removed. The CONTRACTOR shall remove all brush, stumps and other loose debris from the site so that the spoil bank from the ditching operation will not have any foreign materials that might become mixed with the excavated soil.

All merchantable right-of-way timber shall be cut and stacked as requested by the landowner on or adjacent to the right-of-way and/or station site as directed by the Sagebrush.

Any timber used from the right-of-way and/or station site or adjoining lands by the CONTRACTOR shall be purchased from the owner by the CONTRACTOR at no cost to the Sagebrush. If the CONTRACTOR fails to purchase any timber used by it,

Sagebrush reserved the right to make a settlement of the claim and charge the amount paid to the CONTRACTOR.

All brush and other materials shall be disposed of or removed from the right-of-way by the CONTRACTOR in a manner acceptable to the applicable STATE requirements, and to the complete satisfaction of the landowner and Sagebrush. Acquisition of permits for burning of brush or cut timber shall be the responsibility of the CONTRACTOR.

1.6 GRADING OF RIGHT-OF-WAY

CONTRACTOR shall grade the right-of-way so as to minimize the need for fabricated sag bends or overbends and, as a minimum, to comply with the requirements of Section 5.1 of these SPECIFICATIONS, except where shop fabricated bends are provided by Sagebrush. It is the intent of this requirement that indo far as practical, as determined by Sagebrush, grading (along with ditching) be performed in such a manner as to allow pipe to conform naturally to the finished ditch.

Grading at crossing such as, but not limited to, roads, railroads, rivers, streams, canals, gullies, ditches, and washed shall be of sufficient width (within the right-of-way) to allow adequate passage of construction equipment and vehicles. Grading of the right-of-way shall be performed in such a manner as to minimize interference with existing natural drainage. Where terraces or diversion dams are cut, restoration shall be expedited. All grading shall be finished to restore the original drainage or flow conditions, as practicable and shall conform to requirements of regulatory bodies having jurisdiction. Terraces and drainage structures may be crossed by boring and jacking of the pipe under such structures at the CONTACTOR'S option with Sagebrush's approval, if the integrity of the structure can better be maintained in this way. Boring and jacking of such structures may be required by the landowner in some instance.

CONTRACTOR shall install adequately sized conduits, as necessary, to maintain natural drainage when constructing temporary fills for passage of equipment. Where temporary bridges are needed, CONTRACTOR shall construct bridges of sufficient strength and width to permit passage of all construction equipment.

CONTRACTOR shall maintain the conduits and temporary bridges in such a manner that drainage is maintained and adjacent properties are not damaged. At any points where right-of-way crosses levees, drainage canals, or irrigation ditches, CONTTRACTOR shall construct temporary dikes as required to hold back water from adjacent properties.

CONTRACTOR shall place excess excavated material in piles, in order that it may be replaced to its original position. Such material shall not be scattered along the right-of-way and shall not be placed in low areas without approval of Sagebrush. Material removed from stream banks shall not be placed in the stream beds.

1.7 WARING SIGNS AND LIGHTS AT ROAD CROSSING

CONTRACTOR shall comply with all city, county, or state regulations as to placing warning signals and lights. In the absence of such regulations, CONTACTOR shall place warning signs, visible 500 feet during daylight, and warning lights, visible 500 feet during darkness, in both directions of traffic. Signs shall be located a minimum of three hundred (300) feet from pipeline crossings. It shall also be required that warning lights be set and kept lit on each side of such road crossings immediately adjacent thereto. Warning signs shall be readable at one hundred (100) feet.

1.8 ACCESS AND CONTRUCTION ROADS

The right of ingress to and egress from the rights-of-way furnished by Sagebrush shall be limited to pints where such right-of-way intersects public roads rights-of-way. Arrangements for other access, use of existing privately owned roads, construction of temporary roads, or building of bypass roads due to terrain shall be made by CONTRACTOR at its expense. CONTRACTOR shall obtain written agreements from the landowner or from regulatory agencies for such access, and shall furnish Sagebrush with a copy of each written agreement. Immediately following final use of the access or roads, CONTRACTOR shall obtain releases from the landowners or regulatory agencies and furnish Sagebrush with a copy of compliance with state laws or regulations, if any.

1.9 BLASTING

When blasting is necessary to grade the right-of-way, the stipulation on blasting in the DITCH provisions of the SPECIFICATIONS shall be complied with by the CONTRACTOR.

1.10 LIMITATIONS OF RIGHT-OF-WAY

Sagebrush reserves the right to limit the distance CONTRACTOR may prepare right-of-way ahead of laying crews. If Sagebrush makes a separate arrangement for the hauling and stringing of line pipe and casing on the job, CONTRACTOR will not be responsible for claims by the Motor Carrier for detention time caused by the limitation of right-of-way.

1.11 KEEPING RIGHT-OF-WAY CLEAN

CONTRACTOR shall arrange the maintenance and servicing of work equipment and vehicles so as to keep the right-of-way and adjacent land free of gasoline an oil spills and discarded parts. Right-of-way and adjacent land shall be kept free of all debris brought onto the job by CONTRACTOR including, but not limited to, waste, oil, grease cartridges, oil cans, containers, skids, scrap pipe or cuttings, coasting material and welding electrodes. Each work crew shall be responsible

for cleaning up its debris on a daily basis. Such debris shall be disposed of as approved by Sagebrush.

1.12 FENCE STILES AND MILE POST MARKERS

When fence stiles and mile post markers are removed to facilitate construction, they shall be placed at one edge of the right-of-way and reinstalled by CONTRACTOR in their original locations when fences are permanently repaired.

1.13 PROTECTION OF PIPELINES, TELEPHONES CONDUITS, ETC.

CONTRACTOR shall be responsible for locating pipelines, telephone conduit, and other underground structures of Sagebrush or others, and shall take precautions to avoid damaging these facilities. CONTRACTOR shall be liable for all repairs, loss of revenue, or other losses occasioned by damage to such structures. Some such facilities are shown in their approximate location on the construction alignment sheets provided by Sagebrush. These facilities will be marked by the survey party during the pre-construction staking. This is for information only and in no manner relieves the CONTRACTOR of the responsibilities set forth above. All repairs shall be made promptly.

Any pipelines, utilities, or other underground structures exposed shall be supported and protected from damage. Backfilling operations shall be conducted such that adequate compaction is maintained so that movement of existing facilities does no occur. Matting or other appropriate methods shall be used as required to prevent damage to underground facilities.

1.14 NOTIFICATIONS TO OUTSIDE COMPANIES/ONE CALL SYSTEM

CONTRACTOR shall be responsible for notifying pipeline, telephone, power, and other companies or agencies who have structures above or below ground across the construction route, or near enough to the construction. Such notification could be accomplished by contracting the appropriate one call system (if applicable). CONTRACTOR will provide COMPANY with a record of all notifications. Notification shall be sufficiently in advance of construction activities to allow for a representative to be present during construction.

2.0 UNLOADING, HAULING, AND STRINGING

2.1 QUALIFICATION

If CONTRACTOR does not own adequate equipment to perform the unloading, hauling, and stringing operations, it may subcontract such work to a licensed Motor Carrier with COMPANY'S approval. Under no circumstances shall CONTRACTOR lease or rent equipment to perform the work.

2.2 PERMITS AND LICENSES

CONTRACTOR or any SUBCONTRACTOR that it employs to transport pipe or other materials for the job, shall secure appropriate permits from the appropriate Federal and State agencies authorizing them to perform the types of transportation service required for the job. CONTRACTOR shall secure all necessary permits and licenses at its own expanse for such transportation services as well as for the operation, hauling, and transportation of its equipment. All such transportation services shall be performed in strict accordance with all federal, state, and local statutes and regulations applicable thereto and at the rates and in accordance with all the provisions of the tariffs applicable thereto.

2.3 DELIVERY OF PIPE

Sagebrush shall designate in the JOB DESCRIPTION the unloading points for all line pipe, river pipe, and casing, and the quantity of pipe to be shipped to each point. Where circumstances do not permit pipe to be hauled and strung directly to the job site, Sagebrush shall make arrangements for intermediate storage at locations on an alternate site.

When storage is required, the method of stacking and number of tiers to which the pipe may be placed shall be designated by Sagebrush as shown in Exhibit "6". Where the storage site is not adjacent to the unloading point, CONTRACTOR shall haul the pipe from the unloading point to the storage site for stacking. CONTRACTOR shall subsequently haul the pipe from the storage site and string it along the right-of-way.

Sagebrush will not be responsible for and will not honor any claims for time lost, or claimed to have been lost or any other expenses of CONTRACROR due to a delay in delivery of pipe unless caused by the omission or neglect of Sagebrush.

2.4 DEMURRAGE

CONTRACTOR shall be responsible for demurrage on railroad cars due to its failure to promptly unload cars and material when the delay is caused by its negligence, insufficient equipment or labor, or equipment breakdown.

Sagebrush shall be responsible for demurrage on railroad cars caused by weather conditions, bunching of cars enroute, or by shipment of more carloads at one time than may reasonably be unloaded. CONTRACTOR shall notify Sagebrush immediately when such conditions arise.

2.5 INSPECTION OF MATERIALS

CONTRACTOR and Sagebrush shall jointly inspect all pipe and other materials upon transfer of custody to CONTRACTOR. Damage incurred prior to this inspection shall be noted and marked by CONTRACTOR, and damaged items shall be segregated for further handling. CONTRACTOR will be liable for damage incurred following this inspection.

2.6 HANDLING OF PIPE

In loading and unloading onto or from railroad cars and trucks, pipe shall be lifted with devices that will not damage pipe or its coating such as wide fabric slings, soft lift hooks fitted to the curvature of the pipe, adequately padded calipers, or other Sagebrush approved devices. In loading pipe joints, each joint shall be lowered to position without being dropped or knocked against other joints, and each succeeding joint shall be placed evenly, as practicable, with other loaded joints. Pipe shall be loaded in such a manner that flexing and shifting of the pipe during hauling will be avoided. After loading, suitable fabric straps shall be used to secure the pipe to the truck.

Where yard coated pipe is involved, truck bolsters shall be at least twelve (12) inches wide and well padded to distribute the pressure on the coating. Pads shall be provided between the coated pipe and the fabric straps used for securing the load. The bolsters are to be kept free of debris.

2.7 HAULING AND STRINGING

CONTRACTOR shall string pipe ahead of the ditching operation, unless unusual circumstances should warrant Sagebrush's approval to string after the ditch is excavated.

Hoisting equipment shall be used to off-load pipe; pipe shall not be rolled off of trucks. When handling coated pipe, extreme care shall be taken to prevent damage to the coating. Coated pipe shall be strung an padded skids, and shall be free from contact with the ground, rocks, stumps, or other debris that could cause damage to the coating. Where authorized by Sagebrush, such as in areas of loose, sandy soil free from rocks or other deleterious objects, coated pipe may be strung on the ground. Concrete coated pipe shall be strung on the ground, or on a sufficient number of skids to prevent damage to the concrete coating.

Gaps shall be left between adjacent lengths of pipe at suitable intervals and at all wall defined trails to permit the free passage of livestock or vehicles during the time interval between stringing and other construction operations. Where the right-of-way crosses rough terrain, special care shall be exercised in lowering the pipe from the

truck to see that pipe is not dropped on rocks or allowed to rest on sharp and jagged surfaces. Dragging of pipe will not be permitted.

Pipe shall be properly placed by size, weight, and SPECIFICATION as shown in JOB DESCRIPTION and on the alignment sheets. Any moving of pipe resulting from failure to comply with these requirements shall be at CONTRACTOR'S expense. Pipe shall be placed at a suitable distance from the staked line and strung in proper amounts to avoid moving pipe forward and backward or stringing surplus line pipe in an area.

Where it is impossible to string pipe, such as at river, railroad, and highway crossings, or in swamps or marshes, CONTRACTOR shall stack pipe at Sagebrush furnished locations convenient to the particular work and satisfactory to Sagebrush.

2.8 STRINGING WHERE BLASTING IS REQUIRED

Where it is evident that blasting of the ditch will be required, CONTRACTOR shall not string pipe until all blasting operations have been completed. Where the necessity for blasting develops after the stringing of pipe has been done, CONTRACTOR shall take all necessary steps to completely protect the pipe and pipe coating from damage during blasting operations.

2.9 DAMAGE TO PIPE

CONTRACTOR shall exercise all reasonable care to avoid damage to pipe, pipe ends, bevels, and coating, in its unloading, hauling, and stringing operations. CONTRACTOR shall pay Sagebrush for all pipe it damages, and, at its expense, shall cut out, bevel, weld pipe, or repair coating where necessitated by such damage.

3.0 DITCH SPECIFICATION

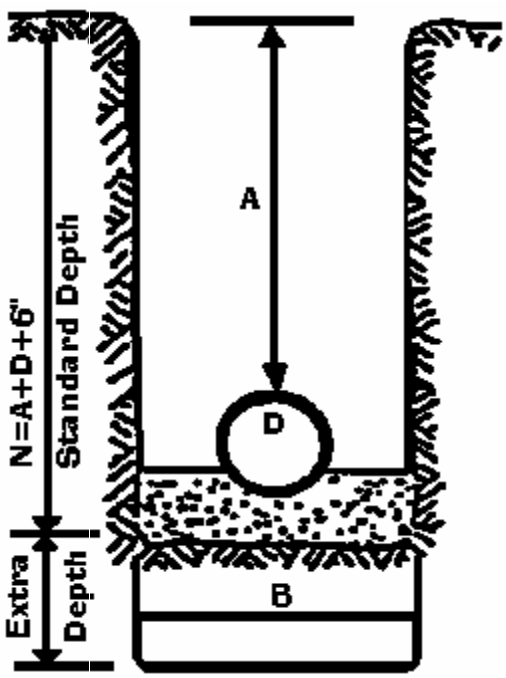
3.1 DITCH DIMENSIONS

The minimum dimensions of the finished ditch shall conform to the table shown. The depth of the ditch shall be measured form the level of the graded ground on each side of the ditch.

When pipeline is within 50 feet of any private dwelling or building where persons work or congregate, an additional 12 inches of cover shall be provided. Payment to be included in BID 1.

NORMAL EXCAVATION

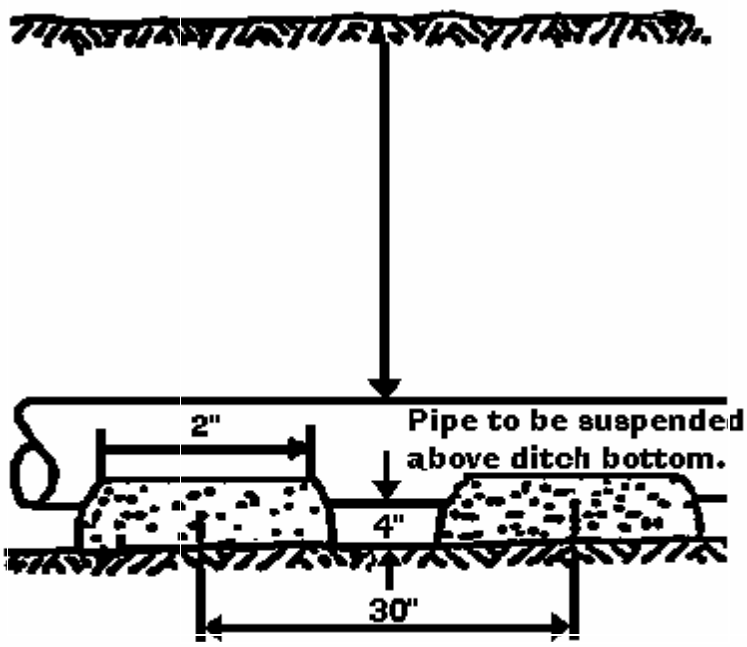
Size of Line	Cover A	***Width B***	Standard ***Depth N***
3	36”	12”	46”
4	36”	14”	47”
6	36”	18”	49”
8	36”	20”	51”
10	36”	24”	53”
12	36”	28”	55”
14	36”	30”	56”
16	36”	32”	58”
18	36”	36”	60”
20	36”	38”	62”
22	36”	40”	64”
24	36”	42”	66”
26	36”	42”	68”
28	36”	42”	70”
30	36”	46”	72”
32	36”	46”	74”
34	36”	48”	76”
36	36”	48”	78”



NOTE: Six (6) inch pads of loose soft earth, tamped down, or bags of sand are to be placed in ditch to suspend pipe a minimum of four (4) inches above ditch bottom in areas where rock or clods could damage the coating.

ROCK EXCAVATION
(See Section 4.6)

Size of ***Line***	Cover A*	Ditch ***Width***
3	18”	16”
4	18”	18”
6	18”	22”
8	18”	24”
10	18”	28”
12	18”	32”
14	18”	34”
16	18”	36”
18	18”	40”
20	18”	44”
22	18”	48”
24	18”	52”
26	18”	52”
28	18”	52”
30	18”	58”
32	18”	58”
34	18”	60”
36	18”	60”



NOTE: Six (6) inch pads of loose soft earth, tamped down, or bags of sand are to be placed in ditch to suspend pipe a minimum of four (4) inches above ditch bottom in areas where rock or clods could damage the coating.

* Cover to be a minimum of 30” in industrial, commercial, and residential areas and 36” in drainage ditches at public roads and railroads.

3.2 FINISHED DITCH

CONTRACTOR shall excavate ditch along the staked line established by Sagebrush. The finished ditch shall be free of rocks, hard clods, stumps, roots, or other debris which would damage the pipe or coating when the pipe is lowered into the ditch. All tree roots shall be cut flush with the side wall and bottom of the ditch to prevent contact with the pipe. The bottom of the ditch shall be graded and contoured so that the pipe will have a substantially continuous and uniform bearing.

CONTRACTOR shall excavate the ditch in such a manner as to minimize the need for fabricated sag bends or overbends and, as a minimum, to comply with the requirements of Section 5.1 of these SPECIFICATIONS. To insure this condition is met, the CONTRACTOR shall proceed with the construction of the pipeline in the following order: dig the ditch, bend the pipe to fit the ditch, complete the welding, lower the pipe and backfill. It is the intent of this requirement that insofar as practical, as determined by Sagebrush, ditching be performed in such a manner as to allow pipe to conform naturally to the finished ditch. This shall be accomplished by cutting the approaches and crests of ridges and hills slightly deeper by gradually adjusting the cutting depth of the ditching machine. Similar adjustments to cutting depth shall be made to approaches to locations such as, but not limited to, roads, railroads, water courses, terraces, ravines, gullies, ditches, and washes. Such adjustments to depth will not be considered "extra depth" ditch. Where overbends or side bends are required, ditch shall be excavated to provide proper distance between the inside of the bend and the bottom or side of the ditch. Such adjustments to depth will not be considered as "extra depth" ditch for the purpose of compensation.

CONTRACTOR shall prevent vegetation or other foreign material from being mixed with the spoil that will be used to backfill the trench. Should cave-in of the ditch occur before the pipe is lowered, CONTRACTOR shall restore the caved-in section of the ditch to its original depth.

To prevent damage to the coating, as illustrated in Section 4.1, CONTRACTOR shall place six (6) inch pads of loose soft earth, free of clods and rocks, and other hard objects, about two (2) feet long in the ditch so that the bottom of the pipe shall be a minimum of 4" above the bottom of the ditch throughout the suspended lengths. The dirt shall be tamped down before the laying of the pipe in the ditch. In lieu of the pads, CONTRACTOR may place earth or sand filled bags in the ditch, particularly where rock is encountered at crossings of water courses.

3.3 NORMAL EXCAVATION

Earth, sand, loose or broken rock, rock mixed with earthen material, and soft rock such as caliche, all of which can be removed with mechanical ditch excavating machinery is classified as normal excavation. Mechanical ditch excavating machinery shall include but not limited to wheel type ditchers, backhoes, drag lines, rooters, rock plows, rippers, and similar type equipment. For protection of existing facilities, see Section 2.0.

3.4 NORMAL DITCH IN PIEPLINE CORRIDORS

Where the new line is in close proximity to an existing line, the ditch shall be stepped as detailed in Exhibit "7".

3.5 "DOUBLE" DITCHING/SEPARATION OF TOP SOIL

There are certain properties on the right-of-way where "double" ditching may be required. In such cases, the CONTRACTOR shall remove the top soil, segregate it from the remaining ditch spoil, and following the backfill operation, replace the top soil as close as possible to its original position. Any surplus soil that cannot be returned to the ditch shall be hauled away and disposed of at locations satisfactory to the Sagebrush.

When rock is encountered, soil cover shall be stripped from the surface of the rock, kept separate from the excavated rock, and preserved as padding material to be placed around the pipe or for replacement as top soil. When necessary, additional dirt shall be hauled to the site to complete the backfill.

3.6 ROCK EXCAVATION

Rock excavation is defined as solid rock which must first be broken up by means of drilling and blasting, or by pavement breakers, before excavation can be accomplished. Sagebrush reserves the right to approve the method used for rock excavation.

The CONTRACTOR shall use all practical means of excavation with mechanical ditch excavating equipment before resorting to drilling and blasting unless it is obvious in Sagebrush's opinion that rock excavation is required.

Rock excavation shall meet the following depth SPECIFICATIONS:

(a) Standard Depth Rock Excavation

Where rock is encountered at the surface of the ground, ditch shall be excavated in accordance with the ditch dimension table for rock

excavation. When rock is encountered below the ground surface, ditch shall be excavated to place the top of the pipe six (6) inches below the surface of the rock with a minimum total cover of eighteen (18) inches. Total depth of the ditch will then include the eighteen (18) inches of cover plus the pipe diameter plus six (6) inches of padding soil. Standard depth rock excavation shall be computed on a linear foot basis measured along the ditch line (see Rock Excavation Table in Section 4.1).

(b) Extra Depth Rock Excavation

Rock shall be excavated to provide cover in excess of standard depth where required by Sagebrush. In such cases, Sagebrush shall specify the minimum cover required, and CONTRACTOR shall excavate rock as needed to comply with the stipulation.

3.7 EXCAVATIONS AND SHORING

All trenches dug shall be sloped to the proper angle of repose (see Exhibit "8"). Trenches dug more than 5' in depth shall be shared, (see Exhibit "9"), laid back to a stable slope, or some other means of protection provided if employees may be exposed to cave-in, unless state or local code requires that trenches of a lesser depth be shored or sloped. When field conditions so require, trenches less than 5' in depth shall be shored or sloped, state or local code notwithstanding. This determination shall be made by the Sagebrush representative.

All excavated material must be placed a minimum of 2' back from the edge of the trench.

Excavations near to or reaching the footing level of an existing structure must have shoring adequate to support the additional load transmitted by the structure foundation. If shoring will not provide adequate support, or if the excavation is too near the structure to allow shoring, adequate underpinning of the existing structure must be provided. The presence of hydrostatic pressure must not be overlooked.

3.8 BLASTING

Before any blasting is done, CONTRACTOR shall obtain necessary permits at its expense and shall notify all regulatory authorities, any operators of existing pipelines within the vicinity, as well as occupants of nearby buildings, stores, houses, or places of business. Farmers must be notified in sufficient time to protect property or livestock. No blasting shall be performed unless Sagebrush is present. No mobile radios or similar equipment shall be used when blasting is being done. In performing blasting operations, CONTRACTOR shall employ qualified personnel that are experienced in the handling of explosives. At Sagebrush's option, CONTRACTOR

shall provide evidence as to the qualifications of said personnel. CONTRACTOR shall excavate to obtain only the depth of ditch required and shall blanket the ditch with spoil or blasting mats to contain the blast.

If rock is scattered over the right-of-way or adjacent property during the blasting operations, CONTRACTOR shall clean up the rock, haul it from the premises, or bury it to the satisfaction of the Sagebrush and/or others. CONTRACTOR shall use extra precautions in blasting near telephone, telegraph, or electrical conduits, water lines, water wells, springs, pipelines, and other underground and above ground structures.

3.9 DITCHING BY HAND

In cases where shrubbery, trees, or valuable growing timber are encountered in the right-of-way and in locations where, in the opinion of Sagebrush, the use of mechanical ditch excavating machinery may result in unnecessary damage to property, CONTRACTOR shall excavate the ditch by hand.

3.10 ADDITIONAL DEVTH OF DITCH AT CERTAIN LOCATIONS

CONTRACTOR shall provide extra depth ditch at no additional compensation as part of its normal ditching operations, when necessary for:

(a) Crossing or Terrain

When ditching short distances across or adjacent to locations such as, but not limited to, highways, railroads, water courses, farming terraces, and at points where the contour of the earth may require additional depth to eliminate bends, CONTRACTOR shall excavate to the necessary depth.

(b) Tie-Ins to Existing Lines

CONTRACTOR shall excavate to the required depth to tie-in to the pipeline system without using hot bends except where approved by Sagebrush. Price to be included under BID 1.

(c) Crossing or Paralleling Other Facilities

When trenching operations parallel or cross existing above ground or underground facilities, such as pipelines and cables, CONTRACTOR shall exercise extreme care to prevent any damage to these facilities. When trenching operations parallel existing facilities, the spoil bank shall be placed so that the subsequent construction operations may be accomplished without operating heavy equipment over the existing

facility. CONTRACTOR shall give proper notification to the respective designated authorities, including the one call system that have Jurisdiction over such facilities, prior to the commencement of any excavation at these locations, and CONTRACTOR'S operations at these locations shall be governed by the requirements of the respective authority. CONTRACTOR shall obtain prior permission from the respective authority and shall expose such underground facility by hand excavation prior to performing any machine excavation near the facility. Respective authorities may require their facilities to be exposed by their own employees prior to commencement of CONTRACTOR'S excavation near their facilities. CONTACTOR shall provide the required trench to allow installation of the pipeline either below or above existing facilities particularly high pressure pipelines with a minimum clearance between the facility and the pipeline of 24 inches or as otherwise required by the respective authorities or specified in the JOB DESCRIPTION. Provided that the minimum cover stipulations are met, generally, the pipeline shall be installed below such underground facility unless such facility exists at extreme depth that would render such an installation impractical and permission is granted to Sagebrush by the respective authority to install the pipeline above the facility.

When the right-of-way easement or Job Description specifies that the pipeline shall have more than the normal amount of cover at locations other than those mentioned above, CONTRACTOR shall excavate to the specified depth for the distance involved, payment to be included in BID 1.

3.11 DRAIN TILE

When drain tile, plastic pipe or other similar drainage item are encountered, CONTRACTOR shall dig the ditch so that the pipeline shall be laid over or under such tile with a minimum clearance of twelve (12) inches. When any active drain tile is damaged, cut, or removed, it shall be repaired immediately in such manner that the drain tile can function properly.

CONTRACTOR shall permanently repair drain tile by the method shown in Exhibit “10” or by a method approved by the Sagebrush. No dirt or debris will be allowed in the existing or repaired tile. CONTRACTOR shall support replacement drainage securely, (both temporary and permanent ones).

3.12 WATER COURSES

CONTRACTOR shall provide a minimum of five (5) feet of cover under the bottoms of rivers, creeks, ravines, man-made drainage ditches, irrigation ditches,

and other water courses unless otherwise specified in JOB DESCRIPTION, attached drawings, or special requirements of public or private agencies. The depths of ditches in the approaches shall be in accordance with profiles supplied by Sagebrush or Permitting Agencies, or in accordance with the requirements stipulated herein under Finished Ditch (4.2).

3.13 CROSSINGS FOR PROPERTY OWNER

When the ditch is excavated through lands where livestock is confined or through cultivated fields where it is desirable for landowner or tenant to have a passage way across ditch, CONTRACTOR shall provide safe temporary bridges or leave dirt plugs for crossing the ditch wherever necessary in the opinion of Sagebrush.

3.14 DRAINAGE THROUGH SPOIL BANK

Certain areas, such as cultivated fields, may require provisions for water drainage through the spoil bank to prevent flooding. CONTRACTOR shall provide such drainage as required and shall assure that the ditch is free of standing water when pipe is lowered in. Existing artificial and natural drainage courses shall be kept in functional condition.

3.15 LIMIT OF OPEN DITCH

Total amount of open ditch shall not exceed two (2) miles at any time or one half (1/2) mile at night, unless prior approval of Sagebrush is given or otherwise specified in the Job Description.

4.0 LOWERING, BACKFILLING, AND CLEAN-UP

4.1 LOWERING PIPE IN DITCH

No pipe shall be lowered until the ditch is free from loose rocks, hard clods, roots, welding rods, or debris which would damage the coating. Where coating is field applied, the pipeline shall be lowered into the ditch immediately behind the coating and wrapping machine, wherever practicable. Lowering-in belts shall have a minimum width equal to the diameter of the pipe. The belts shall never be placed under a weld joint and the spacing between each bolt shall be at a close enough distance to prevent any undue strain on the pipe or pipe deformation.

4.2 DISTRTIBUTION OF SLACK LOOPS

Necessary slack in the pipeline shall be obtained by lowering sections into the ditch while alternate sections are held above the ditch on skids. Slack loops shall be held up only as necessary, to obtain proper fit of bends in the ditch and prevent pushing the pipeline ahead. CONTRACTOR shall perform all work necessary per the direction of the Sagebrush Representative to obtain the proper fit and depth of pipe in the ditch.

4.3 LOWERING SLACK LOOPS

After the necessary backfilling has been done to hold bands in their proper position, slack loops shall be lowered at a time approved by Sagebrush. Lowering shall be done at a time when the pipe temperature is at its lowest point during the workday, except in case of hot oil lines which should be lowered during the warmest part of the day. Where it is found that the line does not contract sufficiently to allow slack loops to have the minimum cover after lowering, bell holes shall be dug and the pipe cut and rewelded to give the required cover. In no case shall pipe be ridden into the trench by driving tractors, trucks, or other equipment over it to force it down.

4.4 WATER-FILLING TO SUBMERGE PIPE

At those locations where, in the opinion of Sagebrush, the ditch cannot be dewatered prior to lowering the pipe into the ditch and where permanent weighting is not required to provide negative buoyancy when the pipe is in service, CONTRACTOR, with Sagebrush's approval, may submerge the pipe by filling with clean fresh water. The water shall not be removed until the ditch is completely backfilled.

4.5 BUILDING RETARDS

On hillsides or sloping ground, two or more 1-Cu. Ft. Earth-filled bags, foam, or approved equivalent shall be placed in the bottom of the ditch before the pipeline is lowered in position. Before backfilling the ditch, additional earth-filled bags shall be placed on and around the pipeline to form a retard as shown in EXHIBIT "12". The retard shall be built slightly higher than the surface of the ground to prevent water flow in the bottom of the backfilled ditch. Sagebrush shall designate the locations and the number of earth-filled bags to be used for the installation of the retards.

4.6 NORMAL BACKFILLING

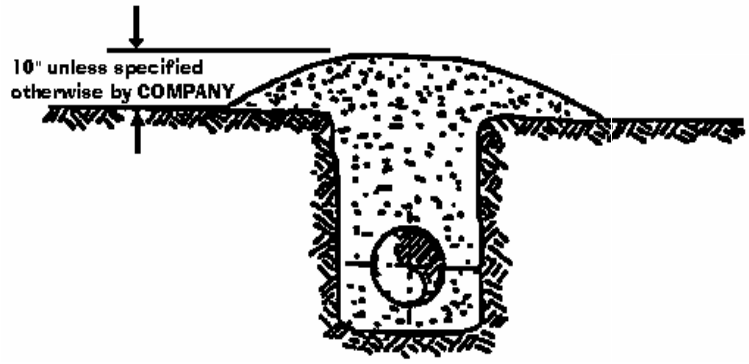
(See Section 4.0)

After lowering in, plugs of dirt shall be backfilled first at a spacing of every 2-3 joints to check pipe location and movement before covering. Backfilling shall be performed by means of an auger-type backfilling machine or other company approved equipment.

NO FOREIGN SUBSTANCE SUCH AS SKIDS, WELDING RODS, CONTAINERS, BRUSH, TREES, REFUSE OF ANY KIND SHALL BE PERMITTED IN THE BACKFILL. EARTH, SAND, OR OTHER SOFT AND LOOSE MATERIALS THAT DO NOT CONTAIN ROCKS OR HARD CLODS MAY BE BACKFILLED DIRECTLY ON THE COATED PIPE. After the ditch has been filled to within 6 to 8 inches of the level of the surrounding ground, rubber tired equipment shall be run down the ditch to compact to backfill.

After this operation, the remaining spoil shall be spread and shaped over the ditch as shown in the sketch below. Line locators shall be used to ensure that the crown is placed over the ditch.

Special care must be taken for protection of existing facilities.
(See Section 2.0)



NOTE: Top of Backfill to be spread over ditch as shown or as required by landowners.

4.7 BACKFILLING WHERE ROCK IS ENCOUNTERED

(See Section 4.0)

Ditch excavated in loose or solid rock must be backfilled in a manner that will not cause damage to the pipe or coating. No rocks, hard clods, or other hard objects shall be placed on the coated pipe. The pipe shall be covered with twelve (12) inches of soft earth before any rocks or hard objects are placed in the ditch. Where there is insufficient loose dirt available on the right-of-way to provide the minimum12 inches of padding over the coated pipe, CONTRACTOR shall furnish, haul, and place such dirt.

After the pipeline is covered by the 12-inch layer of padding, the remainder of the spoil shall be placed in the ditch provided, that any rock that will interfere with plowing and cultivation shall not be allowed in the ditch. It shall be the responsibility of the CONTRACTOR to remove this rock from the right-of-way. Dirt shall be hauled in if necessary to fill the ditch.

Packing of backfill by use of rubber-tired equipment shall not be done where the coating might be damaged, or in locations where drain tile might be damaged. In these areas, tractors or other machinery shall not be permitted to travel down the backfilled ditch.

In lieu of requiring dirt to be hauled for padding the ditch, Sagebrush may permit the use of "Rock Shield" for protecting the coating. Sagebrush Representatives shall designate when and what type of rock shield is permitted. (Note - certain types interfere with cathodic protection.) When "Rock Shield" is permitted, CONTRACTOR shall install it in accordance with manufacturer's recommendations. Where concrete coated pipe is used, this restriction may be relaxed, with Sagebrush approval.

4.8 BACKFILLING ON SOPING GROUND

CONTRACTOR shall open all natural water courses disturbed by construction. Where directed by Sagebrush, CONTRACTOR shall construct furrows and terraces across the pipeline ditch to divert the flow of water away from the backfilled ditch and into natural drainage courses.

4.9 BACKFILLING FROZEN GROUND

When the spoil is frozen into hard clods and does not contain rock, CONTRACTOR shall remove the outer frozen surface of the spoil and use loose, unfrozen material for covering the pipeline. The remaining thawed spoil shall be placed directly over the ditch.

4.10 BACKFILLING IN IRRIGATED FIELDS

When backfilling in irrigated fields, CONTRACTOR shall provide furrows across the right-of-way to direct the flow of water into normal irrigation courses. Backfill must be sufficiently level to permit normal irrigation and spoil must be returned to the ditch or otherwise disposed of. All levees, terraces, or sides of drainage ditches or irrigation canals shall be compacted to provide a good bond between the undisturbed sides of the ditch and the backfill material. A 95% compaction level shall be attained per Sagebrush approved procedure.

4.11 WATER-PACK

CONTRACTOR shall, where designated by Sagebrush, water-pack the ditch, by Sagebrush approved method. The backfilled ditch after water packing, shall be level with the surrounding terrain. CONTRACTOR shall supply all water.

4.12 PROTECTING WATER COURSE CROSSINGS

In the banks of rivers, streams, or other water courses, or where farm terracing is encountered, CONTRACTOR shall restore the banks or terraces. If required by Sagebrush, CONTRACTOR shall protect the backfill with earth-filled bags, cement and sand-filled bags, or rock rip-rap.

4.13 REPAIR OF DRAIN TILE

CONTRACTOR shall repair all drain tile removed or damaged, by the method shown in EXHIBIT "10" or by a method- approved by Sagebrush.

4.14 DISTANCE BETWEEN BACKFILLED AND LOWERED-IN-PIPE

CONTRACTOR shall keep the backfill as close as possible to the lowering-in operation and at no time shall the distance between these operations exceed one (1) mile. In addition, the CONTRACTOR shall at a minimum provide a 12-inch layer of backfill over all pipe lowered into the ditch that same day.

4.15 CLEAN-UP OF RIGHT-OF-WAY

As soon as backfill is completed, CONTRACTOR shall clear the right-of-way of all waste materials, debris, and rock resulting from its operations. CONTRACTOR shall fill and smooth all holes and ruts, repair damage to the land, and restore the land consistent with its condition prior to the construction of the pipeline. All temporary fills and bridges shall be removed and cleaned up.

Pastures or cultivated areas shall be tilled by discing, harrowing, or similar methods as approved by the Sagebrush.

Where required by Sagebrush, land under cultivation subject to soil compaction shall be plowed to a depth of ten (10) inches except directly over shallow drain tile or other underground structures.

Sagebrush will not prevent CONTRACTOR from attempting to clean up the right-of -way due to inclement weather or ground conditions. However, if CONTRACTOR proceeds with clean-up during adverse weather or when unfavorable ground conditions prevail, CONTRACTOR will assume full risk of acceptance.

Sagebrush and CONTRACTOR shall cooperate together in contacting landowners or proper authorities in regard to obtaining acceptability of the clean-up. However, prior to final acceptance by the COMPANY, CONTRACTOR shall obtain landowner signed releases accepting final clean-up.

4.16 SEEDING RIGHT-OF-WAY

Where required by Sagebrush, CONTRACTOR shall sow seed over the right-of-way in a uniform manner and in the amounts specified by Sagebrush. Required seed will be furnished by Sagebrush. CONTRACTOR shall furnish all required equipment. Seeding over the right-of-way across public lands will be done in a manner described in the JOB DESCRIPTION.

4.17 REPAIRS TO FENCES

Upon completing the clean-up of the right-of-way, permanent repairs shall be made to all fences cut by CONTRACTOR, by using new and like kind of fencing materials (see Exhibit "l3"). CONTRACTOR shall furnish and install GOOD pressure treated, penta, or cedar posts of 4-inch minimum top diameter in all fences except where steel, concrete, or specially constructed posts are required. In these cases, CONTRACTOR shall furnish and install such special posts.

4.18 REMOVING TEMPORARY ACCESS TO RIGHT-OF-WAY

CONTRACTOR shall remove all temporary means of access to the right-of-way which it may have installed excepting those which may be left for use at the landowner's written request. CONTRACTOR shall repair and restore to original condition all public rights-of-way at the points where they have intersected the pipeline right-of-way. Structures shall be placed in condition as good as or better than at the beginning of construction.

4.19 REMOVAL OF MATERIALS AND EQUIPMENT

CONTRACTOR shall remove from the right-of-way or from storage sites all materials left from the construction work and shall deliver such materials to points designated by Sagebrush. CONTRACTOR shall remove from the right-of-way all equipment, tools, and facilities which were used in the performance of the WORK.

4.20 DISTANCE BETWEEN CLEAN-UP AND LOWERED-IN PIPE

The distance between clean-up and lowered-in pipe, which shall include all tie-ins, shall not exceed ten (10) miles or a distance designated by the Sagebrush. In the event CONTRACTOR neglects clean-up WORK or it is not within the stipulated distance of lowered-in pipe, Sagebrush shall have the right to stop all of CONTRACTOR'S construction operations until the clean-up WORK is on schedule. No payment will be made to CONTRACTOR for such SHUTDOWNS.