Williams

WILLIAMS FIELD SERVICES CO., LLC

PARACHUTE GREASEWOOD EXPRESS PIPELINE

Garfield County, Colorado

Development Plan Review for Right-of-Way Application
May 2007

GARFIELD COUNTY
Building & Planning Department
108 8th Street, Suite 401
Glenwood Springs, Colorado 81601
Telephone: 970.945.8212 Facsimile: 970.384.3470
www.garfield-county.com

Pipeline Development Plan Permit

GENERAL INFORMATION

(To be completed by the applicant.)

- General Location of the Pipeline (Right-of-Way): Parachute Greasewood Express Pipeline- Parachute Creek Area is the location
- Diameter and Distance the pipeline: 6" & 8" diameter and 7.2 miles long
- Existing Use & Size of Property in acres: Please see application
- Description of Proposed Pipeline: Pipeline from Parachute Creek Gas Plant to a meter station on Parachute Creek, north of the Grand Valley Gas Plant. This application includes the Parachute NGL Storage Facility located near the Parachute Creek Gas Plant.
- Zone District(s): Resource Lands- Lower Valley Floor

- Name of Operator (Applicant): Williams Field Services Company, LLC
- Address: One Williams Center WRC3-9 Telephone: 918-573-3268
- City: Tulsa State: OK Zip Code: 74172 FAX: 918-573-9755

- Name of Owner's Representative, if any (Attorney, Planner, etc): PVCMI- Land Planning Division
- Address: 1038 County Road 323 Telephone: 970-625-5350
- City: Rifle State: CO Zip Code: 81650 FAX: 970-625-4522

STAFF USE ONLY

- Doc. No.: _____ Date Submitted: _____ TC Date: _____
- Planner: _____ Hearing Date: _____

I. APPLICATION SUBMITTAL REQUIREMENTS

As a minimum, specifically respond to all the following items below and attach any additional information to be submitted with this application:

Development Plan Submission: The applicant shall submit eight copies of the proposed development plan with the completed application form to the Planning Director. The following information must be submitted with a development plan application:

(1) A vicinity map indicating the section, township, and range of the site, and its relation to surrounding public roads and municipal boundaries.

(2) Project Overview: a description of the project including the length of the pipeline, diameter of the pipeline, pipeline commodity, and the general description of the pipeline route.

(3) Ownership

A. For individual right-of-way, a diagram showing adjacent properties and the approximate location of buildings and their uses within a distance of 350 feet of any proposed structure, facility, or area to be disturbed. This may be drawn at a smaller scale than the site plan.

B. For an area plan, the map will show the property boundaries and ownership information for all private and public property included in the development area.

(4) Evidence of surface owner notification and of surface agreements where the surface owner is not a party to the mineral lease.

(5) Need for Proposed Action: a statement of the reason for the pipeline

(6) Regulatory Permit Requirements: a table indicating the permit agency name, permit/action driving task and the task to be performed to obtain the permit.

(7) Primary Project Participants: Include the names, address and phone numbers of the company representative, company and individual acting as an agent for the company, construction company contacts, federal and state agency contacts

(8) Project Facilities: Identify any permanent project facilities such as permanent right-of-way, widths, meter stations, valve sets, etc.

Also indicate any temporary right-of-way, width during construction, construction facilities, etc.

(9) Construction Schedule: indicate the estimated start and end dates for construction, days of the week in which construction will occur, hours of day during which construction will occur.

(10) Sensitive Area Survey: List the types and areas of concern along the pipeline right-of-way, such as: sensitive plant populations, cultural, archeological, paleontological resources and wetlands identified during pre-construction environmental surveys, if applicable.

(11) Land Grant/Permits/Authorizations and Stipulations: attach a copy of any land grant, permits, and authorizations including stipulations.

(12) Revegetation Plan:

a. A plant material list. Be specific, scientific and common names are required. Include application rate in terms of pure live seed (PLS) per acre.

b. A planting schedule that includes timing, methods, and mulching.

c. A revegetation security. A security may be required if, in the determination of the County Vegetation Management, the proposed project has:

(i) A potential to facilitate the spread of noxious weeds

(ii) A potential to impact watershed areas.

(iii) A potential for visual impacts from public viewing corridors.

(iv) Steep slopes (15% or greater) or unstable areas.

(v) Disturbs large area (Half an acre or greater)

d. The revegetation security will be in an amount to be determined by the County Vegetation Management that will be site-specific and based on the amount of disturbance. The security shall be held by Garfield County until vegetation has been successfully reestablished, or for a period of time approved by the County Vegetation Management in any specific land use action, according to the Reclamation & Revegetation Standards Section in the Garfield County Weed Management Plan. The County Vegetation management will evaluate the reclamation and revegetation prior to the release of the security.

(13) A weed management plan for all Garfield County listed noxious weeds and State of Colorado listed noxious weeds that are

targeted by the Commissioner of Agriculture for statewide eradication.

(14) Emergency Response Plan: include a fire protection and hazardous materials spills plan, which specifies planned actions for possible emergency events, a listing of persons to be notified of an emergency event, proposed signage, and provisions for access by emergency response teams. The emergency plan must be acceptable to the appropriate fire district or the County Sheriff, as appropriate. The plan shall include a provision for the operator to reimburse the appropriate emergency service provider for costs incurred in connection with emergency response for the operator's activities at the site.

(15) Traffic Impact: for construction traffic on county roads, indicate the anticipated types of vehicles, number of each type, anticipated number of trips per day per each type, county roads to be used , percentage of the construction traffic that will travel on each listed county road.

(16) Staging Areas: indicate the general location of the staging areas required for pipeline construction.

(17) Hydrotest Water: indicate the quantity of water required, source of water and the disposition of the water after testing.

II. Referral and Review by Planning Director:

The Planning Director will coordinate the review of the development plan application. Upon the filing of a complete application for development plan review, the Planning Director shall promptly forward one copy to the County Road & Bridge, Oil & Gas Auditor, Vegetation Management and Engineering Departments; the appropriate fire district or County Sheriff; the surface owners of an individual pipeline development plan; and any adjacent municipality for comment.

(1) Referral comments on the proposed development shall be returned to the Planning Director no later than 18 days from the date of application for an individual site application and 30 days from the date of application for an area development plan.

(2) In addition, the applicant shall notify the property owners within 200 feet of the route that are not affected surface owners with an

agreement with the applicant. A sign will be posted on the portions of the route crossing or adjacent to a public road within seven days after receiving the application for an individual development plan review. Both the notice and the sign shall indicate that a development plan review application has been made, and the phone number of the Planning Department where information regarding the application may be obtained. The applicant shall notify all property owners within 200 feet of the outside boundary of an area development plan and post a sign at the intersection of each public road entering the area within seven days after receiving the application for an area development plan review. Both the notice and the sign shall indicate that a development plan review application has been made, and the phone number of the Planning Department where information regarding the application may be obtained.

(3) Any determination by the Planning Director to approve or conditionally approve a development plan application must be in writing and mailed or otherwise provided to the applicant no later than 28 days for an individual pipeline development plan or 60 days for an area pipeline development plan, after the date on which the development plan application is filed. Failure to make a determination on the application within this time period shall result in the application being considered approved and the applicant's building permit or access, or other permits being processed.

III. Development Plan Review Standards and Criteria for Approval:

A development plan shall be approved or conditionally approved in accordance with the following standards and criteria.

(1) Right-of-way and any associated facilities shall be located along the perimeters of surface property ownerships and not within areas of agricultural crop production as a general guide. Non-perimeter locations will be acceptable if the surface owner agrees and there is no adverse impact on adjacent properties.

(2) Any equipment used in construction or operation of a pipeline must comply with the Colorado Oil and Gas Conservation Commission Rules and Regulations, Section 802, Noise Abatement.

a. For any pipeline construction or operational facility that will have a substantial impact in adjacent areas, additional noise mitigation may be required. One or more of the following additional noise mitigation measures may be required:

(i) acoustically insulated housing or covers enclosing any motor or engine;

(ii) screening of the site or noise emitting equipment by fence or landscaping;

(iii) a noise management plan specifying the hours of maximum noise and the type, frequency, and level of noise to be emitted; and
(iv) any other noise mitigation measures required by the OGCC.

b. All power sources used in pipeline operations shall have electric motors or muffled internal combustion engines.

(3) Pipeline operations shall be located in a manner to minimize their visual impact and disturbance of the land surface.

a. The location of right-of-way shall be away from prominent natural features and identified environmental resources.

b. Right-of-way shall be located to avoid crossing hills and ridges, and wherever possible, shall be located at the base of slopes.

c. Facilities shall be painted in a uniform, noncontrasting, nonreflective color, to blend with the adjacent landscape. Right-of-way shall be located in existing disturbed areas unless safety or visual concerns or other adverse surface impacts clearly dictate otherwise.

(4) Access points to public roads shall be reviewed by the County Road & Bridge Department and shall be built and maintained in accordance with the Garfield County Road Specifications. All access and oversize or overweight vehicle permits must be obtained from the County Road & Bridge Department prior to beginning operation. All proposed transportation right-of-way to the site shall also be reviewed and approved by the County Road & Bridge Department to minimize traffic hazards and adverse impacts on public roadways. Existing roads shall be used to minimize land disturbance unless traffic safety, visual or noise concerns, or other adverse surface impacts clearly dictate otherwise. Any new roads created as a result of the pipeline construction, intended to be permanent for maintenance and repair operations shall be placed behind a locked gate or other barriers preventing use by recreational vehicles. Any gates or barriers need to be consistent with the surface owner's preferences.

(5) In no case shall an operator engage in activities which threaten an endangered species.

(6) Air contaminant emissions shall be in compliance with the applicable permit and control provisions of the Colorado Air Quality Control Program, Title 25, Resolution 7, C.R.S.

(7) All operations shall comply with all applicable State Public Health and Environment, Water Quality Control standards.

(8) Any proposed waste disposal or treatment facilities shall comply with all requirements of the County Individual Sewage Disposal System Regulations.

(9) The proposed reclamation plan shall provide for a reasonable reclamation schedule in light of the specific surface use and surrounding

land uses, and may require recontouring and revegetation of the surface to pre-disturbance conditions. The Planning Director may also approve a plan for an alternative postdisturbance reclamation, provided the surface owner and the applicant agree, and the plan is in harmony with the surrounding land uses and the Comprehensive Plan.

(10) Should an abandoned pipeline be removed, it will be subject to the original revegetation and weed management requirements in the original application.

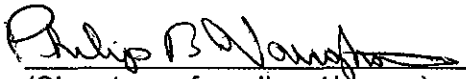
IV. Conditions of Approval

(1) If the Planning Director finds in reviewing a development plan application that the application meets the applicable standards set forth above, the Planning Director shall approve the site plan, and the applicant may continue the processing of the building or other associated County permit applications, or otherwise engage in the construction of the proposed pipeline.

(2) If the Planning Director finds that the application does not meet an applicable standard or standards, the application shall be approved with appropriate reasonable conditions imposed to avoid or minimize the significant adverse impacts of the development. Such conditions may include, but are not necessarily limited to, the relocation or modification of proposed access roads, facilities, or structures; landscaping, buffering, or screening; posting of adequate financial guarantees; compliance with specified surface reclamation measures; or any other measures necessary to mitigate any significant impact on surrounding properties and public infrastructure.

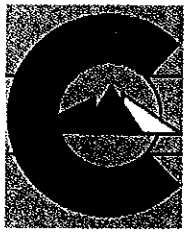
(3) Once the Planning Director issues a determination on the development plan, the determination shall not be final, and no permit based upon the determination shall be issued, for 14 calendar days after the date of the determination, in order to allow time for the applicant to appeal, or for the Board of County Commissioners to call up the determination for further review, pursuant to Sections 9.07.08 and 9.07.09 of the Pipeline Resolution. The Planning Director's determination shall become final, and permits applied for in accordance with the determination may be issued, only after the expiration of this 14-day period, and only if the determination is not reviewed and acted upon by the Board of County Commissioners at a subsequent appeal or call-up hearing.

I have read the statements above and have provided the required attached information which is correct and accurate to the best of my knowledge.



(Signature of applicant/owner)

Last Revised: 2/2006



GARFIELD COUNTY BUILDING AND PLANNING DEPARTMENT
FEE SCHEDULE

Garfield County, pursuant to Board of County Commissioners ("Board") Resolution No. 98-09, has established a fee structure ("Base Fee") for the processing of each type of subdivision and land use applications.

The Base Fee is an estimate of the average number of hours of staff time devoted to an application, multiplied by an hourly rate for the personnel involved. The Board recognized that the subdivision and land use application processing time will vary and that an applicant should pay for the total cost of the review which may require additional billing. Hourly rates based on the hourly salary, and fringe benefits costs of the respective positions combined with an hourly overhead cost for the office will be used to establish the actual cost of County staff time devoted to the review of a particular project.

Actual staff time spent will be charged against the Base Fee. After the Base Fee has been expended, the applicant will be billed based on actual staff hours accrued. Any billing shall be paid in full prior to final consideration of any land use permit, zoning amendment or subdivision plan. If an applicant has previously failed to pay application fees as required, no new or additional applications will be accepted for processing until the outstanding fees are paid.

Checks, including the appropriate Base Fee set forth below, must be submitted with each land use application, and made payable to the Garfield County Treasurer. Applications will not be accepted without the required application fee. Base Fees are non-refundable in full, unless a written request for withdraw from the applicant is submitted prior the initial review of the application materials.

Applications must include an Agreement for Payment Form ("Agreement") set forth below. The Agreement establishes the applicant as being responsible for payment of all costs associated with processing the application. The Agreement must be signed by the party responsible for payment and submitted with the application in order for it to be accepted.

The complete fee schedule for subdivision and land use applications is attached.

GARFIED COUNTY BUILDING AND PLANNING DEPARTMENT
BASE FEES

The following Base Fees shall be received by the County at the time of submittal of any procedural application to which such fees relate. Such Base Fees shall be in addition to and exclusive of any cost for publication or cost of consulting service determined necessary by the Board for the consideration of any application or additional County staff time or expense not covered by the Base Fee, which have not otherwise been paid by the applicant to the County prior to final action upon the application tendered to the County.

TYPE OF PROCEDURE	**BASE FEE**
Vacating Public Roads & Rights-of-Way	$400
Sketch Plan	$325
Preliminary Plan	$675 + application agency review fees and outside consultant review fees, as authorized pursuant to the Regulations, such as the Colorado Geologic Survey
Final Plat	$200
Amended Plat	$100
Exemption from the Definition of Subdivision (SB-35)	$300
Land Use Permits *(Special Use/Conditional Use Permits)*	
▪ Administrative/no public hearing	$250
▪ Board Public Hearing only	$400
▪ Planning Commission and Board review & hearing	$525
Zoning Amendments	
▪ Zone District map amendment	$450
▪ Zone District text amendment	$300
▪ Zone District map & text amendment	$500
▪ PUD Zone District & Text Amendment	$500
▪ PUD Zone District Text Amendment	$500
Board of Adjustment	
▪ Variance	$250
▪ Interpretation	$250
Planning Staff Hourly Rate	
▪ Planning Director	$50.50
▪ Senior Planner	$40.50
▪ Planning Technician	$33.75
▪ Secretary	$30
County Surveyor Review Fee *(includes review of Amended Plats, Final Plats, Exemption Plats)*	Determined by Surveyor$
Mylar Recording Fee	$11 – 1st page $10 each additional page

The following guidelines shall be used for the administration of the fee structure set forth above:

1. **All** applications shall be submitted with a signed Agreement for Payment form set forth below.

2. County staff shall keep accurate record of actual time required for the processing of each land use application, zoning amendment, or subdivision application. Any additional billing will occur commensurate with the additional costs incurred by the County as a result of having to take more time that that covered by the base fee.

3. Any billings shall be paid prior to final consideration of any land use permit, zoning amendment, or subdivision plan. All additional costs shall be paid to the execution of the written resolution confirming action on the application.

4. Final Plats, Amended or Corrected Plats, Exemption Plats or Permits will not be recorded or issued until all fees have been paid.

5. In the event that the Board determines that special expertise is needed to assist them in the review of a land use permit, zoning amendment, or subdivision application, such costs will be borne by the applicant and paid prior to the final consideration of the application. All additional costs shall be paid prior to the execution of the written resolution confirming action on the application.

6. If an application involves multiple reviews, the Applicant shall be charged the highest Base Fee listed above.

7. Types of "Procedures" not listed in the above chart will be charged at an hourly rate based on the pertinent planning staff rate listed above.

8. The Planning Director shall establish appropriate guidelines for the collection of Additional Billings as required.

9. This fee structure shall be revised annually as part of the County budget hearing process.

GARFIELD COUNTY BUILDING AND PLANNING DEPARTMENT

AGREEMENT FOR PAYMENT FORM

(Shall be submitted with application)

GARFIELD COUNTY (hereinafter COUNTY) and Williams Field Services Company, LLC (hereinafter APPLICANT) agree as follows:

1. APPLICANT has submitted to COUNTY an application for Parachute Greasewood Express Pipeline (hereinafter, THE PROJECT).

2. APPLICANT understands and agrees that Garfield County Resolution No. 98-09, as amended, establishes a fee schedule for each type of subdivision or land use review applications, and the guidelines for the administration of the fee structure.

3. APPLICANT and COUNTY agree that because of the size, nature or scope of the proposed project, it is not possible at this time to ascertain the full extent of the costs involved in processing the application. APPLICANT agrees to make payment of the Base Fee, established for the PROJECT, and to thereafter permit additional costs to be billed to APPLICANT. APPLICANT agrees to make additional payments upon notification by the COUNTY when they are necessary as costs are incurred.

4. The Base Fee shall be in addition to and exclusive of any cost for publication or cost of consulting service determined necessary by the Board of County Commissioners for the consideration of an application or additional COUNTY staff time or expense not covered by the Base Fee. If actual recorded costs exceed the initial Base Fee, APPLICANT shall pay additional billings to COUNTY to reimburse the COUNTY for the processing of the PROJECT mentioned above. APPLICANT acknowledges that all billing shall be paid prior to the final consideration by the COUNTY of any land use permit, zoning amendment, or subdivision plan.

APPLICANT

Signature

Date: 5/23/07

Philip Vaughan
Print Name

Mailing Address: 1038 County Road 323
Rifle, CO 81650

10/2004

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WILLIAMS FIELD SERVICES COMPANY, LLC

PARACHUTE GREASEWOOD EXPRESS PIPELINE

GARFIELD COUNTY, COLORADO

DEVELOPMENT PLAN REVIEW FOR RIGHT-OF-WAY APPLICATION

2007

The items below are prepared as per Garfield County Resolution No. 2005-53 and the Garfield County Zoning Resolution 9.07 "Development Plan Review for Pipeline Right-of-way".

1. Development Plan Review for Right-of-way Application Form- 9.07.03

2. Vicinity Map- 9.07.04 (1)
   A. Right-of-way alignment sheets, legal description and Parachute NGL Storage Facility layout.

3. Project Overview- 9.07.04 (2)

4. Ownership- Adjacent properties to proposed right-of-way within 350 feet of any area to be disturbed- 9.07.04 (3) Garfield County notes that surface owners only need be identified.

5. Evidence of surface owner notification and of surface agreements- 9.07.04 (4)

6. Need for Proposed Action- 9.07.04 (5)

7. Regulatory Permit Requirements- 9.07.04 (6)

8. Primary Project Participants- 9.07.04 (7)

9. Project Facilities- 9.07.04 (8)

10. Construction Schedule- 9.07.04 (9)
Please see Tab 22- Construction Management Plan

11. Sensitive Area Survey- 9.07.04 (10)

12. Land Grant/Permits/Authorizations and Stipulations- 9.07.04 (11)
Responsibility: See Item #5 above.

13. Revegetation Plan- 9.07.04 (12)

14. Weed Management Plan- 9.07.04 (13)

15. Emergency Response Plan- 9.07.04 (14)

16. Traffic Impact- 9.07.04 (15)

17. Staging Areas- 9.07.04 (16)

18. Hydrotest Water- 9.07.04 (17)
Please see Tab 22- Construction Management Plan.

19. Garfield County Assessor's Maps- 9.07.05 (2)

20. Listing of Adjacent Property Owners adjacent to or within 200' of the proposed right-of-way- 9.07.05 (2)
Determination was made by Garfield County that this only includes surface owners.

21. Authority of Authorized Representative

22. Construction Management Plan

23. Response letter regarding Development Plan Review Standards and Criteria for Approval. 9.07.06

24. Contact person for Williams Field Services for Garfield County to contact for Garfield County inspection. 9.07.11

25. Colorado Professional Engineer responsible for statement and certification of project, including a digital copy of the surveyed pipeline as-built. 9.07.11

CONSTRUCTION PLAN SET

WILLIAMS FIELD SERVICES, LLC
6"/8" PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
TOWNSHIP 5 & 6 SOUTH, RANGE 96 WEST
GARFIELD COUNTY, COLORADO

Williams FIELD SERVICES

PREPARED BY:

DRIFFIN & ASSOCIATES, INC.
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

Alignment Sheets	
Drawing No	Description
DRG-PAS01-15116	SHEET 1 - 6"/8" Parachute Greasewood Express Liquids Pipeline STA 0+00 to STA 140+00
DRG-PAS02-15116	SHEET 2 - 6"/8" Parachute Greasewood Express Liquids Pipeline STA 140+00 to STA 272+00
DRG-PAS03-15116	SHEET 3 - 6"/8" Parachute Greasewood Express Liquids Pipeline STA 272+00 to STA 379+74
Fabrication Drawings	
Drawing No	Description
DRG-FAB01-15116	6" Launcher Assembly
DRG-FAB02-15116	6" Receiver & 8" Launcher Assemblies
DRG-FAB03-15116	8" Reciever Assembly
Construction & Environmental Detail Drawings	
Drawing No	Description
DRG-DTL01-15116	SHEET 1 Construction and Environmental Details
DRG-15116-9114	Open Cut Crossing - Flume Method
DRG-15116-9126	Typical Matting Streambanks
DRG-15116-9133	Typical Matting Slopes
DRG-15116-9113	Open Cut Crossing - Flowing Waterbody Method
DRG-15116-9103	Typical Sandbag Trench Slope Breakers
DRG-15116-9102	Typical Polyurethane Foam Trench Breakers
DRG-DTL02-15116	SHEET 2 Construction and Environmental Details
DRG-15116-9106	Typical Straw Bale Sediment Barrier (Sht 1 of 2)
DRG-15116-9107	Typical Straw Bale Sediment Barrier (Sht 2 of 2)
DRG-15116-9108	Typical Silt Fence Sediment Barrier (Sht 1 of 2)
DRG-15116-9109	Typical Silt Fence Sediment Barrier (Sht 2 of 2)
DRG-15116-9110	Typical Waterbar (Slope Breaker) (Sht 1 of 2)
DRG-15116-9111	Typical Waterbar (Slope Breaker) (Sht 2 of 2)
DRG-15116-9135	Typical Open-Cut Crossing - Non-flowing Stream Method
DRG-15116-9105	Typical Crossing of Creek or Drainage
DRG-DTL03-15116	SHEET 3 Construction and Environmental Details
DRG-15116-9197A	Typical Detail Bullard Protective Barriers (Sht 1 of 2)
DRG-15116-9197B	Typical Detail Bullard Protective Barriers (Sht 2 of 2)
DRG-15116-9100	Typical Temporary Crossing Ramp Over Existing Pipelines
DRG-15116-9198	Pig Bars for Weld Tee Branch Outlets-Standard Thickness
DRG-15116-9104	Typical Temporary Pipe Stockpile During Construction
DRG-15116-9188	Typical Pipeline Support Pillows of Sandbags or Polyurethane Foam
DRG-DTL04-15116	SHEET 4 Construction and Environmental Details
DRG-15116-9196	Cathodic Protection Test Station Type Configuration, Cadweld & Post Installation Procedures
DRG-15116-9185	Typical Buried Cable Crossing
DRG-15116-9146	Typical Foreign Pipeline Crossing
DRG-15116-7203	Typical Bored Crossing of Road by Uncased Pipeline
DRG-15116-7204	Typical Open Cut Crossing of Road by Uncased Pipeline
DRG-DTL05-15116	SHEET 5 Construction and Environmental Details
DRG-15116-9120	Typical Temporary Soil Containment Berm (Saturated Soils)
DRG-15116-9121	Typical Straw Bale Dewatering Structure - Small Volume
DRG-15116-9122	Typical Straw Bale Dewatering Structure - Large Volume
DRG-15116-9187	Typical Protective Coating Detail
DRG-15116-9153	Typical Exclusion Fence and Lath
DRG-15116-9148	Typical Temporary and Permanent Gate Detail
DRG-15116-9202	Typical Detail Anchor Flange and Concrete Block
DRG-DTL06-15116	SHEET 6 Construction and Environmental Details
DRG-15116-9125	Typical ROW Section Full Width Topsoil Salvage
DRG-15116-9124	Typical ROW Section Trench & Spoil Topsoil Salvage
DRG-15116-9145	Typical ROW Section Blade Width Topsoil Salvage
DRG-15116-9200	Typical Side Hill ROW Section Bi-level Grading
DRG-15116-9160	Typical Large Incised Channel
DRG-15116-9161	Typical Small Incised Channel
Hydrostatic Test Profile	
Drawing No	Description
DRG-HYDRO01-15116	6"/8" Parachute Greasewood Express Liquids P/L Hydrostatic Test Profile
Crossing Drawings	

ENGINEER'S CERTIFICATION

LARRY G. BODYFELT STATES THAT I AM BY OCCUPATION A PROFESSIONAL ENGINEER (CIVIL) AND LAND SURVEYOR EMPLOYED BY WILLIAMS FIELD SERVICES, LLC TO PREPARE DESIGN DRAWINGS FOR THE PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE, THAT THE WORK WAS DONE UNDER MY AUTHORITY AND SUPERVISION COMMENCING FEBRUARY 11, 2007, AND THAT THE DESIGN IS COMPLIANT WITH APPLICABLE SECTIONS OF 49 CFR 195 FEDERAL PIPELINE SAFETY REGULATIONS, TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE AND THE NORMAL AND CUSTOMARY INDUSTRY PRACTICES FOR THIS TYPE OF WORK.

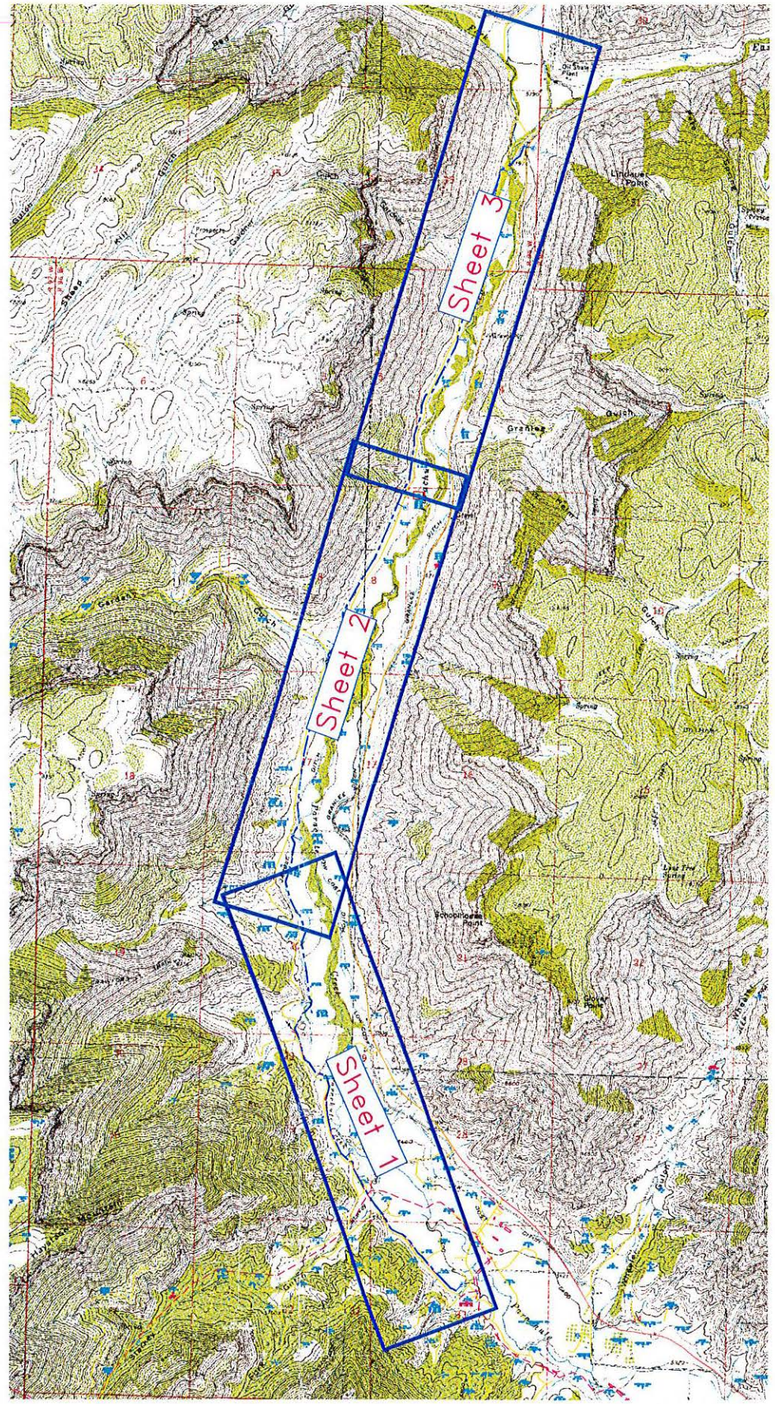
REVIEWED AND APPROVED BY:

LARRY G. BODYFELT, WYOMING PROFESSIONAL ENGINEER (CIVIL) AND LAND SURVEYOR NO. 3507

MICHAEL C. LOCK, COLORADO PROFESSIONAL ENGINEER NO. 37933

VICINITY MAP

REVISIONS					
NO.	DATE		BY	CHK	APPR
0	05/09/07	ISSUED FOR CLIENT REVIEW AND COMMENT	SLS	WRS	



PARACHUTE
SHEET INDEX
SCALE: 1" = 2000'

HORIZONTAL STATIONS

OWNERSHIP

CHEVRON USA INC.
ROW #3
7,589.5 FEET
1.44 MILES

PUCKETT LAND COMPANY
ROW #2
1,709.8 FEET
0.32 MILES

WILLIAMS PRODUCTION RMT COMPANY
ROW #1
4,615.3 FEET
0.87 MILES

CROSSINGS

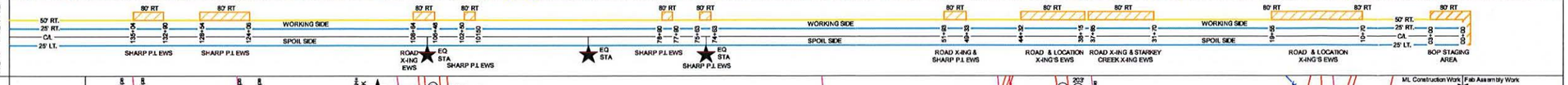
CONSTRUCTION & ENVIRONMENTAL DETAILS

EROSION CONTROL	WB-FULL LENGTH
RECLAMATION/SEED	
ROW WORKSPACE RESTRICTIONS	
CULTURAL MONITOR	
STREAMS/WETLANDS	
UPLANDS/TOPSOIL	FWT-FULL LENGTH
TIMING	
GEOTECHNICAL	
OTHER CROSSINGS	
MISC CONSTRUCTION	
OTHER	

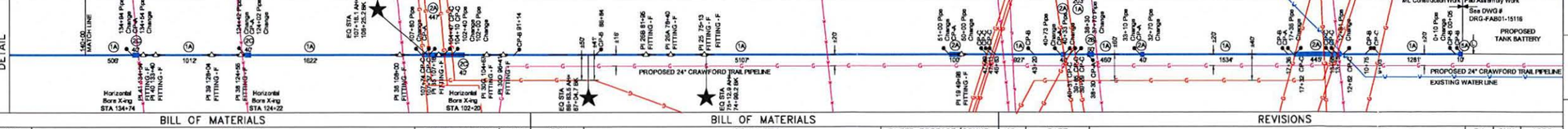
ALIGNMENT

PLAN

ROW WIDTHS



MATERIAL DETAIL



BILL OF MATERIALS

ITEM	DESCRIPTION	SHEET FOOTAGE/COUNT
1	Line Pipe - 8.625" OD x 0.188" WT x Grade API-5L X-42	12,652 LF
2	Line Pipe - 8.625" OD x 0.280" WT x Grade API-5L X-42	1,252 LF
3	Line Pipe - 8.625" OD x 0.188" WT x Grade API-5L X-42	0 LF
4	Line Pipe - 8.625" OD x 0.257" WT x Grade API-5L X-42	0 LF
5	Line Pipe - 8.625" OD x 0.280" WT x Grade API-5L X-52	10 LF
6	Line Pipe - 8.625" OD x 0.322" WT x Grade API-5L X-52	0 LF
A	Pipe Coating TF-FBE Factory Applied	13,732 LF
B	Pipe Coating TF-FBE Factory Applied with Bolt-On Weights	60 LF
C	Pipe Coating ARO over TF-FBE Factory Applied	120 LF
F	Trimmed Fitting Elbow 8" 45° 5R Weld Y-42 STD. (0.280" WT) Segmentable	12 EA
G	Trimmed Fitting Elbow 8" 45° 5R Weld Y-42 STD. (0.322" WT) Segmentable	0 EA

BILL OF MATERIALS

ITEM	DESCRIPTION	SHEET FOOTAGE/COUNT
CP-A	Cathodic Test Lead Type A Pipe-to-soil See DWG No. DRG-J15116-9196	8 EA
CP-B	Cathodic Test Lead Type B Parallel Foreign Pipeline See DWG No. DRG-J15116-9196	7 EA
CP-C	Cathodic Test Lead Type C Foreign Pipeline Crossing See DWG No. DRG-J15116-9196	15 EA

REFERENCE DRAWINGS

NUMBER	DESCRIPTION
DRG-FAB01-15116	6" LAUNCHER ASSEMBLY

NOTES

PI	STATION	DEFLECTION ANGLE
PI-1	1+96.00	22°18'14" RT.
PI-2	7+97.94	01°22'01" RT.
PI-3	14+64.24	28°30'59" LT.
PI-4	15+93.05	13°43'37" RT.
PI-5	18+47.07	23°30'56" RT.
PI-6	19+65.95	32°48'56" LT.
PI-7	21+03.27	12°48'01" LT.
PI-8	23+13.06	18°32'11" LT.
PI-9	24+58.91	33°19'26" RT.
PI-10	26+96.78	39°38'56" RT.
PI-11	28+62.28	14°29'04" RT.
PI-12	27+32.91	17°52'56" RT.
PI-13	29+43.87	09°37'32" LT.
PI-14	30+65.66	04°27'19" LT.
PI-15	31+64.12	06°28'48" LT.
PI-16	36+70.96	06°31'58" RT.
PI-17	43+13.23	01°16'31" RT.
PI-18	47+74.43	19°28'43" RT.
PI-19	49+08.09	59°20'37" LT.
PI-20	51+50.72	23°21'43" RT.
PI-21	54+59.56	21°07'49" RT.
PI-22	61+26.52	14°07'59" RT.
PI-23	66+31.86	07°30'56" RT.
PI-23A	71+12.48	19°36'12" RT.
PI-25	75+12.92	36°34'28" LT.
PI-26	76+09.66	93°28'44" LT.
PI-26A	78+42.31	51°06'19" LT.
PI-26B	81+36.28	38°06'16" RT.
PI-26C	83+31.74	23°00'56" LT.
PI-29	86+83.45	22°51'56" RT.
PI-30	91+13.79	03°29'57" LT.
PI-30A	93+41.90	39°57'37" LT.
PI-30B	94+91.58	13°20'28" LT.
PI-30C	95+63.43	24°32'59" RT.
PI-30D	98+43.94	41°06'17" RT.
PI-30E	101+26.90	18°46'59" RT.
PI-30F	103+24.66	06°48'14" LT.
PI-30G	104+67.35	31°34'56" LT.
PI-36	107+18.57	49°12'56" LT.
PI-36	107+20.31	4°10'51" RT.
PI-37	115+92.27	03°26'57" LT.
PI-38	124+56.98	31°27'29" RT.
PI-39	128+04.43	41°52'54" LT.
PI-40	133+40.48	49°19'18" LT.
PI-41	134+54.38	34°51'39" RT.
PI-42	139+12.89	15°46'52" RT.

EQ STA 74+90.2 BK = 75+12.9 AH

EQ STA 87+04.7 BK = 86+83.5 AH

EQ STA 106+25.2 BK = 107+18.1 AH

LEGEND

- EXISTING ACCESS ROAD
- EXISTING PIPELINE
- PROPERTY OWNERSHIP LINE
- EXTRA WORKSPACE/STAGING AREA LINE
- CONSTRUCTION ROW LINE
- PERMANENT ROW LINE
- C/L PROPOSED PIPELINE
- CREEK OR DRAINAGE LINE
- METER RUN
- REGULATOR
- SEPARATOR
- INDIRECT HEATER
- COMPRESSOR
- DEHY
- HYDRO TEST
- REDUCER
- SLUG CATCHER LIQUID RECEIVER
- SELF-TAPPING TEE
- PLUG VALVE
- GATE VALVE
- BALL VALVE
- CHECK VALVE
- VALVE W/OPERATOR
- FOUND CORNER
- CALC. CORNER
- SURVEY CONTROL POINT
- INTERSTATE HWY.
- STATE HWY.
- COUNTY RD.
- BLM RD.
- M.P. MARKER
- INDUCTION BEND OR FITTING
- WELL LOCATION
- PROPOSED WELL LOCATION
- RIVER WEIGHT
- HEAVY WALL SECTION
- PIG LAUNCHER
- PIG RECEIVER
- BLOW OFF
- CATHODIC SYSTEM
- CATHODIC TEST LEAD
- WELD CAP
- FLANGE
- EQUATION STATION
- BOUNDARY LINE
- UNIMPROVED ROAD
- POWER LINE
- CABLE
- TELEPHONE
- GAS PIPELINE
- OIL PIPELINE
- FENCE

REVISIONS

NO.	DATE		BY	CHK	APPR
0	04/03/07	ISSUED FOR CLIENT REVIEW AND COMMENT	SLS	WRS	
1	04/25/07	REVISED FOOTAGES, ADDED 6.625" (0.280" W.T.) X-52 PIPE	SLS	WRS	
2	05/16/07	REVISED ALIGNMENT TO REFLECT RE-ROUTES	SLS	WRS	
3	05/21/07	REVISED ALIGNMENT TO REFLECT RE-ROUTE No. 5	SLS	WRS	

Williams
WILLIAMS FIELD SERVICES

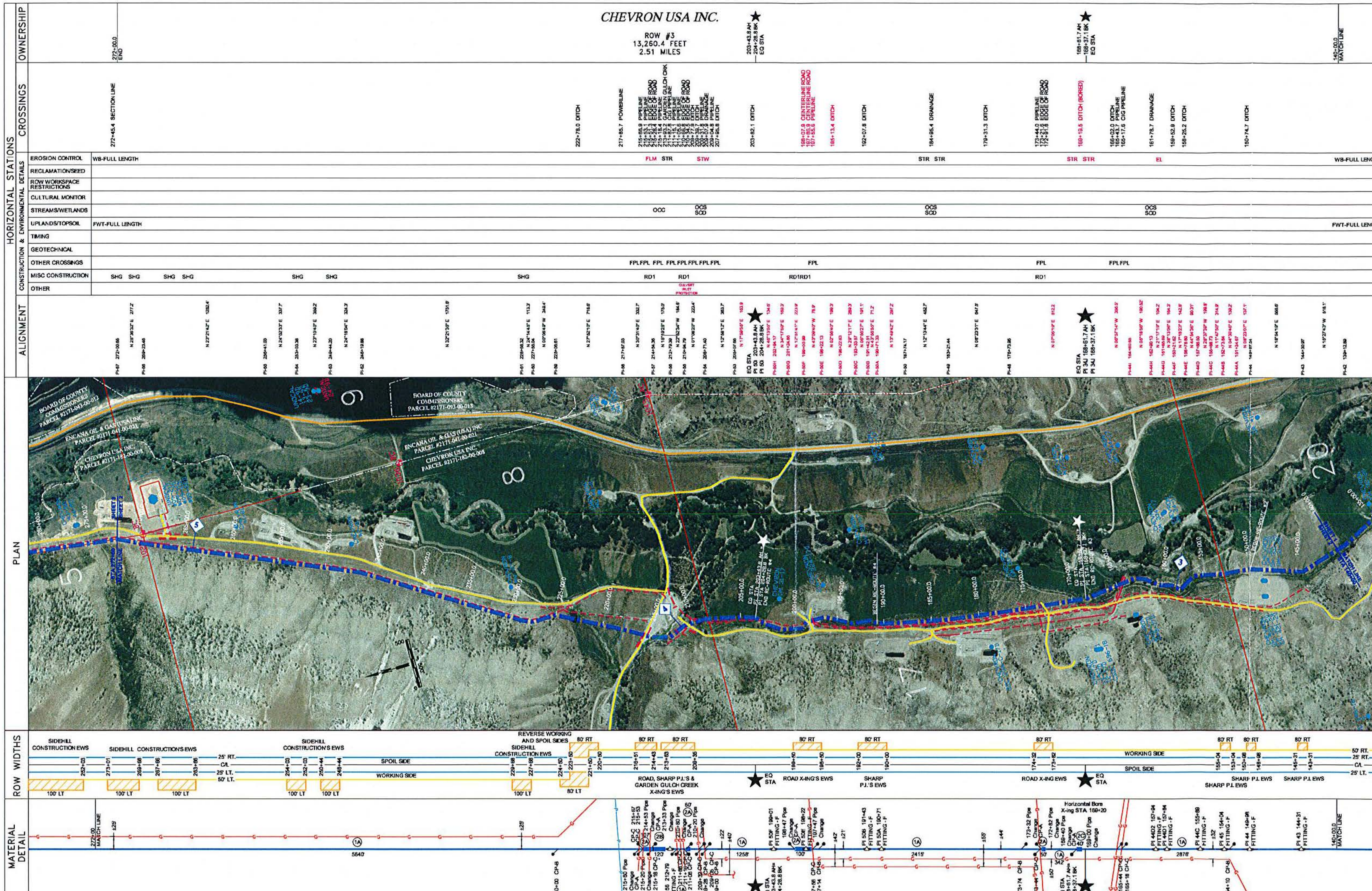
DRG RIFFIN & ASSOCIATES, INC.
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE

0+00.0 TO 140+00.0
SEC 33, 28, 29 & 20, T.6 S., R.96 W.
GARFIELD COUNTY, COLORADO

SCALE: 1" = 500'	DRAWN BY: SLS
DATE: 04/03/07	CHECKED BY: WRS
JOB No.: 15116	PLOT SCALE: 1" = 500'
APPROVED:	SHEET 1 OF 3

DWG# DRG-PAS01-15116



NOTES

PI	STATION	DEFLECTION ANGLE
PI-43	144+30.97	34°22'01" RT.
PI-44	149+97.54	10°31'12" LT.
PI-44A	151+34.67	03°52'21" LT.
PI-44B	152+73.8	07°17'03" RT.
PI-44C	156+66.73	40°25'28" LT.
PI-44D	157+66.50	73°32'15" RT.
PI-44E	158+78.80	27°36'14" LT.
PI-44F	160+21.62	20°54'44" RT.
PI-44G	161+65.59	15°55'47" LT.
PI-44H	162+90.13	25°36'15" LT.
PI-44I	164+60.55	01°38'18" LT.
PI-44J / PI-44J	168+37.13 / 168+61.74	14°02'45" RT.
PI-48	176+73.96	01°17'12" RT.
PI-49	183+21.44	03°50'12" RT.
PI-50	187+74.17	01°36'59" RT.
PI-50A	190+71.33	30°07'13" RT.
PI-50B	191+42.51	37°00'28" LT.
PI-50C	193+33.57	22°15'50" RT.
PI-50D	196+22.63	26°15'38" LT.
PI-50E	196+22.13	46°06'20" LT.
PI-50F	199+00.99	56°01'21" RT.
PI-50G	201+24.36	21°26'18" RT.
PI-50H	202+94.17	11°56'06" RT.
PI-50I / PI-50I	204+28.75 / 203+43.77	28°13'09" LT.
PI-53	205+07.66	05°01'45" LT.
PI-54	208+71.40	14°06'32" LT.
PI-55	210+94.79	21°44'14" LT.
PI-56	212+79.39	38°11'58" RT.
PI-57	214+54.36	15°12'16" RT.
PI-58	217+67.03	02°39'30" LT.
PI-59	225+06.61	27°58'59" LT.
PI-60	227+56.04	24°21'34" RT.
PI-61	228+68.32	08°06'49" RT.
PI-62	246+19.88	08°03'30" LT.
PI-63	249+44.20	01°07'25" LT.
PI-64	253+03.38	00°51'53" RT.
PI-65	256+41.03	00°40'51" LT.
PI-66	269+23.46	02°14'50" RT.
PI-67	272+00.66	17°39'41" LT.

EQ STA 168+37.1 BK= 168+61.7 AH ★

EQ STA 204+28.8 BK= 203+43.8 AH ★

LEGEND

- EXISTING ACCESS ROAD
- EXISTING PIPELINE
- PROPERTY OWNERSHIP LINE
- EXTRA WORKSPACE/STAGING AREA LINE
- CONSTRUCTION ROW LINE
- PERMANENT ROW LINE
- C/L PROPOSED PIPELINE
- CREEK OR DRAINAGE LINE
- M METER RUN
- R REGULATOR
- S SEPARATOR
- H INDIRECT HEATER
- C COMPRESSOR
- D DEHY
- HYDRO TEST
- REDUCER
- SLUG CATCHER LIQUID RECEIVER
- SELF-TAPPING TEE
- PLUG VALVE
- GATE VALVE
- BALL VALVE
- CHECK VALVE
- VALVE W/OPERATOR
- FOUND CORNER
- CALC. CORNER
- SURVEY CONTROL POINT
- INTERSTATE HWY.
- STATE HWY.
- COUNTY RD.
- BLM RD.
- M.P. MARKER
- INDUCTION BEND OR FITTING
- WELL LOCATION
- PROPOSED WELL LOCATION
- RIVER WEIGHT
- HEAVY WALL SECTION
- PIG LAUNCHER
- PIG RECEIVER
- BLOW OFF
- CATHODIC SYSTEM
- CATHODIC TEST LEAD
- WELD CAP
- FLANGE
- EQUATION STATION
- BOUNDARY LINE
- UNIMPROVED ROAD
- —P— POWER LINE
- —C— CABLE
- —T— TELEPHONE
- —G— GAS PIPELINE
- —O— OIL PIPELINE
- —X— FENCE

BILL OF MATERIALS

ITEM	DESCRIPTION	SHEET FOOTAGE/COUNT
1	Line Pipe - 6.625" OD x 0.188" WT x Grade API-5L X-42	12,784 LF
2	Line Pipe - 6.625" OD x 0.280" WT x Grade API-5L X-42	477 LF
3	Line Pipe - 8.625" OD x 0.188" WT x Grade API-5L X-42	0 LF
4	Line Pipe - 8.625" OD x 0.250" WT x Grade API-5L X-42	0 LF
5	Line Pipe - 6.625" OD x 0.280" WT x Grade API-5L X-52	0 LF
6	Line Pipe - 8.625" OD x 0.322" WT x Grade API-5L X-52	0 LF
A	Pipe Coating TF-FBE Factory Applied	13,101 LF
B	Pipe Coating TF-FBE Factory Applied with Bolt-On Weights	120 LF
C	Pipe Coating ARO over TF-FBE Factory Applied	40 LF
F	Trimmed Fitting Elbow 6" 45° 5R Weld Y-42 STD. (0.280" WT) Segmentable	11 EA
G	Trimmed Fitting Elbow 8" 45° 5R Weld Y-42 STD. (0.322" WT) Segmentable	0 EA

BILL OF MATERIALS

ITEM		SHEET FOOTAGE/COUNT
CP-A	Cathodic Test Lead Type A Pipe-to-soil See DWG No. DRG-J15116-9196	4 EA
CP-B	Cathodic Test Lead Type B Parallel Foreign Pipeline See DWG No. DRG-J15116-9196	6 EA
CP-C	Cathodic Test Lead Type C Foreign Pipeline Crossing See DWG No. DRG-J15116-9196	12 EA

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

NO.	DATE		BY	CHK	APPR
0	04/03/07	ISSUED FOR CLIENT REVIEW AND COMMENT	SLS	WRS	
1	05/16/07	REVISED ALIGNMENT TO REFLECT RE-ROUTES	SLS	WRS	

WILLIAMS FIELD SERVICES

GRIFFIN & ASSOCIATES, INC.
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE

140+00.0 TO 272+00.0

SEC 20, 17, 8 & 5, T.6 S., R.96 W.
GARFIELD COUNTY, COLORADO

SCALE: 1" = 500'	DRAWN BY: SLS
DATE: 04/03/07	CHECKED BY: WRS
JOB No.: 15116	PLOT SCALE: 1" = 500'
APPROVED:	SHEET 2 OF 3

DWG# DRG-PAS02-15116

OWNERSHIP		
	ENCANA OIL & GAS (USA) INC. ROW #4 3,107.5 FEET 0.59 MILES	CHEVRON USA INC. ROW #3 7,666.6 FEET 1.45 MILES

HORIZONTAL STATIONS — CONSTRUCTION & ENVIRONMENTAL DETAILS

EROSION CONTROL	WB-FULL LENGTH — STW STW — EL — STW — WB-FULL LENGTH
RECLAMATION/SEED	
ROW WORKSPACE RESTRICTIONS	
CULTURAL MONITOR	
STREAMS/WETLANDS	OCC
UPLANDS/TOPSOIL	FWT-FULL LENGTH — FWT-FULL LENGTH
TIMING	
GEOTECHNICAL	
OTHER CROSSINGS	FPL FPL FPL
MISC CONSTRUCTION	XFN RD1 RD1 XFN XFN SHG SHG RD1 SHG SHG SHG SHG SHG SHG SHG SHG SHG SHG SHG SHG
OTHER	

ROW WIDTHS: ROAD & PARACHUTE CREEK X-ING & SHARP P.I. EWS & EOP STAGING AREA; REVERSE WORKING AND SPOIL SIDES; SHARP P.I.'S EWS; ROAD X-ING & SHARP P.I. EWS; ROAD X-ING, SHARP P.I. & SIDEHILL CONSTRUCTION EWS; SIDEHILL CONSTRUCTION EWS; SPOIL SIDE; WORKING SIDE; 50' RT.; 25' RT.; C/L; 25' LT.; 50' LT.

NOTES

PI	STATION	DEFLECTION ANGLE
PI-67	272+00.66	17°39'41" LT.
PI-68	281+89.08	02°54'25" LT.
PI-69	283+21.74	09°01'56" LT.
PI-70	284+88.63	23°41'45" RT.
PI-71	291+36.66	17°06'35" LT.
PI-72	294+17.91	18°41'25" RT.
PI-73	297+23.66	34°06'45" RT.
PI-74	298+26.24	15°13'22" RT.
PI-75	299+48.33	44°06'48" LT.
PI-76	307+46.93	03°04'37" RT.
PI-77	314+36.36	08°54'13" LT.
PI-78	315+99.79	11°57'45" LT.
PI-79	319+37.50	11°14'04" RT.
PI-80	331+06.12	08°29'14" RT.
PI-81	340+49.52	49°28'56" LT.
PI-82	341+79.86	40°49'55" RT.
PI-83	342+77.83	44°44'09" LT.
PI-84	343+82.75	40°43'34" RT.
PI-85	348+60.62	34°33'22" LT.
PI-86	360+48.96	22°22'31" RT.
PI-87	356+23.32	00°24'46" LT.
PI-88	358+72.62	16°06'39" RT.
PI-89	364+43.20	00°03'57" LT.
PI-90	369+21.91	37°53'44" RT.
PI-91	370+59.76	13°26'40" RT.
PI-92	371+58.06	14°21'53" LT.
PI-93	372+61.06	13°44'13" LT.
PI-94	373+62.43	01°17'24" RT.
PI-95	374+53.49	10°56'31" RT.
PI-96	376+22.44	29°04'25" LT.
PI-97	377+78.83	07°04'20" LT.
PI-98	379+37.03	86°22'34" RT.

LEGEND

EXISTING ACCESS ROAD
EXISTING PIPELINE
PROPERTY OWNERSHIP LINE
EXTRA WORKSPACE/STAGING AREA LINE
CONSTRUCTION ROW LINE
PERMANENT ROW LINE
C/L PROPOSED PIPELINE
CREEK OR DRAINAGE LINE

M METER RUN	INDUCTION BEND OR FITTING
R REGULATOR	WELL LOCATION
S SEPARATOR	PROPOSED WELL LOCATION
H INDIRECT HEATER	RIVER WEIGHT
C COMPRESSOR	HEAVY WALL SECTION
D DEHY	PIG LAUNCHER
HYDRO TEST	PIG RECEIVER
REDUCER	BLOW OFF
SLUG CATCHER LIQUID RECEIVER	CATHODIC SYSTEM
SELF-TAPPING TEE	CATHODIC TEST LEAD
PLUG VALVE	WELD CAP
GATE VALVE	FLANGE
BALL VALVE	EQUATION STATION
CHECK VALVE	BOUNDARY LINE
VALVE W/OPERATOR	UNIMPROVED ROAD
FOUND CORNER	—P— POWER LINE
CALC. CORNER	—C— CABLE
SURVEY CONTROL POINT	—T— TELEPHONE
INTERSTATE HWY.	—G— GAS PIPELINE
STATE HWY.	—O— OIL PIPELINE
COUNTY RD.	—X— FENCE
BLM RD.	
M.P. MARKER	

BILL OF MATERIALS

ITEM	DESCRIPTION	SHEET FOOTAGE/COUNT
1	Line Pipe - 6.625" OD x 0.188" WT x Grade API-5L X-42	7,031 LF
2	Line Pipe - 6.625" OD x 0.280" WT x Grade API-5L X-42	40 LF
3	Line Pipe - 8.625" OD x 0.188" WT x Grade API-5L X-42	0 LF
4	Line Pipe - 8.625" OD x 0.250" WT x Grade API-5L X-42	3,057 LF
5	Line Pipe - 6.625" OD x 0.280" WT x Grade API-5L X-52	340 LF
6	Line Pipe - 8.625" OD x 0.322" WT x Grade API-5L X-52	256 LF
A	Pipe Coating TF-FBE Factory Applied	10,724 LF
B	Pipe Coating TF-FBE Factory Applied with Bolt-On Weights	50 LF
F	Trimmed Fitting Elbow 6" 45° 5R Weld Y-42 STD. (0.280" WT) Segmentable	5 EA
G	Trimmed Fitting Elbow 8" 45° 5R Weld Y-42 STD. (0.322" WT) Segmentable	5 EA
CP-A	Cathodic Test Lead Type A Pipe-to-soil See DWG No. DRG-J15116-9196	2 EA

BILL OF MATERIALS

ITEM	DESCRIPTION	SHEET FOOTAGE/COUNT
CP-B	Cathodic Test Lead Type B Parallel Foreign Pipeline See DWG No. DRG-J15116-9196	2 EA
CP-C	Cathodic Test Lead Type C Foreign Pipeline Crossing See DWG No. DRG-J15116-9196	3 EA

REFERENCE DRAWINGS

NUMBER	DESCRIPTION
DRG-FAB02-15116	6" RECEIVER & 8" LAUNCHER ASSEMBLY

REVISIONS

NO.	DATE		BY	CHK	APPR
0	04/03/07	ISSUED FOR CLIENT REVIEW AND COMMENT	SLS	WRS	
1	04/26/07	REVISED FOOTAGES, ADDED 8.625" (0.322" W.T.) X-52 PIPE	SLS	WRS	
2	05/16/07	REVISED FOOTAGES WITH PLACEMENT OF LAUNCHER/RECEIVER PARCEL	SLS	WRS	

WILLIAMS FIELD SERVICES

DRG RIFFIN & ASSOCIATES, INC.
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901

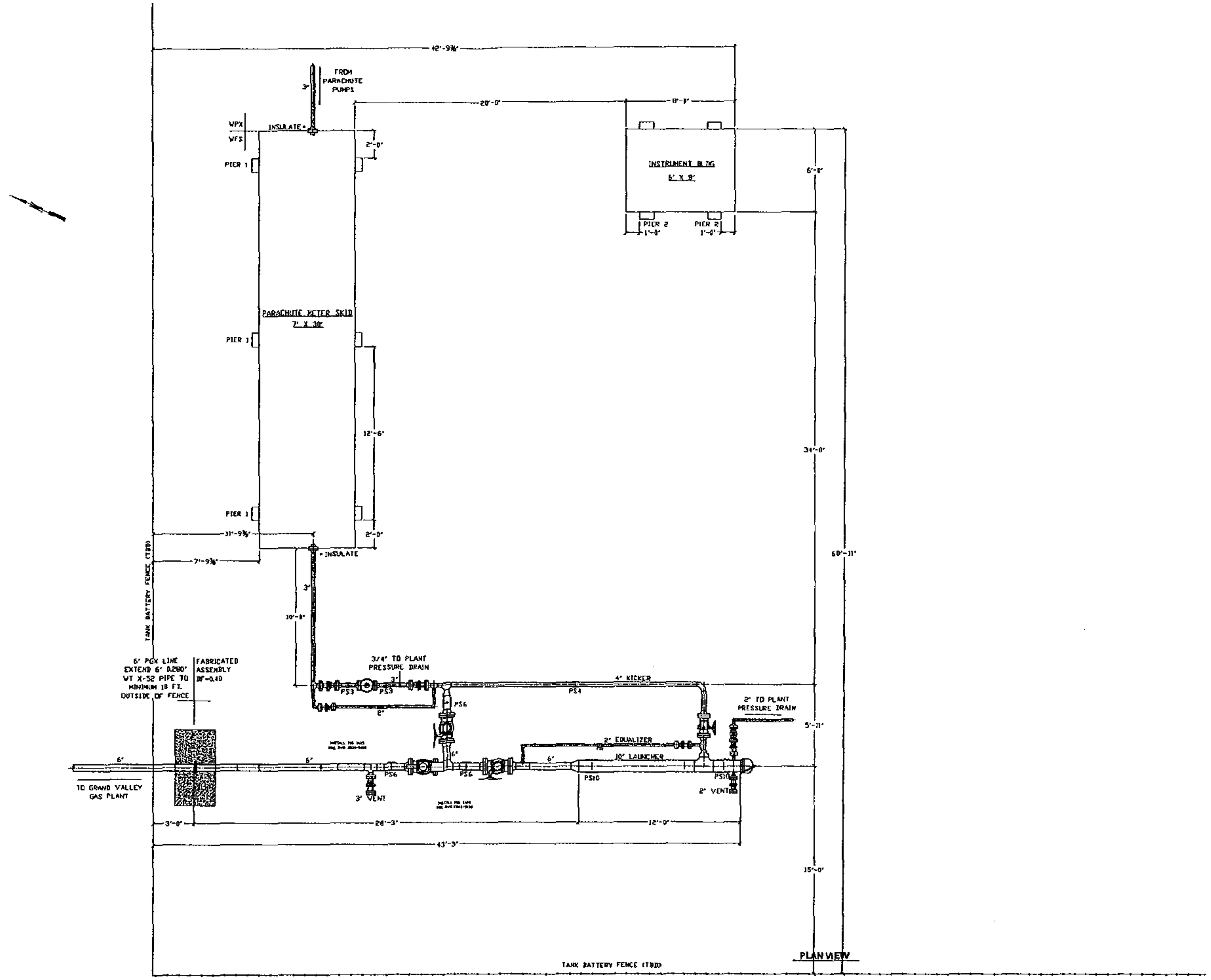
PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE

272+00.0 TO 379+74.1

SEC 5 & 4, T.6 S., R.96 W., SEC 36, T.5 S., R.96 W. GARFIELD COUNTY, COLORADO

SCALE: 1" = 500'	DRAWN BY: SLS
DATE: 04/03/07	CHECKED BY: WRS
JOB No.: 15116	PLOT SCALE: 1" = 500'
APPROVED:	SHEET 3 OF 3

DWG# DRG-PAS03-15116



NOTES
1. EXISTING BURIED LINES SHALL BE LOCATED PRIOR TO EXCAVATION.
2. ALL UNDERGROUND BARE PIPE AND FITTINGS SHALL BE DOUBLE WRAPPED WITH PRIMER AND TAPE. TAPE WRAP SHALL EXTEND 12" ABOVE FINISHED GRADE. ALL ABOVE GROUND FACILITIES SHALL BE SANDBLASTED, PRIMERED AND PAINTED.
3. ALL CONCRETE PAD DIMENSIONS SHALL BE SHOWN ON DRAWING AND POURED IN PLACE. ROCK SHIELD SHALL BE INSTALLED BETWEEN PIPE AND CONCRETE PADS AND EXTEND PAST CONCRETE.
4. + DESIGNATES INSULATION LOCATIONS.

REFERENCE DRAWINGS

NUMBER	DESCRIPTION
PGX-P01-001 REV 1	PARACHUTE NGL BOOSTER AND MAINLINE PUMPS P&ID
WMPP0207 REV 5	CORIOLIS METER SYSTEM

REVISIONS

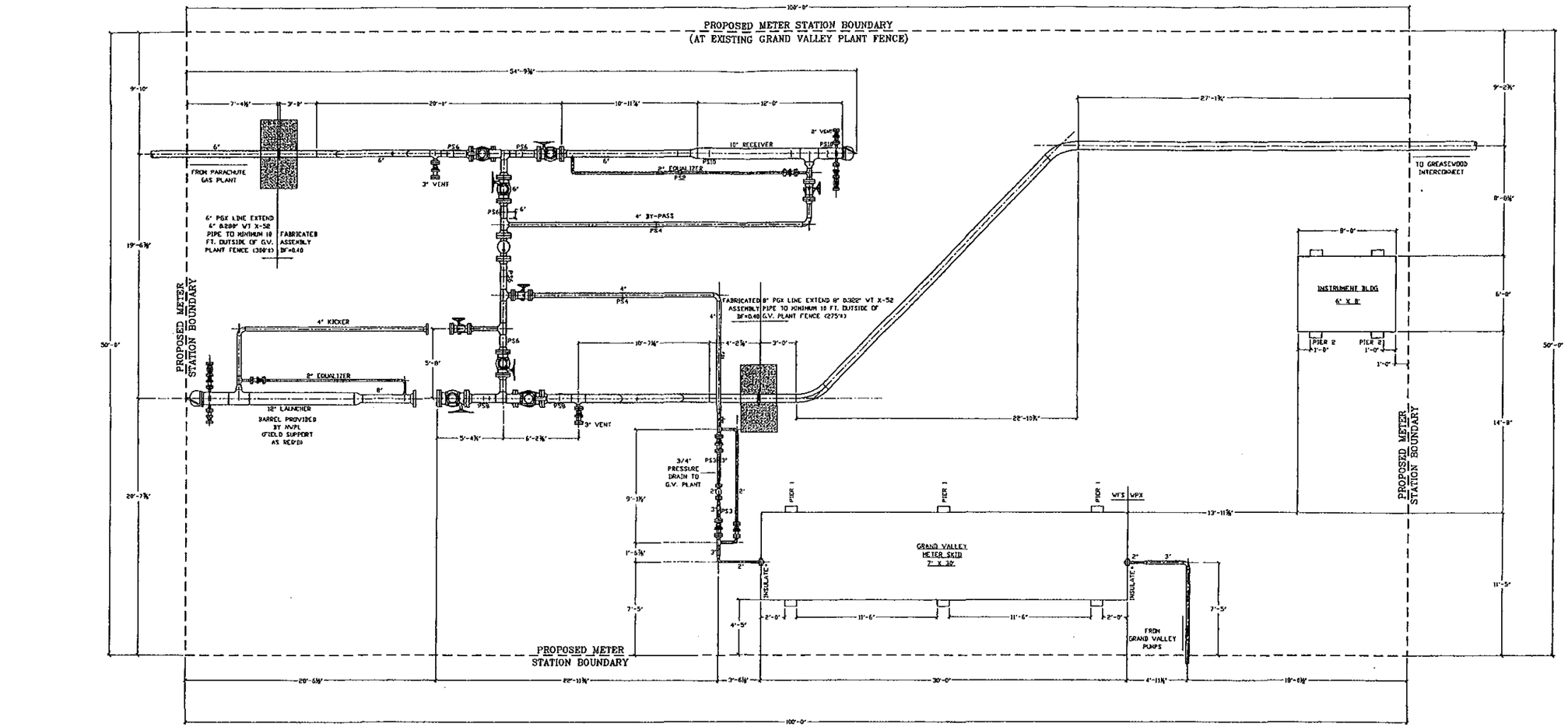
NO.	DATE	DESCRIPTION	BY	CHK	APPR
0	5/14/07	ISSUED FOR CLIENT REVIEW	TRS		
1	5/18/07	REVISED PER CLIENT COMMENTS, ISSUED FOR CLIENT REVIEW	TRS		

DRG GRIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028

Williams

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE SITE PLAN 6" LAUNCHER AND END FACILITIES AT PARACHUTE TANK BATTERY

SCALE: 1/4"=1'-0"
JOB No.: 15116
DRG-FAB01-15116
SEC33 T6S, R96W, GARFIELD COUNTY, COLORADO
1 OF 3



PLAN VIEW

NOTES

1. EXISTING BURIED LINES SHALL BE LOCATED PRIOR TO EXCAVATION.
2. ALL UNDERGROUND BARE PIPE AND FITTINGS SHALL BE DOUBLE WRAPPED WITH PRIMER AND TAPE. TAPE WRAP SHALL EXTEND 12" ABOVE FINISHED GRADE. ALL ABOVE GROUND FACILITIES SHALL BE SANDBLASTED, PRIMERED AND PAINTED.
3. ALL CONCRETE PAD DIMENSIONS SHALL BE SHOWN ON DRAWING AND POURED IN PLACE. ROCK SHIELD SHALL BE INSTALLED BETWEEN PIPE AND CONCRETE PADS AND EXTEND PAST CONCRETE.
4. • DESIGNATES INSULATION LOCATIONS.

REFERENCE DRAWINGS

NUMBER	DESCRIPTION
POX-P01-002 REV2	GRAND VALLEY MAIN PUMP STATION P&ID
WMGV0407	CORIOLIS METER SYSTEM (GRAND VALLEY PLANT)

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APPR
0	5/31/07	ISSUED FOR CLIENT REVIEW	BLS	WRS	

DRG GRIFFIN & ASSOCIATES, INC.
1444 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-8025

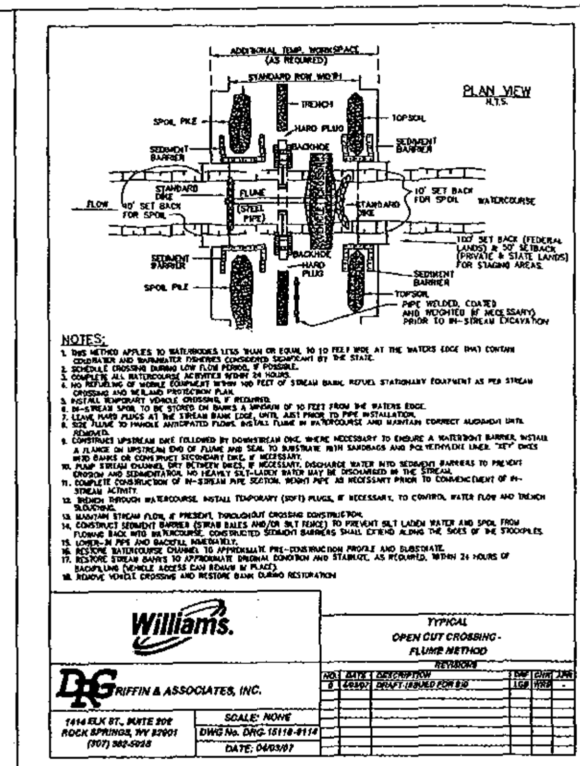
Williams

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE SITE PLAN 6" RECEIVER, 8" LAUNCHER AND FACILITIES AT GRAND VALLEY PLANT

SCALE: 1/4"=1'-0" | DRG-FAB02-15116
JOB No.: 15116 | 1 OF 3
SEC36 T5S, R96W, GARFIELD COUNTY, COLORADO

ALIGNMENT SHEET ENVIRONMENTAL AND MISCELLANEOUS BAR CODE LEGEND
ENVIRONMENTAL MITIGATION AND CONSTRUCTION DETAIL LOCATON AND METHOD DESIGNATION

	SHEET CODE	EXPLANATION
ROL	WB	INSTALL WATER BAR WHERE REQUIRED ACCORDING TO THE PROJECT REQUIREMENTS. DRG-15116-9110, DRG-15116-9111
	TB	INSTALL TRENCH BREAKERS ACCORDING TO THE PROJECT REQUIREMENTS FOAM OR SANDBAG TYPE AND SPACING AS DIRECTED BY COMPANY REPRESENTATIVE. DRG-15116-9102, DRG-15116-9103
	SF	SILT FENCE INSTALLATION. DRG-15116-9108, DRG-15116-9109
	STW	STRAW BALE EROSION BARRIER INSTALLATION. DRG-15116-9106, DRG-15116-9107
	EL	EROSION CONTROL / SEDIMENT ("WATTLE") LOGS DRG-15116-9187
	MAT	EROSION CONTROL MATTING FOR SLOPES SHALL BE USED AS DIRECTED. DRG-15116-9133
	STR	TYPICAL MATTING FOR STREAMBANKS. DRG-15116-9128
OL	DUST	DUSTS CONTROL REQUIREMENTS APPLY. SEE PLAN OF DEVELOPMENT AND OTHER APPLICABLE ENVIRONMENTAL DOCUMENTATION.
	SD1	SEED MIX #1 (PENDING)
	SD2	SEED MIX #2 (PENDING)
	SD3	SEED MIX #3 (PENDING)
	BS	THE BROADCAST SEEDING METHOD IS TO BE USED. SEE BLM STIPULATIONS, PLAN OF DEVELOPMENT, AND OTHER PROJECT ENVIRONMENTAL DOCUMENTS FOR DETAILS
	DS	THE DRILLING SEEDING METHOD IS TO BE USED. SEE BLM STIPULATIONS, PLAN OF DEVELOPMENT, AND OTHER PROJECT ENVIRONMENTAL DOCUMENTS FOR DETAILS
	(TBA)	PENDING OR NOT REQUIRED
N	(TBA)	PENDING OR NOT REQUIRED
TS	(TBA)	PENDING OR NOT REQUIRED
	SR20R	SENSITIVE RESOURCE AREA. THE WIDTH OF THE WORK AREA REMAINING AFTER THE RESTRICTION ON THE RIGHT SIDE OF CENTERLINE IS PROVIDED. FOR EXAMPLE: "SR20R" MEANS THAT ONLY 20 FEET REMAIN FOR WORK AREA RIGHT OF THE CENTERLINE. THE WORK AREA LEFT OF THE CENTERLINE IS UNAFFECTED.
	SR20L	SENSITIVE RESOURCE AREA. THE WIDTH OF THE WORK AREA REMAINING AFTER THE RESTRICTION ON THE RIGHT SIDE OF CENTERLINE IS PROVIDED. FOR EXAMPLE: "SR20L" MEANS THAT ONLY 20 FEET REMAIN FOR WORK AREA LEFT OF THE CENTERLINE. THE WORK AREA RIGHT OF THE CENTERLINE IS UNAFFECTED.
	EXF	EXCLUSION FENCING REQUIRED. DRG-15116-9153
	XFN	TEMPORARY AND PERMANENT GATE. DRG-15116-9148
ED	MT1	MONITOR EARTH DISTURBANCE. CULTURAL MONITORING REQUIRED FOR ALL EARTH DISTURBING ACTIVITIES, CLEARING, GRADING, TRENCHING
	MT2	MONITOR TRENCHING, CULTURAL MONITORING REQUIRED FOR TRENCHING ONLY
ON	(TBA)	PENDING OR NOT REQUIRED
E	(TBA)	PENDING OR NOT REQUIRED
ING	FLM	CREEK OR IRRIGATION DITCH FLUME CROSSING. DRG-15116-9114
	OCS	SMALL CREEK OR DRAINAGE OPEN-CUT CROSSING. DRG-15116-9105
	OCC	OPEN CUT STREAM CROSSING GREATER THAN 10 FEET PLAN VIEW. DRG-15116-9113
	SCD	OPEN CUT. THE DRAINAGE IS EXPECTED TO BE DRY AT THE TIME OF CONSTRUCTION. DRG-15116-9135
	(TBA)	VISUAL RESOURCE PROTECTION REQUIREMENTS APPLY. REFER TO BLM STIPULATIONS AND OTHER PROJECT ENVIRONMENTAL DOCUMENTS FOR REQUIREMENTS. SITE SPECIFIC REQUIREMENTS FOR FEATHERING, EXTRA WORKSPACE SETBACKS FROM ROADS AND OTHER PROCEDURES MAY BE REQUIRED.
	(TBA)	AREAS INDICATED REQUIRE SPECIAL CLEARING AND GRADING METHODS. REFER TO BLM STIPULATIONS AND OTHER PROJECT ENVIRONMENTAL DOCUMENTS FOR REQUIREMENTS.
IOE	FWT	R.O.W. SECTION WITH FULL WIDTH TOPSOIL SALVAGE. DRG-15116-9125
	TST	R.O.W. SECTION TRENCH & SPOIL AREA TOPSOIL SALVAGE. DRG-15116-9124
	BWT	R.O.W. SECTION BLADE WIDTH TOPSOIL SALVAGE. DRG-15116-9145
	SHG	SIDE HILL R.O.W. SECTION WITH BI-LEVEL GRADING. DRG-15116-9200
S	BLS	BLASTING RESTRICTIONS APPLY IN THIS AREA SHOULD BLASTING BE REQUIRED TO EXCAVATE TRENCH.
	(TBA)	SPECIAL PROVISION FOR NOXIOUS WEED CONTROL AND MITIGATION APPLY FOR THIS LOCATION. SEE BLM STIPULATIONS AND OTHER PROJECT ENVIRONMENTAL DOCUMENTS FOR REQUIREMENTS
LIFE	(TBA)	AVOID IN STREAM/RIVER ACTIVITY. THE DATES FOR THE AVOIDANCE WINDOW FOR STREAM OR RIVER CONSTRUCTION ARE PROVIDED.
	(TBA)	AVOID WILDLIFE CRITICAL ACTIVITY. THE DATES FOR THE AVOIDANCE WINDOW FOR WILDLIFE ARE PROVIDED.
	HNT	AREA INDICATED HAS A HUNTING RESTRICTION DURING THE PERIOD LISTED. SEE LINE LIST RESTRICTION INFORMATION AND OTHER REQUIREMENTS OF THE CONTRACT DOCUMENTS.
	IRG	IRRIGATION RESTRICTION. AREA INDICATED HAS A RESTRICTION BECAUSE OF LANDOWNER SEASONAL CROP AND IRRIGATION ACTIVITY. SEE LINE LIST AND OTHER PROJECT CONTRACT DOCUMENTS FOR RESTRICTION INFORMATION AND MITIGATION REQUIREMENTS.
EL	SIC	SMALL INCISED CHANNEL CROSSING. DRG-15116-9181
ON	LIC	LARGE INCISED CHANNEL CROSSING. DRG-15116-9160
NT	(TBA)	PENDING OR NOT REQUIRED
AYS	RD1	OPEN CUT UNCASED ROAD CROSSING. DRG-15116-7204
	RD2	ROAD CROSSING - BORED - UNCASED. DRG-15116-7203
IALS	FLM	CREEK OR IRRIGATION DITCH FLUME CROSSING. DRG-15116-9114
	FPL	FOREIGN PIPELINE CROSSING. DRG-15116-9148
	CBL	CABLE UTILITY CROSSING. DRG-15116-9186
	PB1	INSTALL PROTECTIVE BULLARD POST TYPE 1. DRG-15116 9197A
	PB2	INSTALL PROTECTIVE BULLARD POST TYPE 2. DRG-15116-9197A
	PB3	INSTALL PROTECTIVE BULLARD POST TYPE 3. DRG-15116-9197B
	PBJ	INSTALL PROTECTIVE "JERSEY" BARRIERS (PRE-CAST REINFORCED CONCRETE UNITS). DRG-15116-9197B
	CPA	INSTALL CATHODIC PROTECTION TEST STATION TYPE A PIPE-TO-SOIL. DRG-15116-9196
	CPB	INSTALL CATHODIC PROTECTION TEST STATION TYPE B PARALLEL FOREIGN PIPELINE. DRG-15116-9196
	CPC	INSTALL CATHODIC PROTECTION TEST STATION TYPE C FOREIGN CROSSING. DRG-15116-9196
	CPD	INSTALL CATHODIC PROTECTION TEST STATION TYPE D CURRENT TEST TAP. DRG-15116-9196
	CPE	INSTALL CATHODIC PROTECTION TEST STATION TYPE E PERMANENT REFERENCE ELECTRODE. DRG-15116-9196



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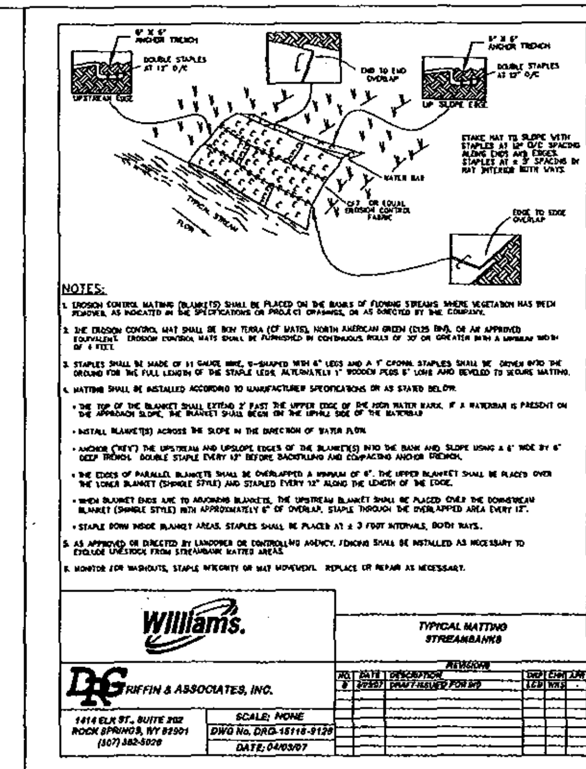

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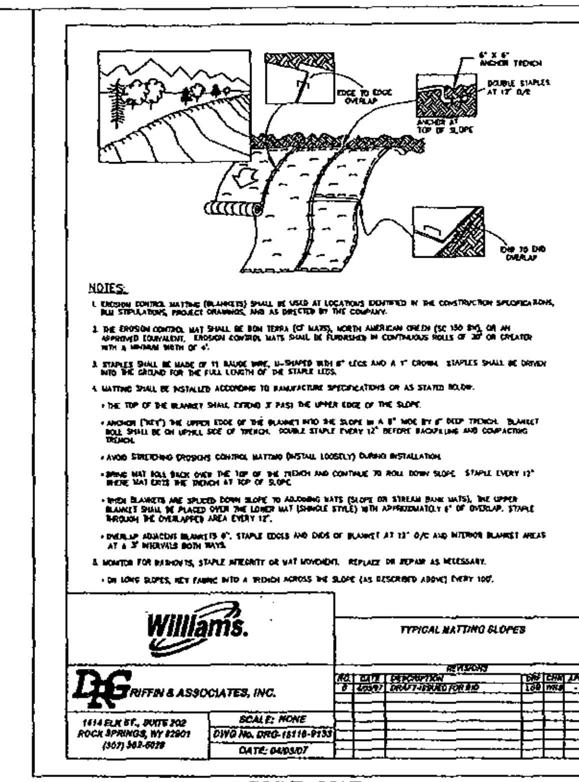

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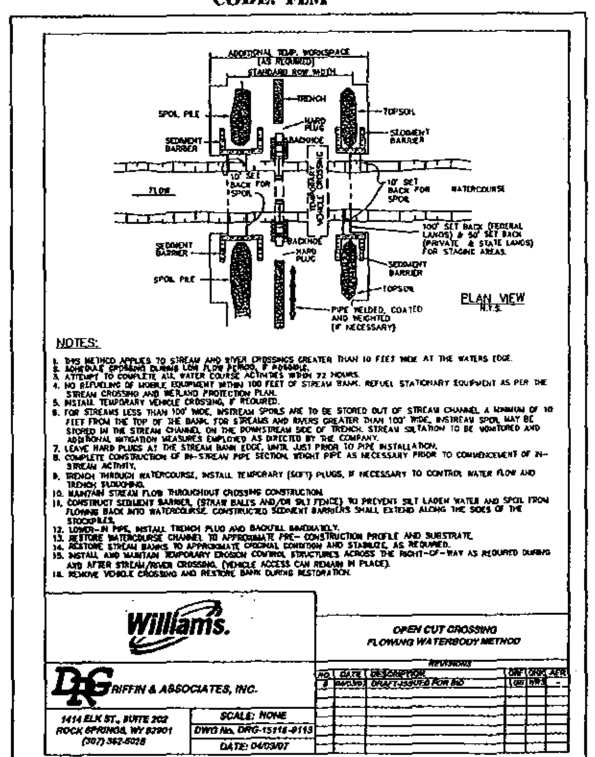

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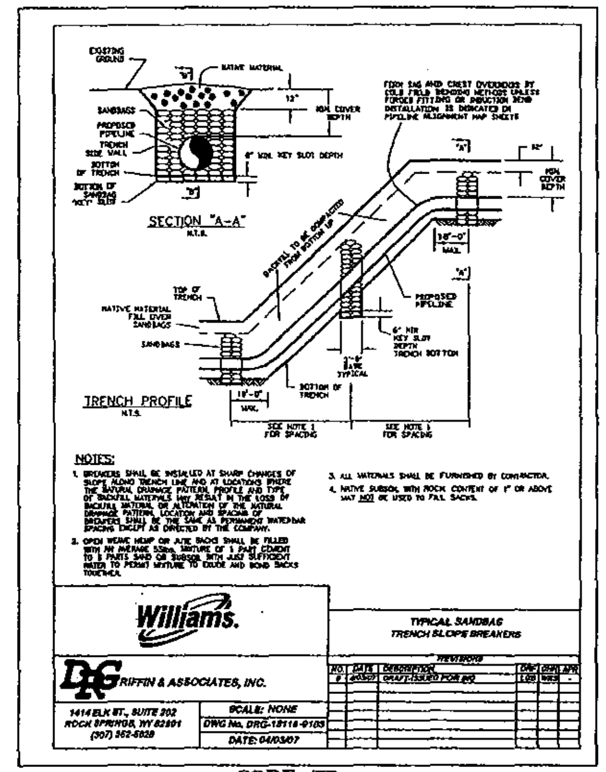

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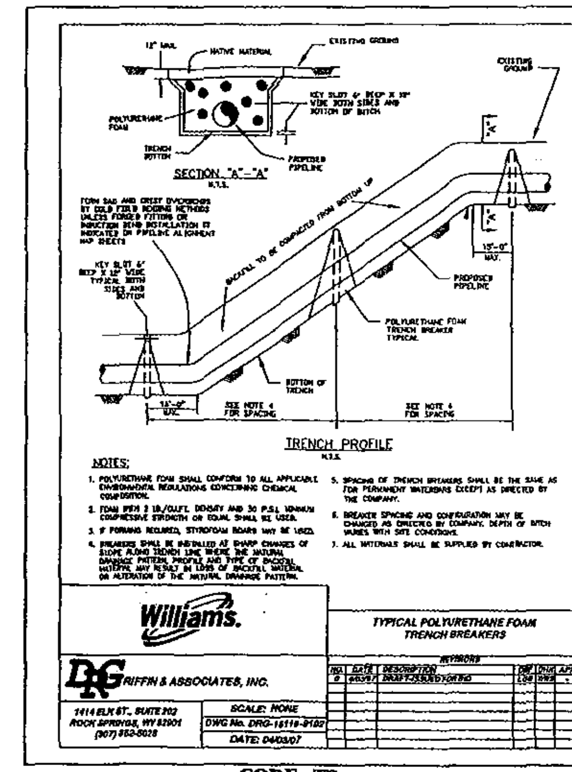


CODE: TB

NOTES

REVISIONS

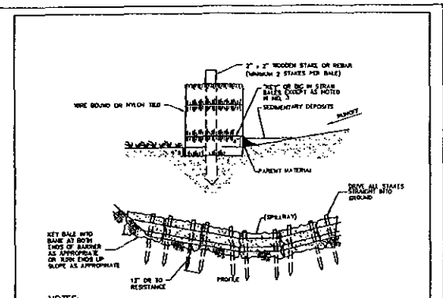
NO.	DATE	DESCRIPTION	BY	CHK	APPR
0	04/04/07	DRAFT-ISSUED FOR BID VERSION CLIENT REVIEW, COMMENT, APPROVAL	SLS	WRS	
1	05/17/07	AMEND TABLE ADD EROSION/SEDIMENT LOG CODE "EL"	SLS	WRS	

GRIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028

Williams

CONSTRUCTION & ENVIRONMENTAL DETAILS
6"/8" PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
WILLIAMS FIELD SERVICES, LLC
PARACHUTE, COLORADO

SCALE: AS SHOWN
JOB No.: 15116
GARFIELD COUNTY, COLORADO
DRG-DTL01-15116
1 OF 6



NOTES:

1. STRAW BALE OR SILT FENCE SEDIMENT BARRIERS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS
   - THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND FLOWING STREAMS.
   - THE DOWNSLOPE FRONT-OF-FIRST EDGE WHERE ANY OF THE ABOVE MENTIONED LOCATIONS ARE ADJACENT TO WITHIN 50' THAT AS DIRECTED BY THE COMPANY.
   - BETWEEN SPOIL STOCKPILES AND STREAMS OR WETLANDS AS NEEDED.
   - AS DIRECTED BY THE COMPANY.
2. STRAW BALE SEDIMENT BARRIERS SHALL CONSIST OF A ROW OF STRAW BALES, PLACED ON THE FRONT-CUT EDGE (SIDE NOT IN CONTACT WITH THE GROUND), BALES SHALL BE TIGHTLY ABUTTED TO ONE ANOTHER, THE BARRIER SHALL BE ONE BALE HIGH. DOUBLE HORIZONTAL WIDE FIRST STRAW SHALL BE USED.
3. ENTRENCH (MIN.) STRAW BALES INTO THE GROUND TO A DEPTH OF 4", EXCEPT IN SATURATED OR EXTREMELY ROCKY SOILS. PLACE PARENT MATERIAL ON UPSTREAM SIDE OF STRAW BALES TO PREVENT UNDERMINING.
4. WALK ON STRAW BALES TO INSURE ADEQUATE BALE TO SOIL CONTACT.
5. ANCHOR STRAW BALES SECURELY IN PLACE WITH TWO WOODEN OR STEEL REBAR STAKES DRIVEN THROUGH THE TOPS OF THE BALES. THE LENGTH OF THE STAKE SHALL ENTER THE GROUND A DISTANCE OF 12" UNLESS ROCK OR AN IMPENETRABLE LAYER IS ENCOUNTERED ABOVE 12".

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DFG RIFFIN & ASSOCIATES, INC.

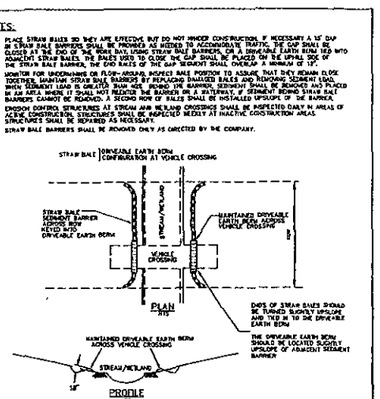
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S106
DATE: 04/03/07

TYPICAL STRAW BALE SEDIMENT BARRIER
(SHEET 1 OF 2)

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
0	4/05/07	DRAFT-ISSUED FOR BID	LDB	WRS	-

CODE: STW



NOTES:

1. PLACE STRAW BALES SO THEY ARE EFFECTIVE, BUT DO NOT HINDER CONSTRUCTION. IF NECESSARY A 10' GAP IN THE BALE BARRIERS SHALL BE PROVIDED TO ACCOMMODATE TRAFFIC. THE GAP SHALL BE CLOSED AT THE END OF THE WORK DAY USING STRAW BALE BARRIERS OR A DRIVEABLE EARTH BERM TIED INTO ADJACENT STRAW BALES. THE BALES USED TO CLOSE THE GAP SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE BARRIER, THE BALES AT THE GAP SEGMENT SHALL OVERLAP A MINIMUM OF 12".
2. MONITOR FOR UNDERMINING OR FLOW-AROUND. INSPECT BALE POSITION TO ASSURE THAT STREAM FLOW DOESN'T ERODE BENEATH OR AROUND BALES. REPAIR OR REINFORCE BARRIER AS NECESSARY FOLLOWING SIGNIFICANT RAIN EVENTS. SEDIMENT DEPOSITS SHALL BE REMOVED AND PLACED IN AN AREA WHERE IT SHALL NOT PRODUCE THE BARRIER OR A GATEWAY. IF SEDIMENT BEHIND STRAW BALE BARRIERS CANNOT BE REMOVED, A SECOND ROW OF BALES SHALL BE INSTALLED UPSLOPE OF THE BARRIER.
3. EROSION CONTROL STRUCTURES AT STREAM AND WETLAND CROSSINGS SHALL BE INSPECTED DAILY IN AREAS OF ACTIVE CONSTRUCTION. STRUCTURES SHALL BE INSPECTED WEEKLY AT INACTIVE CONSTRUCTION AREAS. STRUCTURES SHALL BE REPAIRED AS NECESSARY.
4. STRAW BALE BARRIERS SHALL BE REMOVED ONLY AS DIRECTED BY THE COMPANY.

DRIVEABLE BERM NOTES:

1. A MAINTAINED DRIVEABLE EARTH BERM MAY BE INSTALLED ACROSS VEHICLE CROSSINGS IN LIEU OF STRAW BALES.
2. BERM MUST BE TIED INTO STRAW BALES
3. BERM MUST BE MAINTAINED TO ENSURE SEDIMENT TRAPPING CAPACITY.

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ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S107
DATE: 04/03/07

TYPICAL STRAW BALE SEDIMENT BARRIER
(SHEET 2 OF 2)

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
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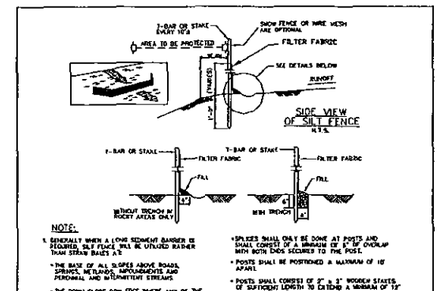
CODE: STW



NOTE:

1. GENERALLY WHEN A LONE SEDIMENT BARRIER IS REQUIRED, SILT FENCE WILL BE UTILIZED RATHER THAN STRAW BALES AS:
   - THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND PERENNIAL AND INTERMITTENT STREAMS.
   - THE DOWN SLOPE ROW EDGE WHERE ANY OF THE ABOVE MENTIONED LOCATIONS ARE IMMEDIATELY ADJACENT TO 30' ROW AS REQUIRED BY THE COMPANY.
   - BETWEEN SPOIL STOCKPILES AND FLOWING STREAMS OR WETLANDS WHERE BUFFER ZONE REQUIREMENTS CANNOT BE MET.
   - AS DIRECTED BY THE COMPANY.
2. THE SILT FENCE SHALL BE CONSTRUCTED AS FOLLOWS:
   - FABRIC USED FOR THE SILT FENCE SHALL BE A "STANDARD STRENGTH" WOVEN MIL SUCH AS MIRAFI 100X OR AN APPROVED EQUIVALENT.
   - THE FABRIC SHALL BE CUT FROM A CONTINUOUS FABRIC ROLL.
   - THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36".
   - SPLICES SHALL ONLY BE DONE AT POSTS AND SHALL CONSIST OF A MINIMUM OF 6" OF OVERLAP WITH BOTH ENDS SECURED TO THE POST.
   - POSTS SHALL BE POSITIONED A MAXIMUM OF 10' APART.
   - POSTS SHALL CONSIST OF 2" x 2" WOODEN STAKES OF SUFFICIENT LENGTH TO EXTEND A MINIMUM OF 12" INTO THE GROUND.
   - FABRIC SHALL BE STAPLED OR WIRED TO POSTS, A MINIMUM OF EVERY 8".
3. THE SILT FENCE SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER OR AS FOLLOWS:
   - A TRENCH, 4" WIDE AND 8" DEEP, SHALL BE EXCAVATED ALONG THE CONTOUR. THE POST SHALL BE DRIVEN INTO THE BOTTOM OF THE TRENCH ON THE DOWNSTREAM SIDE OF THE FILTER FABRIC. THE UPHILL SHALL BE BACKFILLED AND COMPACTED, ENSURING 6" OF FENCE IS BURIED WITHIN THE TRENCH.
   - IN AREA WHERE THE TERRAIN IS TOO ROCKY FOR TRENCHING, A 4" GROUND FLAP WITH ROCK FILL TO HOLD IT IN PLACE SHALL BE USED.

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DFG RIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S108
DATE: 04/03/07

TYPICAL SILT FENCE SEDIMENT BARRIER
(SHEET 1 OF 1)

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
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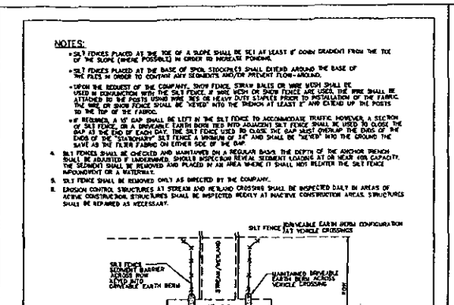
CODE: SF



NOTES:

- SILT FENCES PLACED AT THE TOE OF A SLOPE SHALL BE SET AT LEAST 6' DOWN GRADIENT FROM THE TOE OF THE SLOPE (WHERE POSSIBLE) IN ORDER TO MAXIMIZE PONDING.
- SILT FENCES PLACED AT THE BASE OF SPOIL STOCKPILES SHALL EXTEND AROUND THE BASE OF THE PILES IN ORDER TO CONTAIN ANY SEDIMENTS AND/OR PREVENT FLOW-AROUND.
- UPON THE REQUEST OF THE COMPANY, SNOW FENCE, STRAW BALES OR WIRE MESH SHALL BE UTILIZED IN CONJUNCTION WITH THE SILT FENCE. IF WIRE MESH OR SNOW FENCE ARE USED, THE WIRE SHALL BE STRETCHED TO THE POSTS USING WIRE TIES OR HEAVY DUTY STAPLES PRIOR TO INSTALLATION OF THE FABRIC. THE WIRE OR SNOW FENCE SHALL BE VERIFIED INTO THE TRENCH AT LEAST 8" AND EXTEND UP THE POSTS TO THE TOP OF FABRIC.
- IF REQUIRED, A 10' GAP SHALL BE LEFT IN THE SILT FENCE TO ACCOMMODATE TRAFFIC. HOWEVER, A SECTION OF SILT FENCE, OR A DRIVEABLE EARTH BERM TIED INTO ADJACENT SILT FENCE SHALL BE USED TO CLOSE THE GAP AT THE END OF EACH DAY. THE SILT FENCE USED TO CLOSE THE GAP MUST OVERLAP THE ENDS OF THE ENDS OF THE "STATIONARY" SILT FENCE A MINIMUM OF 12" AND SHALL BE "KEYED" INTO THE GROUND THE SAME AS THE FILTER FABRIC ON EITHER SIDE OF THE GAP.
4. SILT FENCES SHALL BE CHECKED AND MAINTAINED ON A REGULAR BASIS. THE DEPTH OF THE ANCHOR TRENCH SHALL BE ADJUSTED IF UNDERMINED, SHOULD SEDIMENT REACH APPROX. 1/2 THE FENCE HEIGHT, SEDIMENT LOADING AT OR NEAR 100% CAPACITY. THE SEDIMENT SHALL BE REMOVED AND PLACED IN AN AREA WHERE IT SHALL NOT RELEASE THE SILT FENCE IMPOUNDMENT OR A WATERWAY.
5. SILT FENCE SHALL BE REMOVED ONLY AS DIRECTED BY THE COMPANY.
6. EROSION CONTROL STRUCTURES AT STREAM AND WETLAND CROSSING SHALL BE INSPECTED DAILY IN AREAS OF ACTIVE CONSTRUCTION. STRUCTURES SHALL BE INSPECTED WEEKLY AT INACTIVE CONSTRUCTION AREAS. STRUCTURES SHALL BE REPAIRED AS NECESSARY.

DRIVEABLE BERM NOTES:

1. A MAINTAINED DRIVEABLE EARTH BERM MAY BE INSTALLED ACROSS VEHICLE CROSSINGS IN LIEU OF SILT FENCE.
2. BERM MUST BE TIED INTO SILT FENCE.
3. BERM MUST BE MAINTAINED TO ENSURE SEDIMENT TRAPPING CAPACITY.

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DFG RIFFIN & ASSOCIATES, INC.

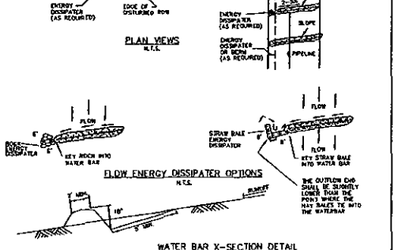
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S109
DATE: 04/03/07

TYPICAL SILT FENCE SEDIMENT BARRIER
(SHEET 2 OF 2)

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
0	4/05/07	DRAFT-ISSUED FOR BID	LDB	WRS	-

CODE: SF



NOTES:

1. WATERBARS SHALL BE INSTALLED ON THE RIGHTS-OF-WAY AND DRIVE ROADS AT LOCATIONS AND SPACINGS STATED ON THE BLM B.L.M. STIPULATIONS, CONTRACT SPECIFICATIONS, THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY COMPANY.
2. WATERBARS SHALL BE CONSTRUCTED AS SHOWN ON DETAILS PATTERNS TO DIRECTED BY THE COMPANY TO DIRECT THE WATER FROM THE SLOPE.
3. WATERBARS SHALL BE CONSTRUCTED AT A 2-3% GRADIENT ACROSS THE SLOPE.
4. THE WATERBAR SHALL BE 18" DEEP (AS MEASURED FROM THE BERM TO TOP OF WATERBAR), THE BERM WILL BE A MINIMUM OF 3' WIDE ACROSS THE WIDTH OF THE ROW.
5. WHEN SO ORDERED BY AGENCY OR LANDOWNER, WATERBARS SHALL EXTEND BEYOND THE EDGE OF THE ROW AS DIRECTED BY THE COMPANY TO DIRECT WATER AWAY FROM THE DISTURBED ROW.

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DFG RIFFIN & ASSOCIATES, INC.

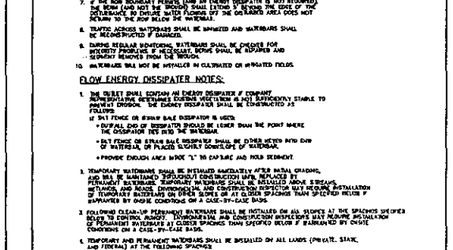
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S110
DATE: 04/03/07

TYPICAL WATERBAR (SLOPE BREAKER)
(SHEET 1 OF 2)

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
0	4/05/07	DRAFT-ISSUED FOR BID	LDB	WRS	-

CODE: WB


NOTES:
6. THE OUTLET OF THE WATERBAR MUST BREAK THROUGH ANY BERMS OR CUT BANKS TO FREELY DISCHARGE ALL RUNOFF OFF THE DISTURBED ROW.
7. IF THE ROW BOUNDARY PROHIBITS FLOW OR ENERGY DISSIPATER IS NOT ATTAINED, A BERM SHALL BE CONSTRUCTED. THE BERM SHALL EXTEND BEYOND THE EDGE OF THE DISTURBANCE TO ENSURE WATER FLOWING OFF THE DISTURBED AREA DOES NOT RETURN TO THE ROW BELOW THE WATERBAR.
8. TRAFFIC ACROSS WATERBARS SHALL BE MINIMIZED AND WATERBARS SHALL BE RECONSTRUCTED IF DAMAGED.
9. DURING REPAIR OR REMOVAL WATERBARS SHALL BE CHECKED FOR ERODIBILITY PROBLEMS IF NECESSARY, BERMS SHALL BE REPAIRED AND SEDIMENT REMOVED FROM THE TRENCH.
10. WATERBARS WILL NOT BE INSTALLED IN CULTIVATED OR IRRIGATED FIELDS.
FLOW ENERGY DISSIPATER NOTES:
1. THE OUTLET SHALL CONTAIN AN ENERGY DISSIPATER IF CONSTANT MOISTURE, INTERMITTENT FLOWING WATERS AND WHERE IT IS NOT INHERENTLY STABLE TO PREVENT EROSION. THE ENERGY DISSIPATER SHALL BE CONSTRUCTED AS FOLLOWS:
   - SILT FENCE OR STRAW BALE DISSIPATER IS USED:
     - OUTFALL END OF DISSIPATOR SHOULD BE LOWER THAN THE POINT WHERE THE DISSIPATOR TIES INTO THE WATERBAR.
     - SILT FENCE OR STRAW BALE DISSIPATER SHALL BE FORMED INTO EVEN OR WATERBAR, OR PLACED SLIGHTLY DOWNSLOPE OF WATERBAR.
     - PROVIDE ENOUGH AREA BEHIND "U" TO CAPTURE AND HOLD SEDIMENT.
2. TEMPORARY WATERBARS SHALL BE INSTALLED IMMEDIATELY AFTER INITIAL GRADING, AND MUST BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL RECLAIMED. PERMANENT WATERBARS SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER FINAL GRADING. WHERE WATERBARS ARE INSTALLED ACROSS DRAINAGES IN USE CONSTRUCTION MAY REQUIRE INSTALLATION OF TEMPORARY WATERBARS ON OTHER SLOPES OR AT CLOSER SPACINGS THAN SPECIFIED BELOW IF RUNWATER BY ONSITE CONDITIONS ON A CASE-BY-CASE BASIS.
3. FOLLOWING CLEAN-UP, PERMANENT WATERBARS SHALL BE INSTALLED ON ALL SLOPES AT THE SPACINGS SPECIFIED BELOW TO CONTROL RUNOFF TO REVEGETATED AND CONSTRUCTION ACTIVITIES MAY REQUIRE INSTALLATION OF PERMANENT WATERBARS AT CLOSER SPACINGS THAN SPECIFIED BELOW IF WARRANTED BY ONSITE CONDITIONS ON A CASE-BY-CASE BASIS.
4. TEMPORARY AND PERMANENT WATERBARS SHALL BE INSTALLED ON ALL LANDS (PRIVATE, STATE, AND FEDERAL) AT THE FOLLOWING SPACINGS:

SLOPE (%)	SPACING (FT)
1-15	200'
6-15	300'
16-20	200'
>20%	100'

PRIVATE & STATE LANDS

SLOPE (%)	SPACING (FT)
0-3	400'
3-5	300'
5-15	200'
16-20	100'
20+	50'

FEDERAL LANDS
5. SPACING AND STAKE WATERBAR REQUIREMENTS EXISTS IN THE B.L.M. R.O.W. GRANT STIPULATIONS AND LANDOWNER AGREEMENTS, IF ANY, SHALL SUPERCEDE THE ABOVE.

Williams.

DFG RIFFIN & ASSOCIATES, INC.

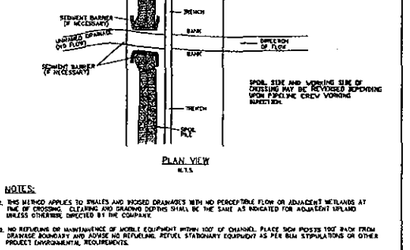
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S111
DATE: 04/03/07

TYPICAL WATERBAR (SLOPE BREAKER)
(SHEET 2 OF 2)

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
0	4/05/07	DRAFT-ISSUED FOR BID	LDB	WRS	-

CODE: WB



NOTES:

1. THIS METHOD APPLIES TO SMALLER AND MISSED DRAINAGES WITH NO PERCEPTIBLE FLOW OR ADJACENT WETLANDS AT TIME OF CROSSING. CLEARING AND GRADING DEPTHS SHALL BE THE SAME AS INDICATED FOR ADJACENT UPLAND UNLESS OTHERWISE DIRECTED BY THE COMPANY.
2. NO REFUELING OR MAINTENANCE OF MOBILE EQUIPMENT WITHIN 100' OF CHANNEL. PLACE NON MOVING 100' AWAY FROM DRAINAGE BOUNDARY AND ADHERE NO REFUELING, REFUEL STATIONARY EQUIPMENT AS PER BLM STIPULATIONS OR OTHER PROJECT ENVIRONMENTAL REQUIREMENTS.
3. SPOIL SHALL NOT BE STOCKPILED ACROSS THE STREAM CHANNEL.
4. THE CONTRACTOR SHALL PRESERVE AS MUCH VEGETATION AS POSSIBLE ALONG STREAMBANKS WHILE ALLOWING FOR SAFE EQUIPMENT OPERATIONS.
5. CONTRACTOR SHALL HAVE SILT FENCE AND STRAW BALE SEDIMENT BARRIER MATERIALS READILY AVAILABLE FOR INSTALLATION BETWEEN SPOIL STOCKPILES AND THE STREAM CHANNEL IN THE EVENT RAINFALL OR RUNOFF EVENTS MAY CAUSE SEDIMENT FLOW INTO THE CHANNEL. SEDIMENT BARRIERS SHALL BE INSTALLED AS DIRECTED BY THE COMPANY.
6. RESTORE WATERCOURSE CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND CONDITION WITHIN 72 HOURS OF CONSTRUCTION START.
7. RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED, INSTALL PERMANENT EROSION CONTROLS, AS REQUIRED.

Williams.

DFG RIFFIN & ASSOCIATES, INC.

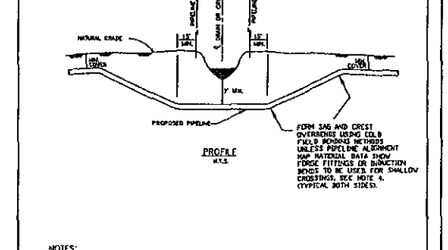
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S135
DATE: 10/19/06

TYPICAL OPEN-CUT CROSSING
NON-FLOWING STREAM METHOD

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
1	10/19/06	ADD APPROVED DEPARTMENT	LDB	-	-
0	4/05/07	DRAFT-ISSUED FOR BID	LDB	WRS	-

CODE: SCD



NOTES:

1. PIPE TO BE SUPPORTED FOR A MAXIMUM DISTANCE OF 15 FT. BEYOND TOP OF EACH BANK, MEASURED AT RIGHT ANGLES TO CREEK OR DRAIN.
2. TOP OF PIPE TO BE MAINTAINED 7 FT. BELOW WATERCOURSE BANK.
3. NORMAL FLOW OF DRAINAGE NOT TO BE OBSTRUCTED DURING PIPELINE CONSTRUCTION OPERATIONS.
4. AT WHERE CREEKS OR DRAINS NOT EXCEEDING A DEPTH OF 3 FT., CONTRACTOR MAY TIE BETWEEN BENDS AND LAY MINIMUM PIPE TO MEET THE REQUIRED BENDS.

Williams.

DFG RIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE
DWG No. DRG-15116-S136
DATE: 10/19/06

TYPICAL CROSSING OF CREEK OR DRAINAGE

REVISIONS					
NO.	DATE	DESCRIPTION	DRF	CHK	APP
1	10/19/06	ADD APPROVED DEPARTMENT	LDB	-	-
0	4/05/07	DRAFT-ISSUED FOR BID	LDB	WRS	-

CODE: OCS

NOTES

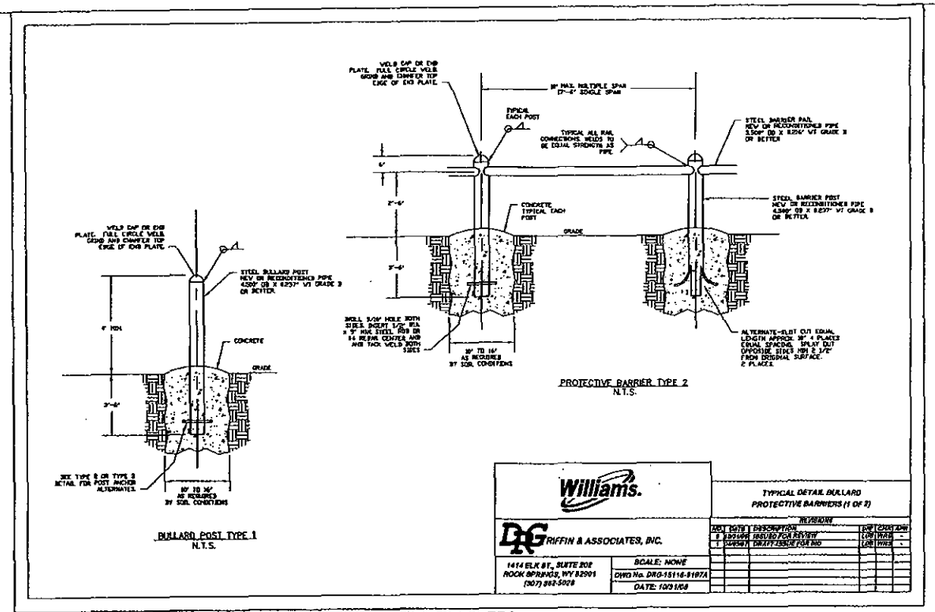
REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APPR
0	04/04/07	DRAFT-ISSUED FOR BID VERSION CLIENT REVIEW, COMMENT, APPROVAL	SLB	WRS	

DFG RIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028

Williams

CONSTRUCTION & ENVIRONMENTAL DETAILS
6"/8" PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
WILLIAMS FIELD SERVICES, LLC
PARACHUTE, COLORADO

SCALE: AS SHOWN
JOB No.: 15116
DRG-DTL02-15116
GARFIELD COUNTY, COLORADO
2 OF 6



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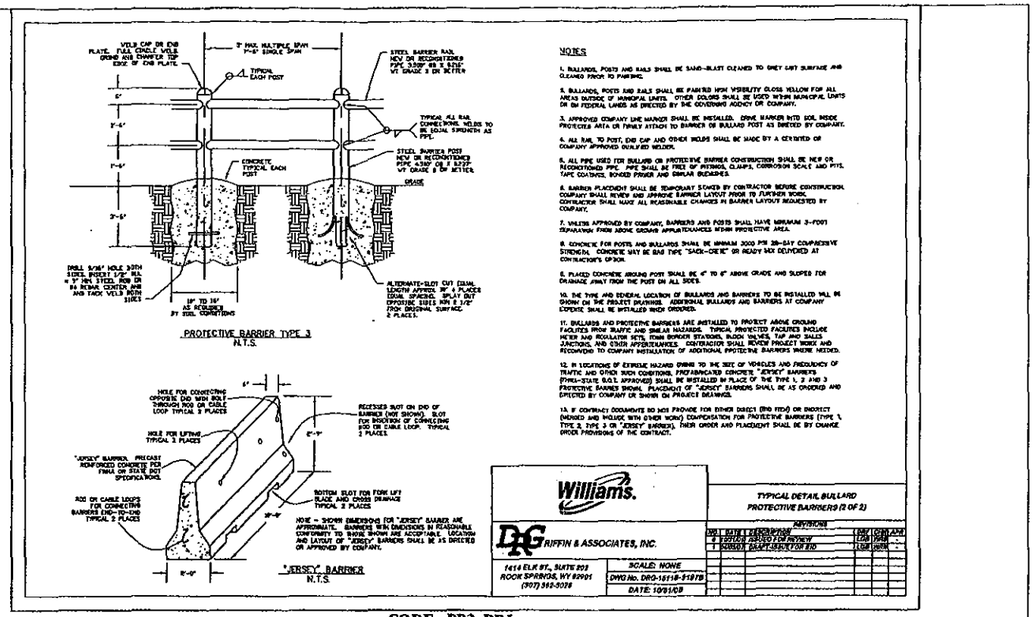

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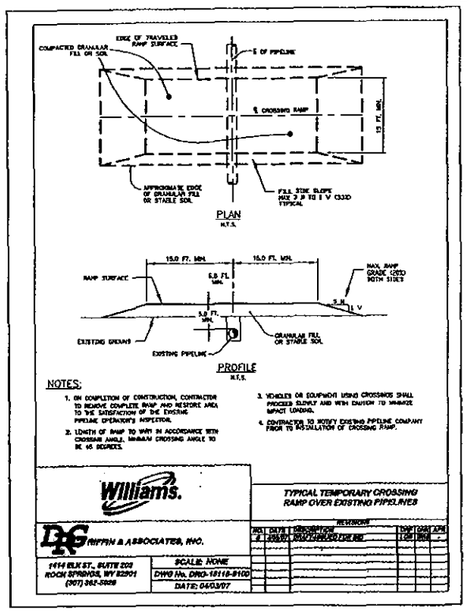
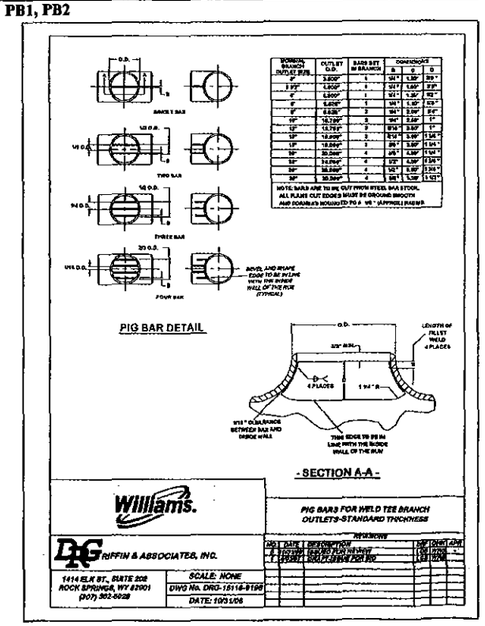
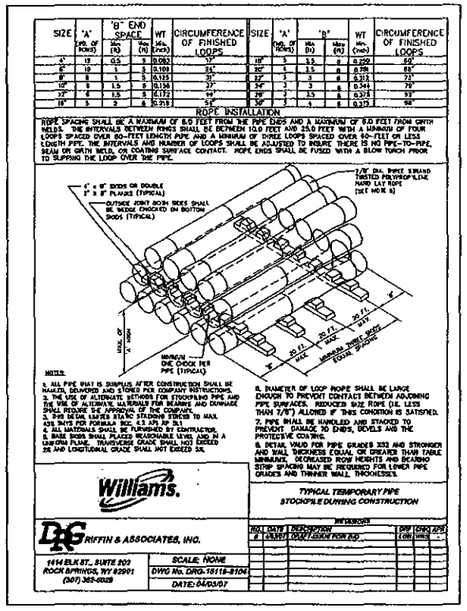
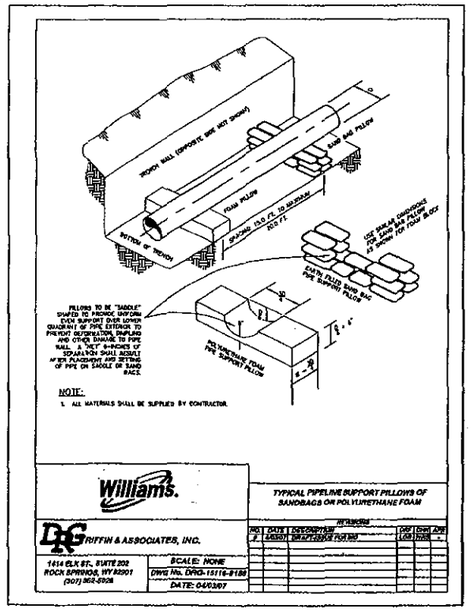








NOTES

REVISIONS

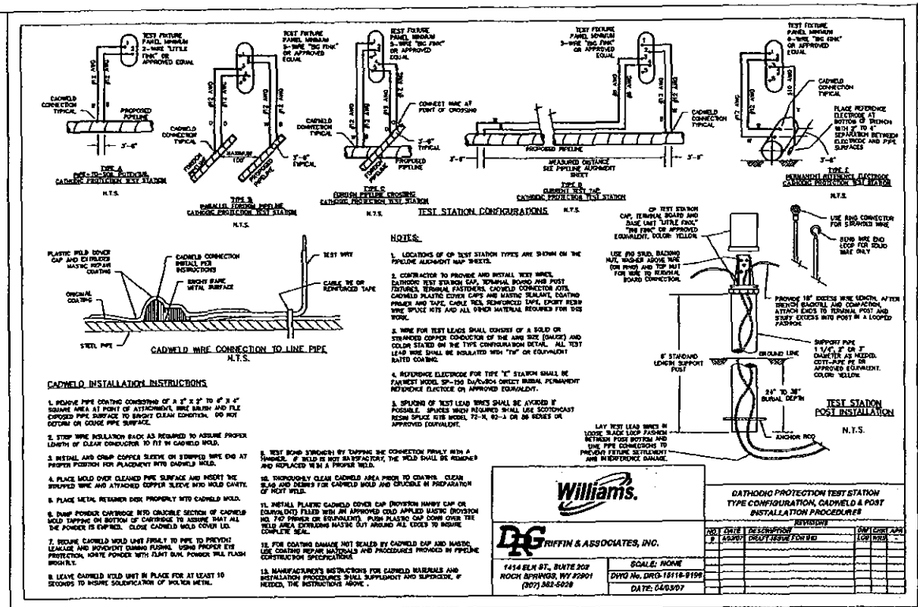
NO.	DATE	DESCRIPTION	BY	CHK	APPR
0	04/04/07	DRAFT-ISSUED FOR BID VERSION CLIENT REVIEW, COMMENT, APPROVAL	SLS	WRS	

DFG GRIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028

Williams

CONSTRUCTION & ENVIRONMENTAL DETAILS
6"/8" PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
WILLIAMS FIELD SERVICES, LLC
PARACHUTE, COLORADO

SCALE: AS SHOWN
JOB No.: 15116
DRG-DTL03-15116
GARFIELD COUNTY, COLORADO
3 OF 8



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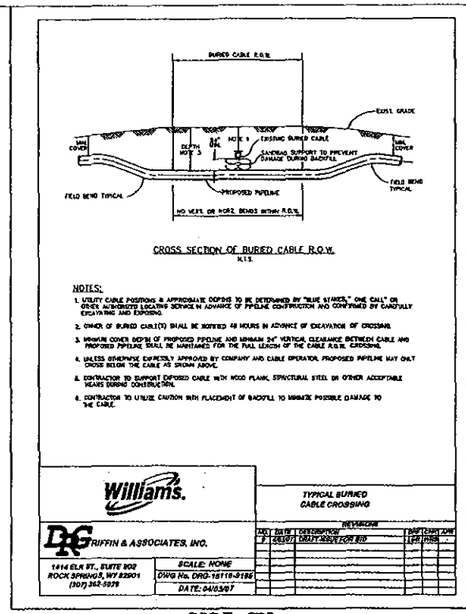

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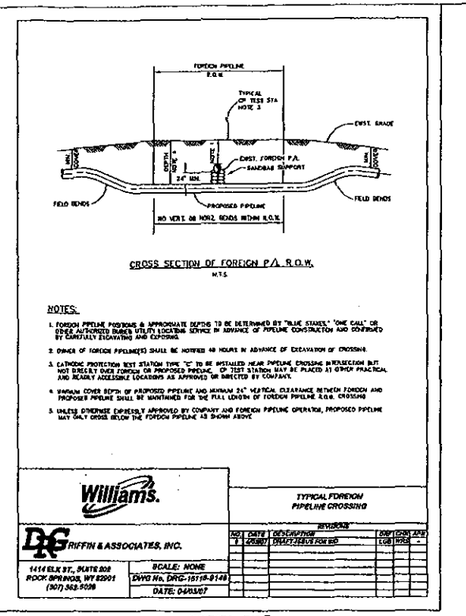

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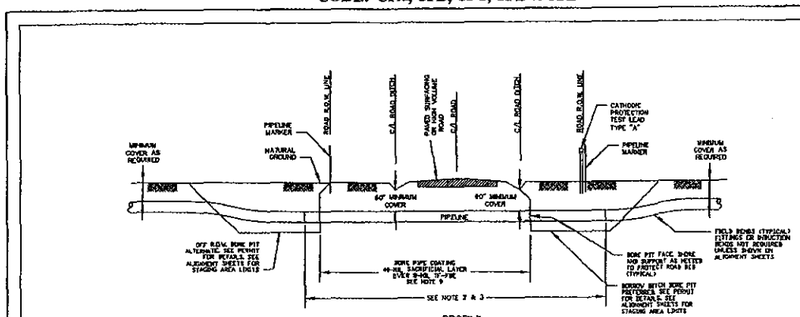

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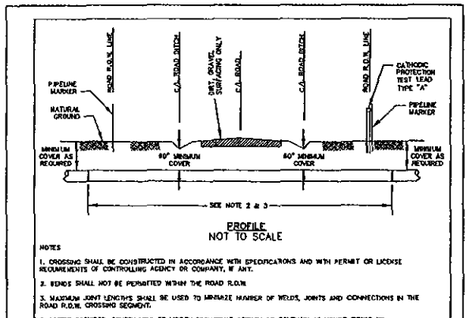

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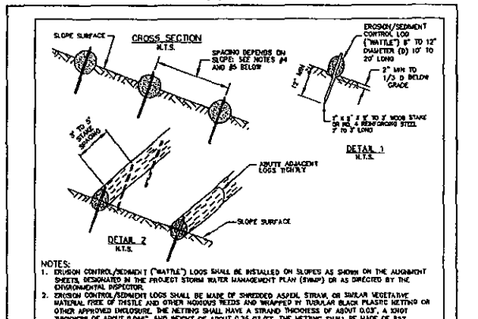

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NOTES	REVISIONS					
	NO.	DATE	DESCRIPTION	BY	CHK	APPR
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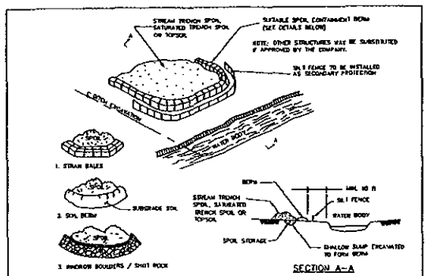
	1	05/17/07	ADD DRG-14284-9187 EROSION CONTROL/SEDIMENT "WATTLE" LOG DETAIL	SLS	WRS	

DRG GRIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202 ROCK SPRINGS, WY 82901 (307) 362-5028

Williams

CONSTRUCTION & ENVIRONMENTAL DETAILS
6"/8" PARACHUTE GREASEWOOD
EXPRESS LIQUIDS PIPELINE
WILLIAMS FIELD SERVICES, LLC
PARACHUTE, COLORADO

SCALE: AS SHOWN
JOB No: 15116
GARFIELD COUNTY, COLORADO
DRG-DTL04-15116
4 OF 5



NOTE:

1. CONTAINMENT BERMS ARE TO BE USED WHERE STREAM EXCAVATED SPOIL OR SATURATED TRENCH SPOIL OR TOPSOIL COULD ENTER A SURFACEWATER DIRECTLY OR INDIRECTLY.
2. MATERIAL USED FOR THE CONTAINMENT BERM SHOULD BE A MINIMUM OF 10 FT. FROM THE WATERS EDGE. IT SHOULD BE KEPT TO A HEIGHT WHICH REMAINS STABLE DURING THE CONSTRUCTION PERIOD.
3. THE SPOIL OR TOPSOIL PILE SHALL NOT OVERTOP THE CONTAINMENT BERM.
4. THE CONTAINMENT BERM SHOULD BE BREACHED AND THE SITE RESTORED TO THE ORIGINAL CONDITION UPON COMPLETION OF THE WATER CROSSING OR OTHER WORK.
5. WHERE POSSIBLE, RIPARIAN VEGETATION SHALL BE MAINTAINED.
6. STAGED MOVEMENT OF RIPARIAN SPOIL MAY BE REQUIRED IF QUANTITIES ARE EXCESSIVE.
7. CARE AND ATTENTION MUST BE TAKEN TO ENSURE SPOIL CONTAINMENT BERMS ARE MAINTAINED.
8. FULL CONSIDERATION FOR OVERALL SLOPE STABILITY IS REQUIRED WHEN SELECTING A SPOIL CONTAINMENT LOCATION.

Williams.

TYPICAL TEMPORARY BOX, CONTAINMENT BERM (SATURATED SOILS)

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-8126

DATE: 04/05/07

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APP
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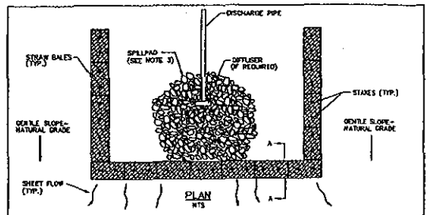

NOTES:

1. INSTALL A STRAW BALE DEWATERING STRUCTURE WHENEVER IT IS NECESSARY AND AS DIRECTED BY THE ENVIRONMENT INSPECTOR TO PREVENT THE FLOW OF HEAVILY SILT LADEN WATER INTO WATER BODIES OR WETLANDS.
2. DISCHARGE HOSE SHALL BE WELL ANCHORED AND THE TOPOGRAPHY OF THE SITE SHALL BE SUCH THAT WATER WILL FLOW INTO THE DEWATERING STRUCTURE AND WITH FLOW DOWN SLOPE FROM THE DISCHARGE SITE. THE AREA DOWN SLOPE FROM THE DISCHARGE SITE MUST BE REASONABLY FLAT OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.
3. DIRECT THE PUMPED WATER ONTO A STABLE SPILL PAD CONSTRUCTED OF STRAW BALES, ROCK FILL MULCHED TIMBERS, OR A NEWLY SCOTCHTILE STAKED TO THE GROUND SURFACE, SUCH AS MIRAFI 600X, TERRAFIX 600R, OR A COMPANY APPROVED EQUIVALENT, BEYOND THE SPILL PAD FORCE THE DISCHARGE WATER INTO SHEET FLOW USING STRAW BALES AND THE NATURAL TOPOGRAPHY.
4. DIFFUSER MAY INCLUDE A "T" PIPE, A SPLASH PUP OR A SPLASH PLATE, INSTALLED AT THE END OF THE DISCHARGE PIPE OR OTHER SIMILAR METHOD TO DIFFUSE OR BAFFLE THE DISCHARGED WATER'S ENERGY.
5. DISCHARGE WATER SHALL BE FILTERED WITH SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD USING A COMBINATION OF STRAW BALES AND THE NATURAL TOPOGRAPHY. DRIVE TWO STAKES INTO EACH BALE TO ANCHOR THEM IN PLACE.
6. MANUFACTURED FILTER BAGS ARE A SUITABLE ALTERNATIVE TO STRAW BALE STRUCTURES FOR TRENCH DEWATERING. FILTER BAGS SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER. DISPOSE OF FULL FILTER BAGS AT A COMPANY APPROVED OFF-SITE FACILITY.

Williams.

TYPICAL STRAW BALE DEWATERING STRUCTURE - SMALL VOLUME

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-8121

DATE: 04/05/07

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APP
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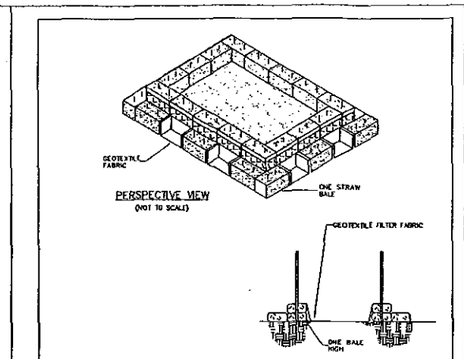

NOTES:

1. LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.
2. THE STRAW BALE CONFIGURATION AND DIMENSIONS OF THE STRUCTURE SHALL BE DETERMINED IN THE FIELD BASED UPON SITE CONDITIONS.
3. HEIGHT OF THE STRAW BALES SHALL NOT EXCEED TWO BALES. IF TWO BALES ARE INCORPORATED TO MEET THE DISCHARGE VOLUMES, A SECOND OUTSIDE ROW OF BALES SHALL BE USED TO REINFORCE THE PERIMETER.
4. APPLICABLE DETAILS AND NOTES NO. 1, 2, 3, 4 AND 5 SHOWN ON DRAWING NO. DRG-12093-9121, STRAW BALE DEWATERING STRUCTURE - SMALL VOLUME SHALL APPLY TO AND BE A PART OF THE REQUIREMENTS FOR STRAW BALE DEWATERING STRUCTURES - LARGE VOLUME.

Williams.

TYPICAL STRAW BALE DEWATERING STRUCTURE - LARGE VOLUME

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-8122

DATE: 04/05/07

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APP
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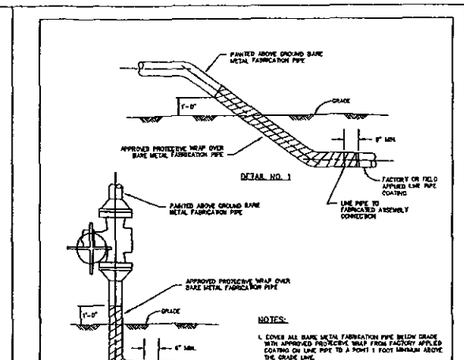


NOTES:

1. COVER ALL BARE METAL FABRICATION PIPE BELOW GRADE WITH APPROVED PROTECTIVE WRAP FROM FACTORY APPLIED COATING ON LINE PIPE TO A POINT 1 FOOT MINIMUM ABOVE THE GRADE LINE.
2. ALL COATING TO BE APPLIED AS PER MANUFACTURER'S RECOMMENDATION AND PROJECT SPECIFICATIONS.
3. ABOVE GROUND PIPING TO BE PAINTED PER PROJECT SPECIFICATIONS.

Williams.

TYPICAL PROTECTIVE COATING DETAIL

DG GRIFFIN & ASSOCIATES, INC.

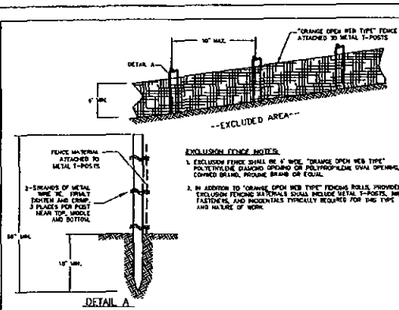
1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-8107

DATE: 04/05/07

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APP
0	4/05/07	DRAFT-ISSUED FOR BID		LDB	DWB



EXCLUSION FENCE NOTES:

1. EXCLUSION FENCE SHALL BE 6' WIDE "ORANGE OPEN WEB TYPE" POLYETHYLENE STANDARD GROUND OR POLYPROPYLENE OVAL OPENING, CONNED BRAND, PROJNE BRAND OR EQUAL.
2. IN ADDITION TO "ORANGE OPEN WEB TYPE" FENCING ROLLS, PROVIDED EXCLUSION FENCING MATERIALS SHALL INCLUDE METAL T-POSTS, WIRE, FASTENERS, AND INCIDENTALS TYPICALLY REQUIRED FOR THIS TYPE AND NATURE OF WORK.

EXCLUSION LATH NOTES:

1. THE CONTRACTOR SHALL INSTALL EXCLUSION LATH IN LOCATIONS DESIGNATED ON THE PIPELINE ALIGNMENT MAPS AND AS DIRECTED BY COMPANY TO PROTECT SENSITIVE RESOURCES FROM DAMAGE DURING CONSTRUCTION.
2. DEPENDENT ON THE LOCATION OF THE SENSITIVE RESOURCE, LATH SHALL EITHER BE INSTALLED ALONG ONE OR BOTH SIDES OF THE APPROVED CONSTRUCTION RIGHT-OF-WAY, PARALLEL TO THE PIPELINE CENTERLINE.
3. LATH SHALL BE MARKED WITH A DISTINCTIVELY COLORED AND SHAPED SURVEY TAPE APPROVED BY COMPANY TO DESIGNATE AN EXCLUSION AREA. NO VEHICLES, EQUIPMENT, CONSTRUCTION WORK OR MATERIALS INCLUDING SPOIL, BURROW, AND REFUSE ARE ALLOWED BEYOND THE LATH FOR ANY REASON.
4. LATH SHALL BE PLACED AT ALL CORNERS WHERE RIGHT-OF-WAY WIDTH CHANGES OCCUR AND AT 100-FOOT INTERVALS IN CENTER OF THE RIGHT-OF-WAYS, WHICHEVER IS LESS.
5. LATH INSTALLED AT THE EDGE OF THE RIGHT-OF-WAY FOR MARKING PURPOSES CAN BE MARKED WITH EXCLUSION TAPE AND VISTA AS PART OF THE EXCLUSION AREA DESCRIBED ABOVE WITH LATH CHANGES.
6. CONTRACTOR SHALL PROVIDE LATH AND FLAGGING FOR EXCLUSION AREA MARKING.

Williams.

TYPICAL EXCLUSION FENCE AND LATH

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG- 15116-8153

DATE: 04/05/07

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APP
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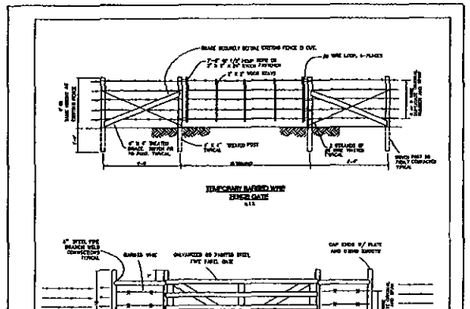
CODE: EXF



NOTES:

1. CONTRACT DRAWING FENCE MATERIAL TO MEET POST'S
2. USE 6'-0" SPACINGS TO 7" POSTS

Williams.

TYPICAL TEMPORARY AND PERMANENT GATE DETAIL

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-9142

DATE: 04/05/07

REVISIONS					
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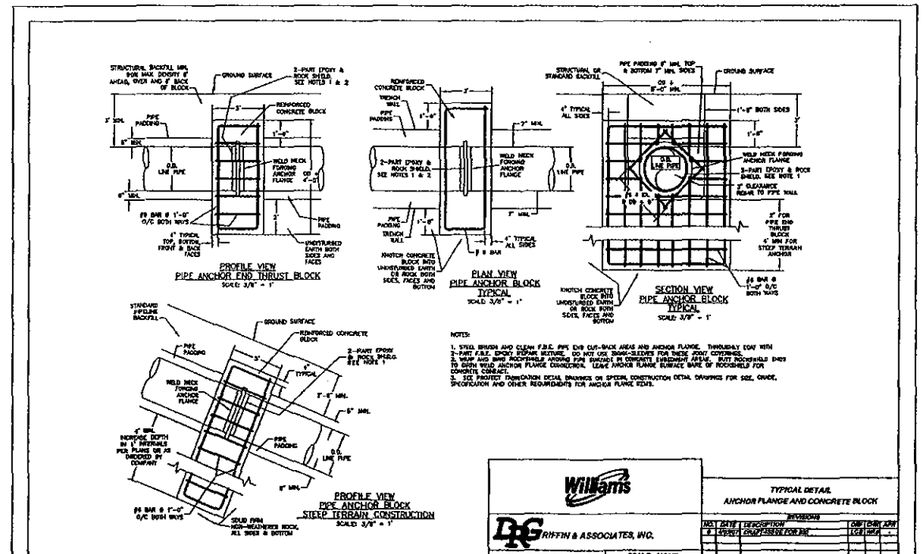

NOTES:

1. STEEL BRUSH AND CLEAN P.B.C. PIPE OVER CUT-BACK AREAS AND ANCHOR FLANGE. THOROUGHLY COAT WITH 2-PART E.B.E. EPOXY PRIMER MATERIALS. DO NOT USE PRIMER-SEALERS FOR THESE ITEMS UNDERSEAL.
2. WELD ANY BEND MODIFICATIONS AMONG PIPE FORGING IN CONCRETE EMBEDMENT AREAS. BUTT MACHINABLE ENDS TO SWIVEL WELD ANCHOR FLANGE CONNECTION. LEAVE SMOKE FLANGE SURFACE WAVE OF ROUGHNESS FOR CONCRETE CONTACT.
3. SEE PROTECT TRANSITION DETAIL DRAWINGS ON SPECIAL CONSTRUCTION DETAIL DRAWINGS FOR SIZE, GRADE, SPECIFICATION AND OTHER REQUIREMENTS FOR ANCHOR FLANGE RODS.

Williams.

TYPICAL DETAIL ANCHOR FLANGE AND CONCRETE BLOCK

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-9203

DATE: 04/05/07

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APP
0	4/05/07	DRAFT-ISSUED FOR BID		LDB	DWB

NOTES

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHK	APP
0	04/04/07	DRAFT-ISSUED FOR BID VERSION CLIENT REVIEW, COMMENT, APPROVAL	SLS	WRS	

DG GRIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901 (307) 362-5028

Williams

CONSTRUCTION & ENVIRONMENTAL DETAILS
6"/8" PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
WILLIAMS FIELD SERVICES, LLC
PARACHUTE, COLORADO

SCALE: AS SHOWN

JOB No.: 15116

GARFIELD COUNTY, COLORADO

DRG-DTL05-15116

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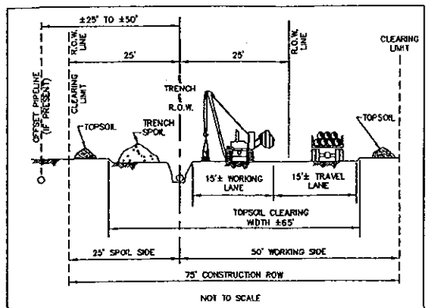


NOT TO SCALE

NOTES:

1. SALVAGE TOPSOIL FULL ROW WIDTH AT LOCATIONS AND DEPTHS IDENTIFIED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE COMPANY.
2. TOPSOIL SHALL BE STOCKPILED ON BOTH SIDES OF THE ROW (AS SHOWN), ON ONE SIDE OR IN ANY CONFIGURATION APPROVED BY THE ENVIRONMENTAL INSPECTOR. KEEP TOPSOIL PILE CLEAN OF ALL CONSTRUCTION DEBRIS. MAINTAIN SEPARATION BETWEEN TOPSOIL AND SUBSOIL SPOIL PILES.
3. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL INTO CREEKS OR WETLAND. DO NOT USE TOPSOIL FOR PADDING.
4. STRIP AND STOCKPILE TOPSOIL FROM FULL ROW WHERE GRADING IS REQUIRED (i.e. FOR A SIDE-HILL CUT, etc.,) TO PRODUCE A STABLE WORK AREA.

Williams.

TYPICAL R.O.W. SECTION WITH FULL WIDTH TOPSOIL SALVAGE

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

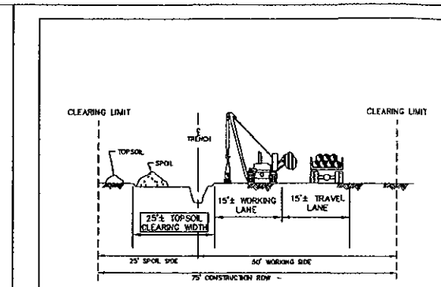
DWG No. DRG-15116-9125

DATE: 10/17/06

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	04/06/07	DRAFT-ISSUED FOR BID	GLS	WRS	-

CODE: FWT



- NOT TO SCALE -

NOTES:

1. SALVAGE TOPSOIL OVER TRENCH AND UNDER THE SPOIL PILE AT LOCATION AND DEPTHS IDENTIFIED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE COMPANY.
2. STOCKPILE TOPSOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE COMPANY. KEEP TOPSOIL CLEAN OF ALL CONSTRUCTION DEBRIS. MAINTAIN A SEPARATION BETWEEN TOPSOIL AND SUBSOIL SPOIL PILES.
3. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING.
4. ALL PORTIONS OF THE ROW TO BE GRADED MUST BE STRIPPED OF TOPSOIL.

Williams.

TYPICAL R.O.W. SECTION TRENCH & SPOIL AREA TOPSOIL SALVAGE

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-9124

DATE: 10/17/06

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
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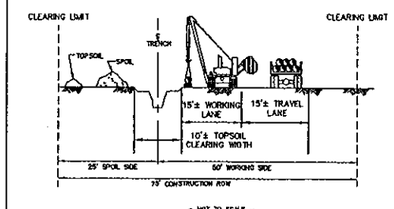
CODE: TST



- NOT TO SCALE -

NOTES:

1. SALVAGE TOPSOIL (BULLDOZER BLADE WIDTH) OVER TRENCH AT LOCATION AND DEPTHS IDENTIFIED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE COMPANY. STRIP SHALL BE WIDE ENOUGH TO ACCOMMODATE TRACKED BACKHOES OR WHEELED DITCHERS.
2. STOCKPILE TOPSOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE COMPANY. KEEP TOPSOIL CLEAN OF ALL CONSTRUCTION DEBRIS, MAINTAIN A MINIMUM 1' SEPARATION BETWEEN TOPSOIL AND SUBSOIL PILE EDGES.
3. LEAVE GAPS IN TOPSOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING.
4. AVOID SCALPING VEGETATED GROUND SURFACE WHEN PLACING BACKFILL FROM THE SPOIL PILE.

Williams.

TYPICAL R.O.W. SECTION BLADE WIDTH TOPSOIL SALVAGE

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-9140

DATE: 10/17/06

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
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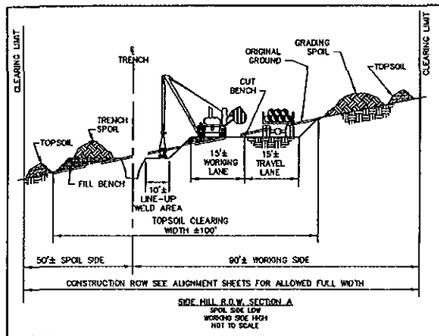
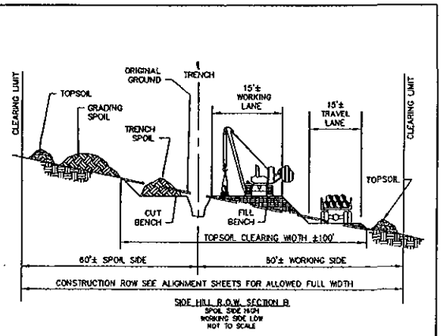


SIDE HILL R.O.W. SECTION A
SPOIL SIDE LOW
WORKING SIDE HIGH
NOT TO SCALE



SIDE HILL R.O.W. SECTION B
SPOIL SIDE HIGH
WORKING SIDE LOW
NOT TO SCALE

NOTES:

1. STRIP AND STOCKPILE TOPSOIL FROM FULL WIDTH WHERE GRADING IS REQUIRED FOR SIDE-HILL CUT AND FILL.
2. TOPSOIL SHALL BE STOCKPILED ON BOTH SIDES OF THE ROW (AS SHOWN) UNLESS OTHERWISE APPROVED BY THE COMPANY. KEEP TOPSOIL PILE CLEAN OF ALL CONSTRUCTION DEBRIS. MAINTAIN SEPARATION BETWEEN TOPSOIL, GRADING SPOIL AND TRENCH SPOIL PILES.
3. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL OR SPOIL INTO CREEKS OR WETLAND. DO NOT USE TOPSOIL FOR PADDING.
4. ON SIDE HILLS AREAS SHOWN ON DRAWINGS AND OTHER LOCATIONS APPROVED BY COMPANY, CONTRACTOR SHALL GRADE BI-LEVEL WORK PADS WITHIN THE DESIGNATED RIGHT-OF-WAY.
5. EQUIPMENT USED FOR CLEARING, GRADING, TRENCHING AND SMILAR ON SIDE HILL AREAS SHALL BE OF MINIMUM SIZE AND WEIGHT TO REDUCE DISTURBANCE AND MAINTAIN STABILITY.
6. WHEN NEEDED, SUITABLE RETAINING BARRIERS SHALL BE PLACED ON THE DOWNSLOPE EDGE OF RIGHT-OF-WAY TO CAPTURE AND HOLD EXCAVATED MATERIALS.
7. UNLESS OTHERWISE APPROVED BY COMPANY, GRADING SPOIL NOT USED FOR FILL BENCH CONSTRUCTION SHALL BE MOVED AND STORED ON THE UP HILL SIDE OF THE RIGHT-OF-WAY.
8. WHERE SIDE HILL SECTION IS OF SHORT LENGTH OR OF EXCESSIVE GRADE, ONLY A SINGLE COMBINED WORKING LANE AND TRAVEL LANE SHALL BE CONSTRUCTED. WHERE REQUIRED, PIPE LINE-UP, WELDING AND JOINT COATING SHALL BE PERFORMED AT AN ADJACENT AREA AND THE LINE INSTALLED AS A "DRAG SECTION."
9. RIGHT-OF-WAY SURFACE SHALL BE RESTORED TO NEAR ORIGINAL LINE, GRADE AND CROSS SLOPE UPON COMPLETION OF CONSTRUCTION. THE FINISHED SURFACE SHALL HAVE WATER BARS INSTALLED, SLOPE MATTING PLACED, RESEEDING AND RE-VEGETATION WORK DONE WHEN STATED IN OTHER PROJECT REQUIREMENTS OR ORDERED BY THE COMPANY.

Williams.

TYPICAL SIDE HILL R.O.W. SECTION WITH BI-LEVEL GRADING

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-9200

DATE: 10/23/06

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
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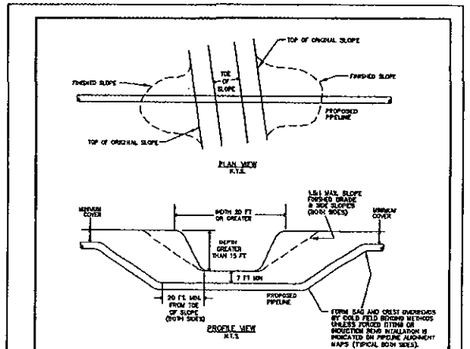


NOTES:

1. DRS METHOD APPLIES TO INCISED CHANNELS GREATER THAN 15 FEET DEEP AND WHEN DIRECTED BY COMPANY.
2. BANKS TO BE RESTORED AT A 1.5:1 MAXIMUM SLOPE AFTER COMPLETION OF CONSTRUCTION.
3. BMPs REQUIRED BY THE LANDOWNER OR PERMITTING AGENCY, FENCE SHALL BE INSTALLED ACROSS CUT AND RESTORED R.O.W. TO CONTROL CATTLE ACCESS.
4. WHEN SHOWN ON PIPELINE ALIGNMENT MAPS OR ORDERED BY COMPANY, INSTALL STREAM BANK SLOPE MATTING OF INCISED SLOPES.

Williams.

TYPICAL LARGE INCISED CHANNELS

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

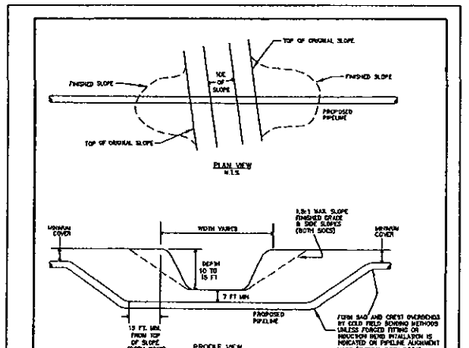
DWG No. DRG-15116-9190

DATE: 04/06/07

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	04/06/07	DRAFT-ISSUED FOR BID	GLS	WRS	-

CODE: LIC



NOTES:

1. DRS METHOD APPLIES TO INCISED CHANNELS OF 15 FEET OR LESS DEPTH OR WHEN DIRECTED BY COMPANY.
2. BANKS TO BE RESTORED AT A 1.5:1 MAXIMUM SLOPE AFTER COMPLETION OF CONSTRUCTION.
3. BMPs REQUIRED BY THE LANDOWNER OR PERMITTING AGENCY, FENCE SHALL BE INSTALLED ACROSS CUT AND RESTORED R.O.W. TO CONTROL CATTLE ACCESS.
4. WHEN SHOWN ON PIPELINE ALIGNMENT MAPS OR ORDERED BY COMPANY, INSTALL STREAM BANK SLOPE MATTING OF INCISED SLOPES.

Williams.

TYPICAL SMALL INCISED CHANNELS

DG GRIFFIN & ASSOCIATES, INC.

1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901, (307) 362-5028

SCALE: NONE

DWG No. DRG-15116-9196

DATE: 04/06/07

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	04/06/07	DRAFT-ISSUED FOR BID	GLS	WRS	-

CODE: SIC

NOTES

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	04/04/07	DRAFT-ISSUED FOR BID VERSION CLIENT REVIEW, COMMENT, APPROVAL	GLS	WRS	

DG GRIFFIN & ASSOCIATES, INC. 1414 ELK ST., SUITE 202, ROCK SPRINGS, WY 82901 (307) 362-5028

Williams

CONSTRUCTION & ENVIRONMENTAL DETAILS
6"/8" PARACHUTE GREASEWOOD
EXPRESS LIQUIDS PIPELINE
WILLIAMS FIELD SERVICES, LLC
PARACHUTE, COLORADO

SCALE: AS SHOWN
JOB No.: 15116
DRG-DTL06-15116
GARFIELD COUNTY, COLORADO
6 OF 6

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Tab 3- Project Overview- Parachute Greasewood Express Pipeline

May 22, 2007

Mr. Fred Jarman
Director
Garfield County Building and
Planning Department
108 8th Street, 4th Floor
Glenwood Springs, CO 81601

Dear Mr. Jarman,

Please consider this binder our application for a Development Plan Review for Right-of-Way for the Williams Field Services Company, LLC- Parachute Greasewood Express Pipeline.

Project Overview

Williams Field Services Company, LLC has prepared the attached materials with the intent to receive permits necessary to construct a natural gas liquids pipeline consisting of about 7.2 miles of new 6-inch and 8-inch diameter pipeline and the Parachute Natural Gas Liquids Storage facility in Garfield County, Colorado. Williams Field Services Company, LLC (WFS) is a division of the Williams Companies, Inc.

The pipeline is being proposed to provide safe, reliable and cost effective pipeline transportation of natural gas liquids produced by the Williams Production RMT Co. Parachute Creek and Grand Valley Gas Plants. These natural gas liquids are currently transported by truck to an injection facility located near Rangely, Colorado. The proposed pipeline will connect to an existing pipeline located on the north end of the Parachute Creek valley that will transfer the natural gas liquids to Enterprise Products near Greasewood in Rio Blanco County, Colorado.

Upon completion, this project is estimated to remove 20 to 30 tanker trucks per day from the Garfield County and state road system.

Project Description - The proposed 6-inch and 8-inch diameter pipeline will connect to the proposed Parachute Natural Gas Liquids Facility and will be constructed 7.2 miles up Parachute Creek to a tie-in with an existing 8-inch diameter pipeline. A tie-in to the existing Grand Valley Gas Plant (Township 5 South, Range 96W, SE ¼ Section 36) will also be made.

Ancillary facilities to be installed at the Parachute Natural Gas Liquids Facility will include a meter skid, instrument building and a pig launcher assembly. Other miscellaneous items to be installed include line markers, cathodic protection wire leads and cathodic protection current rectifier station.

Pipeline construction will primarily consist of typical trench and bury installation methods. At special road, irrigation ditch, creek crossings and other crossings, alternate installation methods including directional drilling, horizontal boring, flumed ditch and other methods will likely be used.

Pipeline Right-of-way Length and Widths - The total project right-of-way length is approximately 37,974 lineal feet (7.2 miles) all located on fee property. There are no public lands affected by this project.

There will be a 75 foot wide construction right-of-way and a 25 foot wide permanent right-of-way.

As per the Garfield County Zoning Resolution section 9.07, "Development Plan Review for Pipeline Right-of-Way", WFS is required to apply for a Development Plan Review for Right-of-Way because the proposed pipeline is "more than 5 miles in length".

We have located the new pipeline largely, in existing, disturbed right-of-way to limit surface disturbance to previously disturbed areas.

The design and construction of the pipeline system will be in accordance with applicable regulations, recognized industry codes and the normal and customary practice for this type of facility. These regulations and codes include the latest accepted editions of 49 CFR 195, Transportation of Hazardous Liquids by Pipeline.

Maximum operating pressure, pipe material specifications, basic construction requirements and other such design factors for the project are listed below:

Design maximum operating pressure: Normal operating pressure:	1,480 psig 1,100 psig
Project line pipe, F = 0.72	6.625" OD x 0.188" WT x API-5L X-42 8.625" OD x 0.250" WT x API-5L X-42
Project line pipe, F = 0.60 road crossings Project line pipel, F= 0.60 creek crossings	6.625" OD x 0.280" WT x API-5L X-42 8.625" OD x 0.322" WT x API-5L X-42

Project line pipe, F = 0.60 fabricated assemblies:	6.625" OD x 0.280" WT x API-5L X-52 8.625" OD x 0.322" WT x API-5L X-52
Valve and flange rating:	ANSI Class 600
Pipe coating, typical installation:	Nominal 15 mil thin film-fusion bonded epoxy factory applied (TF-FBE).
Pipe coating, road bore rough handling installation:	Abrasion resistant overlay (ARO) nominal 45 mil over nominal 8 mil TF-FBE.
Pipe coating, fabricated assembly installation:	Bare metal pipe provided for fabrication. Below grade installation primer coated and tape wrapped. Above grade installation spray painted with epoxy based paint.
Minimum pipe cover in trench:	4'-0" for general areas 6'-0" for road and creek crossings
Trench dimensions:	Width: Pipe OD + 1'-2" minimum Pipe OD + 3'-0" Maximum Depth: Min Cover + Pipe OD + 0'-6" **NOTE**: for trenches greater than 5'-0" total depth, conditions shall be inspected by a qualified person and appropriate slope stability measures implemented as required for safety. This may include sloping, shoring and bracing trench walls as directed by the qualified person.
Pipeline product:	Natural Gas Liquids
Operating temperature:	Nominal 60° F, Typical range 40°F to 90°F, Maximum design temperature coatings 120°F Maximum design temperature pipe, valves & fittings 250°F

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 4- Diagram showing adjacent properties and the approximate location of buildings and their uses within a distance of 350 feet of any proposed structure, facility or area to be disturbed. 9.07.04 (3)

There are no buildings within 350 feet of the proposed pipeline.
Please see details and alignment attached in tab 2- Vicinity Map 9.07.04 (1).

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 5- Evidence of surface owner notification and of surface agreements 9.07.04 (4)

Please find attached copies of the following surface agreements:

1. Easement and Right-of-Way Agreement- Williams Production RMT Co./Williams Field Services Co., LLC dated May 24, 2007.
2. Easement and Right-of-Way Agreement- Puckett Land Company/ Williams Field Services Co., LLC dated May 24, 2007.
3. Grant of Easement- Chevron USA, Inc./ Williams Field Services Co., LLC dated June 30, 2007.
4. Grant of Easements- EnCana Oil & Gas (USA), Inc./ Williams Field Services Co., LLC dated May 31, 2007.

These agreements cover all of the easements and right-of-way necessary for installation of the entire pipeline.

Please contact me with any questions.
Sincerely,

Philip B. Vaughan
President
PVCMI

EASEMENT AGREEMENT.

For and in consideration of the sum of Ten Dollars ($10.00) and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and subject to the terms and conditions hereinafter defined, Williams Production RMT Company, (hereinafter called "Grantor") with a mailing address at 1515 Arapahoe Street, Tower Three, Suite 1000, Denver CO 80202, does hereby grant, sell and convey unto Williams Field Services Company, LLC a Delaware limited liability company whose address is) One Williams Center WRC 3-9, Tulsa, OK, 74172., (hereinafter called "Grantee") a non-exclusive easement and right-of-way (hereinafter called the "Easement") to install, operate, maintain, inspect, repair, replace and remove a **pipeline and two meter station sites** and related appurtenances (collectively the " Grantees Facilities") for the purpose of receiving, delivering and transporting natural gas liquids within and across certain tracts of land (the "Easement Sites") as described on Exhibit "A", attached hereto and made a part hereof.

This grant is made without any warranty of title by Grantor either express or implied.

Grantor further conveys to Grantee the right of reasonable ingress and egress to and from the Easement Sites across Grantor's Land either within the Easement Sites or within established roads and through established gates upon Grantor's Land together with the right to utilize reasonable additional temporary work space along and adjacent to the Easement Sites provided that no such use shall interfere with Grantor's use and enjoyment of Grantor's Land. Except in the case of emergency, Grantee shall give Grantor at least 24 hours notice of its intent to enter onto Grantor's Land for routine work on the Meter Stations within the Easement Sites, and 30 days notice of its intent to enter Grantor's Land to carry out significant, major work such as excavation and lifting by crane.

By acceptance of this Easement, Grantee hereby covenants and agrees to bind itself, its successors and assigns, to the following described terms and conditions:

1. Grantee shall exercise the rights herein granted in a manner which will not unreasonably interfere with Grantor's present or future use of Grantor's Lands including that portion of Grantor's Lands contained within the Easement Sites. If at any time, in the opinion of Grantor, it is necessary to relocate or adjust and all or any portion of the Grantees Facilities to avoid interference with Grantor's use or intended use of Grantor's Land, Grantee, at Grantee's expense, shall relocate or adjust all or any portion of the Grantee Facilities within 120 days of being so advised by written notice from Grantor of the need to relocate or adjust Grantee's facilities.

2. The Grantees Facilities within the Easement Sites shall be limited to those facilities that are currently located upon the Easement Sites and to the replacement of any such existing facilities. If Grantee should desire to install additional facilities, Grantee must first acquire the prior written consent of Grantor which consent shall not be unreasonably withheld. Grantee shall have the right to place signs identifying Grantee's Meter Stations upon Grantee's existing fences surrounding the Easement Site.

3. All of Grantee's facilities installed by virtue of this Easement shall be constructed in a good workmanlike manner and in accordance with existing safety and industry standards and regulations. Grantee shall exercise all due precaution and safety in exercising its rights under this Easement and shall ditch by hand in areas deemed necessary by Grantor's designated on-site representative to avoid damaging any existing facilities. No boring or jacking operations by Grantee will be permitted within Grantor's Land and all excavations shall be "open trench".

4. Grantee shall observe all rules and regulations that have been or hereafter may be promulgated by Grantor and/or governmental authorities having proper authority over activities within Grantor's Lands for the conduct of individuals while on Grantor's Lands including, but not limited to, rules and regulations with respect to acts or practices deemed hazardous (including a "hot work" permit from Grantor

before any welding, grinding, or acetylene torch work is performed, and adherence to Grantor's visitor sign-in and security procedures) and Grantee also agrees to enforce compliance therewith by its employees, contractors, agents and invitees.

5. Grantee shall pay all taxes which may be levied or assessed against Grantee's facilities installed by virtue of this Easement and Grantee further agrees to reimburse Grantor for the amount of any taxes which may be assessed against Grantor by reason of Grantee having installed Grantee's facilities upon Grantor's Lands.

6. Grantor reserves the right to use Grantor's Lands, including, but not limited to the right to construct underground facilities, and install roads, parking lots and fencing and the right to grant others similar rights within and across the Easement Sites. Grantee accepts this grant subject to all prior easements, leases and other interests in Grantor's Lands created by Grantor or Grantor's predecessor's in title whether the same be of record or not, and all rights conferred by this Easement shall be exercised so as to avoid interference with any such prior easements, leases or other interests.

7. Grantee shall indemnify, save, hold harmless, and at Grantor's option, defend Grantor, its affiliated companies and partners and the directors, officers, employees, and agents of each such company and partners from any and all claims, demands, costs, (including without limitation, reasonable attorney and expert witness fees and court costs), expenses, losses, causes of action (whether at law or in equity), fines, civil penalties and administrative proceedings for injury or death of persons or damage or loss to property, environmental damages, or other business losses, including, without limitation, those made or incurred by Grantor or their affiliated companies and partners and the directors, officers, employees, or agents of each such company and partner, or third parties, or governmental agencies in any way arising from or relating to the exercise of the

rights herein granted through this Easement or from any work or acts attributable to Grantee, Grantee's employees, representatives, successors, contractors or assigns. The above described indemnification clause shall not be interpreted to cause Grantee to indemnify, save, hold harmless and defend Grantor from any of Grantor's negligence or willful misconduct.

8. During the exercise of Grantee's rights as set forth in this Easement within Grantor's Land, Grantee shall warrant that Grantee's contractors shall carry commercial general liability insurance on an occurrence form with a combined single limit of $5,000,000 each occurrence for bodily injury and property damage including coverage for blanket contractual liability, independent contractors, and sudden and accidental pollution. If any or all of the liability insurance is "claims-made", then in the event of cancellation of the insurance, substitute insurance shall be provided with terms and conditions and policy limits that comply with this Agreement including a retroactive date reflecting the commencement date of this Agreement and any such substitute or renewed insurance shall be maintained in full force and effect for at least two (2) years or provide for a two (2) year discovery period fro the date this Agreement terminates. Grantee's contractors shall waive and shall require their insurers to waive any right of subrogation or recovery they may have against Grantor, its parent or affiliated companies and partners. Grantor, its parent and affiliated companies and partners, shall be named as an additional insured, on a primary basis, with respect to the work performed under this Easement. The required liability insurance can be met under a primary or an excess policy or any combination thereof. Certificate(s) of insurance evidencing the above-described coverage must be delivered to Grantor's designated representative if so requested by Grantor

9. All notifications under this Easement shall be written and shall be forwarded through certified mail return receipt requested to the following addresses:

If to Grantee- Williams Field Services Company, LLC

Attn: Midstream Real Estate
One Williams Center WRC 3-9
Tulsa, OK, 74172

If to Grantee- Williams Production RMT Company
1515 Arapahoe Street,
Tower Three, Suite 1000,
Denver CO 80202

10. Should Grantee cease to use the Grantees Facilities for the purposes above described for a continuous period of two (2) years, this Easement shall terminate and Grantee, at Grantee's expense, shall first immediately remove the Grantees Facilities from Grantor's Lands and shall, within ninety (90) days after Grantee's use of the Grantees Facilities ceases, deliver to Grantor a complete release of this Easement as recorded in the appropriate County records.

11. This Easement together with the above-described terms and conditions shall constitute covenants running with the land and shall be binding upon and inure to the benefit of Grantor and Grantee, their successors and assigns. Grantee shall not assign this Easement in whole or in part to any other entity unless and until Grantee acquires the prior written consent of Grantor which consent shall not be unreasonably withheld.

IN WITNESS WHEREOF, this Agreement has been executed this 24 day of May, 2007.

WILLIAMS FIELD SERVICES COMPANY, LLC

By _____

Name: Clayton J. Harris

Title: Attorney-in-Fact

WILLIAMS PRODUCTION RMT COMPANY

By _____ SCH

Name: **Joseph P. Barrett**

Title: **Attorney-in-Fact**

STATE OF OKLAHOMA)

)SS

COUNTY OF TULSA)

Before me, the undersigned, a Notary Public in and for the county and state aforesaid, on this 24 day of May, 2007 personally appeared Clayton J. Harris, Attorney-In-Fact for WILLIAMS FIELD SERIVCES COMPANY, LLC, a Delaware limited liability company, and that said instrument was signed on behalf of said corporation, and said Clayton J. Harris acknowledged said instrument to be the free act and deed of said company.

In testimony whereof, I have hereunto set my hand and affixed by official seal at my office in said county and state the day and year last above written.

Roberta Rowe

Notary Public

My Commission Expires:
11-14-2009

Commission # _____

ROBERTA ROWE
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires 11/14/2009

STATE OF COLORADO)

) SS

COUNTY OF DENVER)

On this 31st day of May, 2007, before me appeared Joseph P. Barrett, to me personally known, who, being by me duly sworn, did say that he is the Attorney-in-Fact of Williams Production RMT Company and that the seal affixed to the foregoing instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation ~~by authority of its~~ ----------; and said Joseph P. Barrett acknowledged said instrument to be the free act and deed of said corporation.

In testimony whereof, I have hereunto set my hand and affixed my official seal at my office in said county and state the day and year last above written.

Patti E. Rives

Notary Public

Patti E. Rives

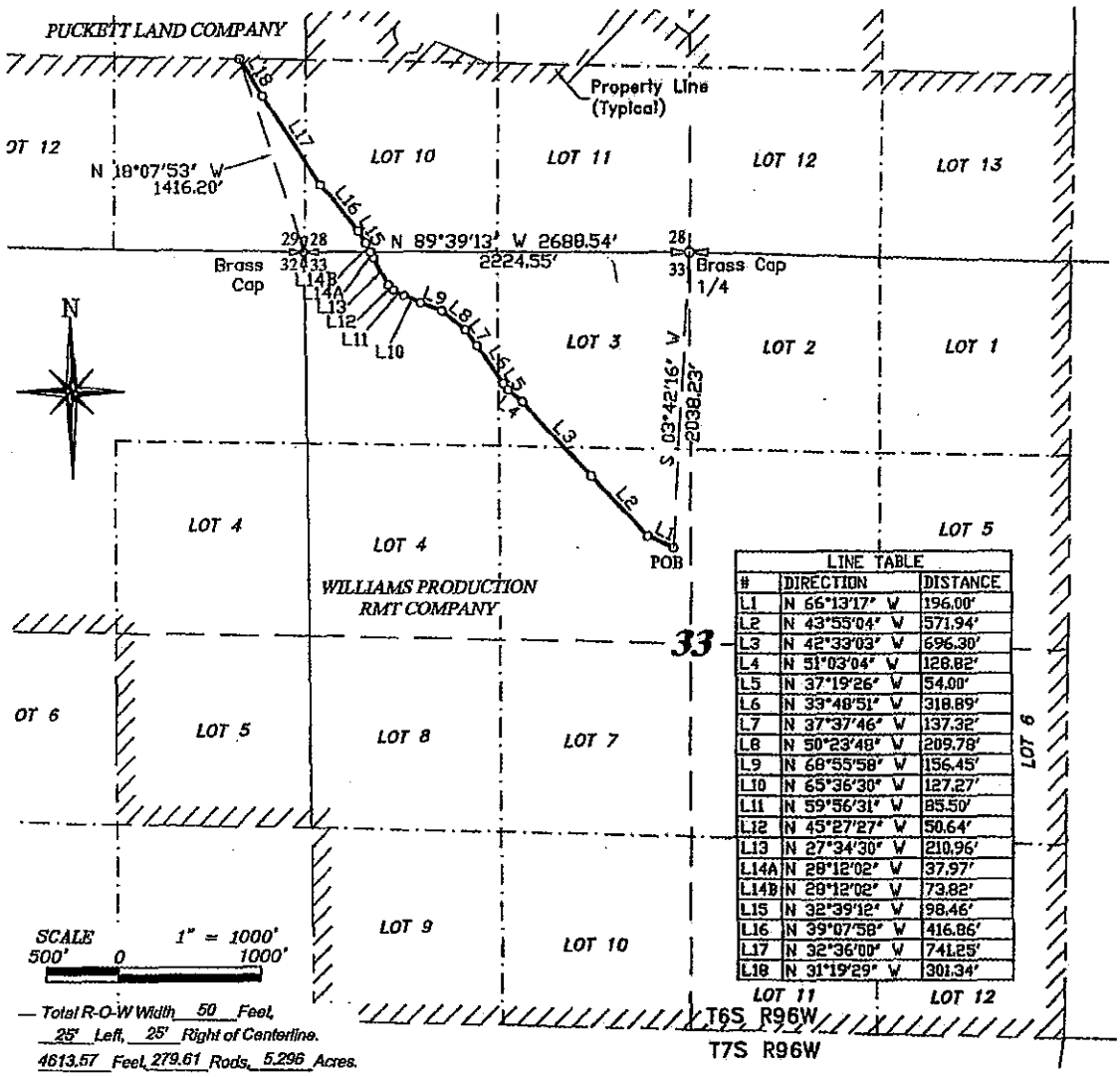
My Commission Expires:

5/21/2011

PATTI E. RIVES NOTARY PUBLIC STATE OF COLORADO

EXHIBIT A (1 of 2)
Attached to and made a part of that certain Grant of
Easement dated May 24, 2007 by and between
Williams Production RMT Company and Williams Field Services, LLC

SECTIONS 28, 29 AND 33, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



LINE TABLE		
#	DIRECTION	DISTANCE
L1	N 66°13'17" W	196.00'
L2	N 43°55'04" W	571.94'
L3	N 42°33'03" W	696.30'
L4	N 51°03'04" W	128.82'
L5	N 37°19'26" W	54.00'
L6	N 33°48'51" W	318.89'
L7	N 37°37'46" W	137.32'
L8	N 50°23'48" W	209.78'
L9	N 68°55'58" W	156.45'
L10	N 65°36'30" W	127.27'
L11	N 59°56'31" W	85.50'
L12	N 45°27'27" W	50.64'
L13	N 27°34'30" W	210.96'
L14A	N 28°12'02" W	37.97'
L14B	N 28°12'02" W	73.82'
L15	N 32°39'12" W	98.46'
L16	N 39°07'58" W	416.86'
L17	N 32°36'00" W	741.25'
L18	N 31°19'29" W	301.34'

— Total R-O-W Width 50 Feet,
25' Left, 25' Right of Centerline.
4613.57 Feet, 279.61 Rods, 5.296 Acres.

LEGEND

- FOUND MONUMENT SECTION CORNER
- FOUND MONUMENT PROPERTY OR OTHER CORNER
- FOUND MONUMENT 1/4 OR 1/16 CORNER
- CALCULATED OR PROJECTED CORNER

NOTES:

1.) DRAWING REFERENCED TO NAD27 DATUM-SPCS COG. ALL DISTANCES SHOWN ARE GRID DISTANCES.

2.) APPARENT LANDOWNER INFORMATION SHOWN HEREON BASED UPON GARFIELD COUNTY ASSESSOR OFFICE PARCEL MAP #2171 AND INTERNET RECORDS AS OF 12/07/06.

STATEMENT OF SURVEYOR:

BRIAN L. FORBES STATES HE IS BY OCCUPATION A REGISTERED LAND SURVEYOR EMPLOYED BY WILLIAMS FIELD SERVICES, LLC TO MAKE A SURVEY OF THE CENTERLINE OF A PIPELINE RIGHT-OF-WAY AS DESCRIBED AND SHOWN ON THIS MAP, CONSISTING OF 2 PAGES; THAT THE SURVEY OF SAID WORK WAS MADE UNDER HIS SUPERVISION AND AUTHORITY, COMMENCING FEBRUARY 11, 2007; AND THAT SUCH SURVEY IS ACCURATELY REPRESENTED UPON THIS MAP.

BRIAN L. FORBES 25357 PLS OF COLORADO 4/10/07

D.R.G. JOB#-15116

WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
WILLIAMS PRODUCTION RMT COMPANY

DRAWN BY: KRH	DATE: 03/28/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW01	EXHIBIT "A" 1 OF 2
CHECKED BY: LGB	DATE:	SCALE: 1" = 1000'			

EXHIBIT A (2 of 2)
Attached to and made a part of that certain Grant of
Easement dated May 24, 2007 by and between
Williams Production RMT Company and Williams Field Services, LLC

SECTIONS 28, 29 AND 33, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO

EASEMENT DESCRIPTION

A 50.00 foot wide permanent easement for pipeline purposes across the West Half of Section 33, Lot 10 of Section 28 and the Southeast Quarter of the Southeast Quarter of Section 29, Township 6 South, Range 96 West of the Sixth Principal Meridian, Garfield County, Colorado, said easement being 25.00 feet each side of the following described centerline:

Commencing at the North Quarter Section Corner of said Section 33, being a brass cap, thence South 03°42'16" West, 2038.23 feet to the Point of Beginning;
thence North 66°13'17" West, 196.00 feet; thence North 43°55'04" West, 571.94 feet;
thence North 42°33'03" West, 696.30 feet; thence North 51°03'04" West, 128.82 feet;
thence North 37°19'26" West, 54.00 feet; thence North 33°48'01" West, 318.89 feet;
thence North 37°37'46" West, 137.32 feet; thence North 50°27'48" West, 209.78 feet;
thence North 68°55'58" West, 156.45 feet; thence North 65°36'30" West, 127.27 feet;
thence North 59°56'31" West, 85.50 feet; thence North 45°27'27" West, 50.64 feet;
thence North 27°34'30" West, 210.96 feet; thence North 28°12'02" West, 37.97 feet to the North line of said Section 33 from which the Northwest Section Corner of said Section 33, being a brass cap, bears North 89°39'13" West, 463.99 feet;
thence continuing along the centerline of the pipeline easement into said Section 28 North 28°12'02" West, 73.82 feet;
thence North 32°39'12" West, 98.46 feet; thence north 39°07'58" West, 416.86;
thence North 32°36'00" West, 741.25 feet; thence North 31°19'29" West, 301.34 feet to the North line of the Southeast Quarter of the Southeast Quarter of said Section 29 from which the Southeast Section Corner of said Section 29, being a brass cap, bears South 18°07'53" East, 1416.20 feet.

Said easement is 4,613.57 feet in length and contains 5.296 acres, more or less.

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB #-15116

WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
WILLIAMS PRODUCTION RMT COMPANY

DRAWN BY: KRH	DATE: 03/28/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW01	EXHIBIT "A" 2 OF 2
CHECKED BY: LGB	DATE:	SCALE: 1" = 1000'			

EASEMENT AND RIGHT-OF-WAY AGREEMENT

THIS EASEMENT AND RIGHT-OF-WAY AGREEMENT is entered into and effective the 24th day of May 2007, between **Puckett Land Company**, 5460 South Quebec Street, Suite #250, Greenwood Village, CO 80111 ("GRANTOR") and **Williams Field Services Company, LLC**, One Williams Center, WRC 3-9, Tulsa, OK, 74172, ("GRANTEE").

RECITALS

A. Grantor represents but does not warrant that it owns an interest in the surface estate to the property described below ("Subject Lands") and located in Garfield County, State of Colorado described as follows:

Township 6 South, Range 96 West
Section 29: Lot 5 (SE/4NE/4), Lot 6 (NE/4SE/4)

B. Grantee desires to obtain a pipeline easement ("the Easement") for the purpose of constructing, maintaining and operating a natural gas pipeline ("New Pipeline") for the gathering and/or transportation of oil, gas and other hydrocarbons across the Subject Lands.

AGREEMENT

In consideration of the foregoing recitals and the terms, covenants and conditions contained herein, Grantor and Grantee agree as follows:

CONSIDERATION: Grantee shall pay Grantor a one-time payment on the date of execution of this agreement, at the rate of [redacted] per rod, the sum of [redacted]. Said consideration covers Grantees use of the right-of-way to install a pipeline, which is herein recited and reflected on the attached Exhibit "A".

PIPELINE & RIGHT-OF-WAY: An easement and right-of-way to construct, lay, maintain, modify, operate, alter, replace, remove the New Pipeline, including but not limited to valves, regulators, meters, separators, purification equipment and pipeline with fittings, appliances, and appurtenant facilities. Staging areas are not granted under this easement. The pipeline shall be used for the transportation and processing of oil, natural gas, petroleum products or any other liquids, gases or substances which can be transported through a pipeline and for no other purpose. The approximate pipeline route for the New Pipeline is depicted on Exhibit "A", attached hereto and made a part hereof. Said easement and right of way shall be fifty feet (50') in width, for a total distance of approximately one hundred and four rods (103.73 rods). The pipeline location as shown on Exhibit "A" is subject to change upon receipt of a final survey, a certified copy of which shall be provided to Grantor at no cost. During the construction of said permanent pipeline easement, and additional 25 feet is granted, being located on the easterly side of the permanent easement. (See Exhibit "A")

Except where Grantee's activities will interfere with irrigation ditches, streams or creeks, Grantee shall bury the pipeline with a minimum of forty-eight inches (48") of soil from the top of the pipeline to the normal surface of the ground. The affected areas shall be recontoured and reseeded with species, which are consistent to adjacent, undisturbed areas upon completion of pipeline construction to prevent erosion. Grantee shall be permitted to cut all undergrowth and other obstructions that may injure, endanger or interfere with the use of said pipeline.

Grantee may request from time to time, to lay within the right of way described above an additional line(s) of pipe similar to or different in size from and alongside of the line herein mentioned. Grantor reserves the right to approve such request on a case-by-case basis. Upon such approval Grantee shall pay Grantor, his heirs or assigns for each additional line a sum of money equal to the consideration paid for the first Pipeline and Right-of-Way easement within 30 days of such written approval.

Grantor reserves the right to the full use and enjoyment of the Subject Lands except for the purposes herein granted. Such rights reserved to the Grantor may include the conducting of haying, irrigation, and grazing operations, and Grantee agrees to coordinate post construction and maintenance operations with haying and ranching operations. In no event shall the location of this Right-of-Way unreasonably interfere with use of the Subject Lands for commercial development of any kind, or oil, gas, and oil shale development.

The foregoing rights and privileges of Grantee are further conditioned upon the following:

1. DAMAGES: Grantee shall either repair and/or pay Grantor for damages (if any) caused by its operations on the Subject Lands relative to growing crops, buildings, ditches, fences and livestock of Grantor or Grantor's surface lessees. If Grantee makes any fence cut on the Subject Lands, it will install and provide for secure closure of gates. All gates of any kind or nature shall be kept by Grantee in the condition in which they were found upon entry. If Grantee discovers an open gate then Grantee will close the gate and notify Grantor. All equipment or appurtenances to the pipeline or wells, which shall be on or above the surface of the ground, shall be installed in a manner to protect the livestock of Grantor or Grantor's surface lessee when necessary. Grantee shall not alter the natural flow of any creeks, streams, or irrigation ditches relative to the Subjects Lands. Grantee shall notify Ray Anderson with Puckett Land Company of any activity that may impact Grantor's use of the Subject Lands and adjoining acreage.

2. OPENING AND RESTORATION OF FENCES: Opening and restoration of Grantor's fences shall be made at Grantee's sole cost, risk and expense as follows:
   2.1. Prior to cutting grantor's fences, at each fence opening Grantee shall tie the existing fence into a three-post, pipe "H" brace built pursuant to the following specifications:
      2.1.1. Eight foot (8') by six inch (6") treated posts shall be set at least forty-two inches (42") in the ground and shall be braced to take the strain.
      2.1.2. Center crosses shall be placed a minimum of thirty-six inches (36") above the ground.
   2.2. Grantee shall install fence stays every four feet (4') in all temporary gates installed in Grantor's fences.
   2.3. Grantee shall install a fence around all mud pits. Said fence shall have pipe "H" braces with five wires. Grantee shall install posts every twelve feet.
   2.4. Grantee shall be responsible for preventing Grantor's livestock from escaping from or enabling livestock of others from entering through any fence openings resulting from Grantee's construction activities. If a gate is left open, Grantee is responsible for the cost involved in gathering the cattle that escaped, including the actual costs for cowboy(s) needed to recover any escaped livestock plus reimbursement for any damages. If it is determined that the livestock can not be recovered within a cost effective amount of time, Grantee shall have the option of compensating the Grantor for the actual loss incurred due to the loss of livestock instead of continuing to attempt to recover the livestock.
   2.5. Upon Grantee's completion of the construction, repair, maintenance, or alteration of the pipelines, Grantee shall promptly rebuild permanent fences equal to or better than the existing fence. Both Grantee and its contractors shall first consult and obtain Grantor's approval for location of fence work, materials and construction applications. Grantee shall use 1¾" staples, wood posts, Colorado Fuel and Iron (CF&I) heavy-duty steel posts and CF&I barbed wire to rebuild Grantor's fence and consult with Grantor for approval of the fence builders that will do the fence replacement.
   2.6. Fences shall not be considered equal to the existing fence if the posts have been undercut or brush has been shoved into the fence. If Grantee has disturbed the ground, plowed mud, or added other material within three feet of a fence, it shall be Grantor's judgment as to what fence is not equal to or better than the existing fence.
   2.7. If requested in writing by Grantor, Grantee will also install pipe cattle guards of sufficient size and substance to bear Grantee's traffic and to turn all livestock. Such cattle guards shall not be installed without prior approval of Grantor and shall be installed in such a manner as to prevent water draining into the cattle guards, placed at a height so they are visible to cattle from reasonable distance, and shall be cleaned and otherwise maintained by Grantee. Quality metal gates shall be a minimum of ten feet in width, shall contain either a metal gate or electric fence and shall be placed across and adjacent to the cattle guards.

3. LIVESTOCK: If any of the Grantor's or Grantor's lessees' livestock are injured or killed by the direct or indirect actions of the Grantee or its employees, contractors, subcontractors or agents, the Grantee shall pay the Grantor the veterinarian, medical or other costs to rehabilitate an injured animal, or reimburse Grantor or Grantor's lessee(s) the value of an animal killed or euthanased, according to the following schedule:
   3.1. Cows: Replacement cost of a bred heifer or $1,000.00, whichever is greater;
   3.2. Calves: Market value of 700 lb. calf or $750.00, whichever is greater;
   3.3. Bulls: $3,000.00 or the acquisition price for that animal, whichever is greater;
   3.4. Dogs: Current market price or the acquisition price for that animal, whichever is greater.
   3.5. Horses: Grantor shall maintain and provide to Grantee upon Grantee's written request, an Inventory of its horses as well as the horse's market value. Grantee agrees to reimburse Grantor the value of the horse based on the Inventory in the event the horse is killed by the direct or indirect actions of the Grantee.
   3.6. Other domesticated Livestock: Then-current market price or the acquisition price for that animal, whichever is greater.

4. MAINTENANCE: All access roads, fences, and gates impacted by Grantee's use or operations which are subject to this Agreement shall be maintained by Grantee in as good condition as exists at the time of execution of this Agreement, ordinary wear and tear excepted. Grantor shall give Grantee written notice of degradation or damage to the Subject Lands caused by Grantee's operations.

5. WEED CONTROL: Grantee shall be responsible for controlling all noxious weeds, including without limitation, halo Eton, cocklebur, Canada thistle, knapweed species, leafy spurge, houndstounge, musk thistle and whitetop species on Subject Lands. Grantee shall also be responsible for preventing such noxious weeds from spreading to Grantor's lands adjacent to the Subject Lands. In the event such noxious weeds spread to Grantor's lands adjacent to the lands subject to the easement granted herein, Grantee shall be responsible for controlling the noxious weeds of those lands as well, provided that those portions of the Subject Lands affected by the construction of the right-of-way were free of such noxious weeds prior to such time of construction. If the lands immediately adjacent to the right-of-way are not free of such noxious weeds prior to construction of the same, Grantee's responsibility shall be limited to reasonable control of such noxious weeds on the lands subject to the this agreement. If Grantee locates or Grantor notifies Grantee of location of noxious weeds on the right-of-way, Grantee shall implement control procedures before noxious weeds go to seed. Grantee's responsibility for weed control shall be ongoing and shall continue for three (3) years after the Subject Lands have ceased to be used by the Grantee for the purposes herein granted. Such control procedures as set forth above shall at the very minimum conform to those established by the Bureau of Land Management.

6. NON-EXCLUSIVE USE AND RESERVATIONS: This Agreement and all other rights hereby granted are not exclusive to Grantee and are limited to the specific grant herein. This Agreement does not, in any way whatsoever, convey any water rights or the right to use water. Grantor reserves unto itself and its successors and assigns all rights not specifically granted to Grantee herein. Grantor may grant additional rights-of-way or easements on, over, across, under and/or through the Right-of-Way to any third party for any reason, in Grantor's sole and absolute discretion, so long as such grant does not interfere with Grantee's access rights as described in this Agreement.

7. AGRICULTURAL LIABILITY: Grantee shall take reasonable precautions to avoid damage to agricultural operations on or adjacent to the Subject Lands. Grantee shall have and assumes liability for all cattle, crops, or chattel lost as a result of Grantee's operations on the Subject Lands.

8. LOCAL SPECIES/HABITAT LIABILITY: Grantee shall have and assumes liability for all endangered species, protected species, wildlife habitat and bio-diversity damaged or destroyed as a result of Grantee's operations on the Subject Lands.

9. CULTURAL AND PALEONTOLOGICAL RESOURCES: Grantee is to engage the services of a cultural resource specialist to conduct a cultural resource inventory of the area of proposed surface disturbance following the guidelines of the Bureau of Land Management. Any and all resources inventoried shall be delivered to the Grantor.

10. LIABILITY OF THE PARTIES: Grantee covenants and agrees to fully defend, protect, indemnify and hold harmless Grantor, its officers, directors, employees and agents, from and against each and every claim, demand or cause of action and liability, cost and/or expense (including but not limited to reasonable attorney's fees and costs incurred in defense of Grantor, its officers, directors, employees and/or agents), for damage or loss in connection therewith, which may be made or asserted by Grantee, Grantee's officers, directors, partners, members, employees and/or agents, or which may be asserted by any third party (including but not limited to Grantor's officers, directors, employees and/or agents), on account of personal injury or death or property damage caused by Grantee's use of the Subject Lands or the rights granted hereunder, except to the extent such damage or injury results from the actions of Grantor, its contractors, agents or assigns. Where personal injury, death, or loss of or damage to property is the result of the joint actions of Grantor or Grantee, Grantee's duty of indemnification shall be in proportion to its allocable share of such action.

    It is expressly agreed that the indemnity obligation specifically includes, but is not limited to, claims arising under the provisions herein entitled Agricultural Liability above, and all federal laws and regulations including but not limited to the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.A. &9601 et. seq. and amendments, Resources Conservation and Recovery Act, 42 U.S.C.A. &6901 et. seq. and amendments, Safe Water Drinking Act, 42 U.S.C.A. 300f et. seq. and amendments, Toxic Substances Control Act, 15 U.S.C.A. &2601 et. seq. and amendments, Clean Water Act, 33 U.S.C.A. &1251 et. seq. and its amendments, Clean Air Act, 42 U.S.C.A. & 7401 and amendments, Natural Gas Pipeline Act, 49 U.S.C.A. 1671 et. seq. and amendments, Hazardous Liquid Pipeline Safety Act, 49 U.S.C.A. 2001 et. seq. and amendments, and all state and local environment laws, rules, and regulations.

    Neither party shall be liable to the other for any damages due to fire, earthquake, flood, windstorm and other like casualty or other causes beyond its reasonable control, nor for damages caused by public improvements or condemnation proceedings. Notwithstanding the foregoing, neither party shall be required to settle a labor dispute against its will.

11. LAWS, RULES, AND REGULATIONS: Grantee shall at its sole expense comply with all federal laws and regulations as well as those of the State of Colorado and any other governmental authority having jurisdiction over Grantee's activities on the Subject Lands. Grantee shall deliver to Grantor copies of all permits, and cultural, botanical, and wildlife reports covering Grantor's land and adjoining Bureau of Land Management land.

12. DRUGS, ALCOHOL AND FIREARMS: Grantee shall not allow the use, possession, transfer, purchase or sale of illegal drugs, narcotics, or other unlawful substances and materials by Grantee or its contractors, sub-contractors, agents, while on the Subject Lands or adjacent lands. The use, possession, transfer, purchase or sale of alcoholic beverages, firearms and other weapons upon the Subject Lands or adjacent lands is absolutely prohibited.

13. HUNTING AND FISHING: No hunting, trapping or fishing is permitted on the Subject Lands or adjacent lands and no such rights are granted by this Agreement.

14. WATER RIGHTS NOT CONVEYED: This Agreement does not, in any way whatsoever, convey to Grantee any water rights or the right to use water on, under or appurtenant to the Subject Lands.

15. WATER AND DRAINAGE: Grantee shall have and hereby assumes absolute liability for damages to water wells, water tables, natural springs, running watercourses, and water tanks within 330' of the center line of the right-of-way insofar as damage can reasonably be determined to be the result of Grantee's operations.

16. ACCESS TO PIPELINE: Grantee agrees to install a tap on said pipeline in __(TBD)_____(legal location). Grantee agrees to accept Grantor's gas at the tap on a best efforts basis. Grantor's gas must be of pipeline quality. Grantee and Grantor shall negotiate a gas gathering and processing agreement at rates not to exceed the rate charged by Grantee for other third party services in the area for like quality gas.

17. NOTICE: Any notice or written demand to be given to Grantor or Grantee may be delivered in person, by fax or certified or registered mail, postage prepaid, addressed to the party for whom intended. Notice shall be deemed given upon receipt.

Puckett Land Company	Williams Field Services Company, LLC
Attn: Ray Anderson	Attn: Clayton J. Harris
5460 S. Quebec St., Suite 250	One Williams Center, WRC 3-9
Greenwood Village, CO 80111	Tulsa, OK 74172
Phone: 303-773-1094	Phone: 918-671-0809
Fax: 303-773-1157	Fax: 918-573-9755

18. TERM: This Agreement shall remain in effect for a primary term ending December 31, 2008, and for so long thereafter as Grantee is using the Easement for the purposes described above. If, after this primary term, operations for the transportation of natural gas cease for a period of more than twenty-four (24) consecutive months, then such operations shall be deemed not to be conducted and this Agreement shall terminate, except when non-use is caused by acts or circumstances beyond the control of Grantee. Grantor may terminate this Agreement at any time after the end of the primary term by giving at least twelve (12) months written notice thereof to Grantee. Following termination of this Agreement, it shall be Grantee's obligation to restore and reclaim all land affected by Grantee's activities to the extent required by applicable law or regulation established by the Bureau of Land Management or to its equivalent prior condition (ordinary wear and tear expected), whichever is greater, including, but not limited to, the removal of facilities.

19. GOVERNING LAW: This Agreement and all matters pertaining hereto, including, but not limited to, matters of performance, non-performance, breach, remedies, procedures, rights, duties, and interpretation or construction, shall be governed and determined by the laws of the State of Colorado.

20. MISCELLANEOUS: This Agreement contains the entire agreement between Grantor and Grantee and any prior oral representations or understanding concerning this Agreement or its subject matter shall be of no force and effect.

    This Agreement is subject to all contracts, leases, liens, easements and encumbrances or claims of title, which may affect the Subject Lands, and nothing contained herein shall be construed as a covenant or warranty against the existence of any thereof.

    The terms and provisions of this Agreement shall extend to and be binding upon the parties, their respective heirs, successors, legal representatives and third party assigns, should Grantor consent to such third party assignments.

    Notwithstanding anything in this Agreement to the contrary, upon written notice, Grantee shall have the right, in its sole discretion, to assign this Agreement to any of its affiliates or subsidiaries, with the provision that such written notice shall require Grantor's consent.

21. MEMORANDUM OF EASEMENT AND RIGHT-OF-WAY: Grantee shall cause to be filled of record a fully executed and acknowledged original Memorandum of Easement and Right-of-Way, in a form reasonably acceptable to Grantor and Grantee, and shall promptly provide to Grantor a recorded copy thereof. Such Memorandum shall be recorded in the appropriate real property records of the county in which the Subject Lands are located.

IN WITNESS WHEREOF, the parties have executed this Easement and Right-of-Way Agreement the day and year indicated below but effective on the date first set forth above.

GRANTOR:

PUCKETT LAND COMPANY

By: Jeffrey V. Puckett, President

5/24/07
Date:

GRANTEE:

WILLIAMS FIELD SERVICES COMPANY, LLC

By: Clayton J. Harris, Attorney-in-Fact of
Williams Field Services Company, LLC

Date: 5/30/07

ACKNOWLEDGEMENTS

STATE OF Colorado)
)ss
COUNTY OF Arapahoe)

Before me, on this 24th day of May, 2007, the foregoing instrument was executed by Jeffrey V. Puckett known to me to be the duly authorized President of Puckett Land Company, Grantor, and acknowledged said execution to be the signer's free and voluntary act and deed on behalf of said Grantor, for the uses and purposes therein set forth.

Witness my hand and official seal.

Notary Public

My Commission Expires:

RAYMOND S. ANDERSON
"NOTARY PUBLIC" - COLORADO
"My Commission Expires"
04/04/2009

STATE OF OKLAHOMA)
)ss
COUNTY OF TULSA)

Before me, on this 30th day of MAY, 2007, the foregoing instrument was executed by Clayton J. Harris known to me to be the duly authorized Attorney-in-Fact of Williams Field Services Company, LLC, Grantee, and acknowledged said execution to be the signer's free and voluntary act and deed on behalf of said Grantee, for the uses and purposes therein set forth.

Witness my hand and official seal.

Notary Public

My Commission Expires: June 22, 2008

CAROLYN P. CAHILL
NOTARY PUBLIC
STATE OF OKLAHOMA
TULSA COUNTY

EXHIBIT A (1 of 2)
Attached to and made a part of that certain Grant of
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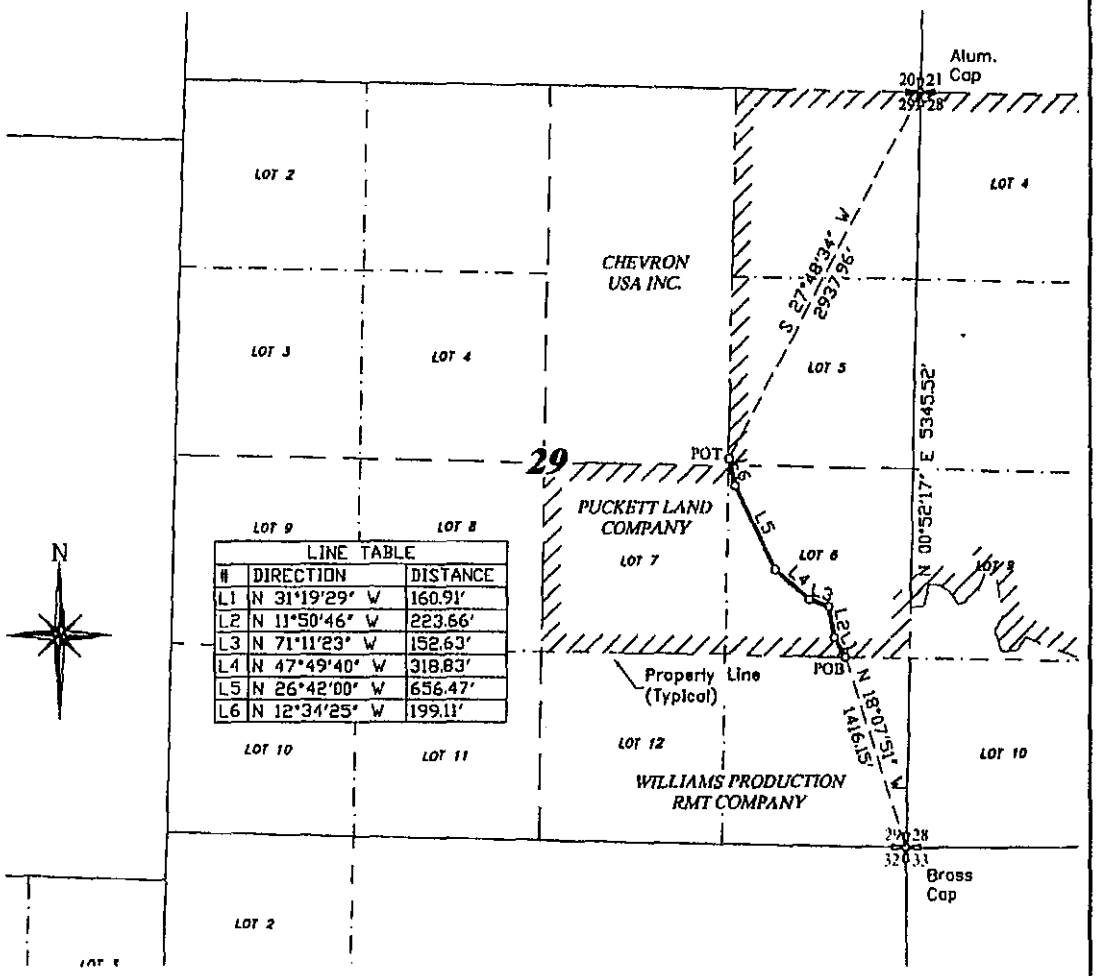

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Total R-O-W Width 50 Feet,
25' Left, 25' Right of Centerline.
1711.81 Feet, 103.73 Rods, 1.965 Acres.

LEGEND

- FOUND MONUMENT SECTION CORNER
- FOUND MONUMENT PROPERTY OR OTHER CORNER
- FOUND MONUMENT 1/4 OR 1/16 CORNER
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BRIAN L. FORBES STATES HE IS BY OCCUPATION A REGISTERED LAND SURVEYOR EMPLOYED BY WILLIAMS FIELD SERVICES, LLC TO MAKE A SURVEY OF THE CENTERLINE OF A PIPELINE RIGHT-OF-WAY AS DESCRIBED AND SHOWN ON THIS MAP, CONSISTING OF 2 PAGES; THAT THE SURVEY OF SAID WORK WAS MADE UNDER HIS SUPERVISION AND AUTHORITY, COMMENCING FEBRUARY 11, 2007; AND THAT SUCH SURVEY IS ACCURATELY REPRESENTED UPON THIS MAP.

BRIAN L. FORBES 25367 PLS COLORADO 25367 5/22/07

REVISED 5/22/07	REVISED TITLE BLOCK	BY: KRH

D.R.G. RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB#--15116

WILLIAMS FIELD SERVICES, LLC
PARACHUTE GREASEWOOD 6" EXPRESS
LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
PUCKETT LAND COMPANY

DRAWN BY: KRH	DATE: 03/28/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW02	EXHIBIT "A" 1 OF 2
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SECTION 29, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO

EASEMENT DESCRIPTION

A 50.00 foot wide permanent easement for pipeline purposes across Lot 5 and Lot 6 of Section 29, Township 6 South, Range 96 West of the Sixth Principal Meridian, Garfield County, Colorado, said easement being 25.00 feet each side of the following described centerline:

Commencing at the Southeast Section Corner of said Section 29, being a brass cap, thence North 18°07'51" West, 1416.15 feet to the Point of Beginning;
thence North 31°19'29" West, 160.91 feet; thence North 11°50'46" West, 223.66 feet;
thence North 71°11'23" West, 152.63 feet; thence North 47°49'40" West, 318.83 feet;
thence North 26°42'00" West, 656.47 feet; thence North 12°34'25" West, 199.11 feet to the Point of Terminus from which the Northeast Section Corner of said Section 29, being a aluminum cap, bears North 27°48'34" East, 2937.96 feet.

Said easement is 1,711.61 feet in length and contains 1.965 acres, more or less.

REVISED 5/22/07	REVISED TITLE BLOCK	BY: KRH

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB#–15116

WILLIAMS FIELD SERVICES, LLC
PARACHUTE GREASEWOOD 6" EXPRESS
LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
PUCKETT LAND COMPANY

DRAWN BY: KRH	DATE: 03/20/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW02	EXHIBIT "A" 2 OF 2
CHECKED BY: LGB	DATE:	SCALE: 1" = 1000'			

QLS _____

PIPELINE EASEMENT AGREEMENT

STATE OF COLORADO §
§
COUNTY OF GARFIELD §

THIS PIPELINE EASEMENT AGREEMENT, made this 30th day of June, 2007, between Chevron Shale Oil Company, a division of Chevron U.S.A. Inc, a Pennsylvania corporation, with offices at 11111 S. Wilcrest Dr., Houston, Texas 77099, hereinafter referred to as "GRANTOR" and Williams Field Services LLC, a Delaware corporation, with offices at 1515 Arapahoe St. Tower 3, Suite 1000, Denver, CO, 80202, hereinafter referred to as "GRANTEE."

WITNESSETH:

WHEREAS, GRANTOR is the owner of certain real property in Garfield County, Colorado; and

WHEREAS, GRANTOR desires to grant and GRANTEE desires to acquire certain rights in a portion of said real property;

NOW, THEREFORE, in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. GRANT OF EASEMENT. GRANTOR hereby grants to GRANTEE, subject to the terms and conditions hereof, the following easement:

A. A non-exclusive pipeline right-of-way in certain parcels situated in Sections 29, 20, 17, 8, 4 & 5, T6S-R96W and Section 36, T5S-R96W of the 6th P.M., Garfield County, Colorado and is more particularly described in Exhibit "A", which is attached to this Agreement. This right-of-way is twenty feet (20') in width, the centerline of said right-of-way being situated directly over the proposed pipeline right-of-way as further detailed in Exhibit "A", for the sole purpose of laying, constructing, operating, inspecting, maintaining, repairing, replacing, and removing one six inch (6") pipeline (with valves, meters, fittings, appliances, and related facilities), for the transportation of natural gas and associated liquids and gases hereinafter referred to as "the pipeline", over and through the land described in Exhibit "A" hereof, hereinafter referred to as the "Easement Area," in Garfield County, Colorado. The rights granted herein do not include the right to explore for or produce oil, gas or other minerals, and does not include agricultural, farming, ranching or hunting rights.

If GRANTEE fails to complete construction of its pipelines in the right-of-way granted herein within six (6) months from the date of this Agreement, this Agreement will terminate immediately.

GRANTEE shall provide GRANTOR an as built survey of the pipelines as constructed in GRANTOR's Easement within two (2) months of completing construction in GRANTOR's Easement.

B. GRANTEE shall have the right of ingress and egress in, on, over, across and through the Easement Area for any and all purposes necessary to the exercise by GRANTEE of the rights and right-of-ways granted herein.

C. GRANTOR reserves the right for itself or its assignees to explore for, mine, and remove oil shale, oil and gas, ores and other minerals in, on or under the Easement Area.

D. This Agreement is made subject to all existing easements, rights-of-way, licenses, leases and other agreements affecting the surface or subsurface of the Easement Area and GRANTOR further reserves the right to grant other easements to third parties to cross over or under this easement and right-of ways. GRANTEE is responsible for obtaining any necessary third party consents prior to conducting activities on the Easement Area pursuant to this Agreement.

E. GRANTOR makes no warranties or representations concerning the title to the Easement Area.

2. COVENANT THAT OPERATION OF EASEMENT NOT INTERFERE WITH SERVIENT TENEMENT.

A. GRANTEE agrees to maintain and operate the easement herein granted in such manner that the operation thereof will in no way hinder or prevent the use and enjoyment of GRANTOR's adjoining property, including use thereof for exploration, mining, oil shale development, oil and gas development, farming, ranching and land development.

B. GRANTEE shall have no right to locate any permanent surface installation on any part of the Easement Area without the prior written approval of GRANTOR, which approval is separate from and in addition to any rights granted in this Pipeline Easement Agreement.

C. GRANTEE agrees to remove top-soil from the Easement Area separately from other material removed by GRANTEE in connection with its activities on the Easement Area, and to replace such topsoil on completion of any such activity. GRANTEE further agrees to insure that the Easement Area shall be left free of any large stones, holes, or piles of dirt which would interfere with farming, ranching and/or other operations thereon. All stones, brush and debris uncovered on, removed from or deposited on GRANTOR's lands as the result of activities permitted hereunder shall be disposed of at GRANTOR's direction. Except as otherwise provided herein, all areas disturbed as the result of activities permitted hereunder, within three months of installing pipe into the Easement shall be reclaimed to original condition or as near thereto as practicable, which shall include reseeding with seed mixes approved by GRANTOR or GRANTOR's agricultural lessee(s). GRANTEE shall continue to reseed and cultivate until successfully reestablishing self sustaining vegetation. Reseeded areas shall be properly mulched except in pastures and hay fields. GRANTEE shall spray all areas affected by construction to control noxious weeds for a period of no less than three growing seasons following the installation of pipe.

D. GRANTEE agrees to replace or rebuild, to the satisfaction of GRANTOR, any and all parts of any road or any drainage or irrigation system or other improvement that may be damaged in connection with GRANTEE's activities conducted pursuant to this Agreement. Upon completion of any pipeline construction, replacement, substitution, relocation, or removal activities permitted hereunder, GRANTEE shall grade all permanent roads on GRANTOR's lands which were used in connection with said activities.

E. GRANTEE shall have the right to cross fences on the adjoining property of GRANTOR whenever such crossing shall be reasonably necessary in conducting activities permitted under this Agreement. GRANTEE shall maintain a proper enclosure at all times and shall restore such fences to a condition equal to or better than their condition prior to such crossing as promptly as possible provided, however, that GRANTEE shall not be responsible for a lack of proper enclosure or for restoration of fencing if caused by someone other than GRANTEE, its employees, agents, contractors, subcontractors, or invitees.

F. GRANTOR reserves the right to fence the whole or any part of the boundaries of the right-of-way, and the right to build fences crossing such easement.

G. GRANTEE shall bury its pipeline and subsurface facilities to provide a minimum of thirty-six (36) inches between the top of the pipelines and facilities and the ground level

except in those areas where rock is encountered that would otherwise require blasting, in which case, the facilities shall be buried a minimum of eighteen (18) inches below the ground surface.

H. Except as otherwise provided herein, GRANTEE shall properly backfill and compact disturbed ground, excavated pipeline trenches, and other excavations in connection with its activities on the Easement Area. Compaction of disturbed areas in hay fields and pastures shall be accomplished using hydro-compaction methods followed by replacement of topsoil, free of stones and other debris. Immediately upon completion of any activity performed under this Agreement, GRANTEE shall repair damage to open irrigation and drainage ditches by using proper mechanical ditch channel compaction methods and by reestablishing pre-disturbance grades and flowlines. All culverts and buried irrigation system pipelines damaged by the activities permitted hereunder shall be replaced by GRANTEE immediately upon completion of the activity.

I. GRANTEE shall have the ongoing responsibility of assuring that irrigation systems damaged by the activities permitted hereunder are restored to their proper operating condition and that areas of settling and slumping in GRANTOR's fields and pastures, caused by the activities permitted hereunder, are permanently restored to field grade.

J. Except as otherwise provided herein, GRANTEE shall maintain current as-built drawings for the pipeline and all of its surface and subsurface facilities located within the Easement Area and shall provide GRANTOR with copies of such drawings each time they are updated.

K. GRANTEE shall take all necessary precautions, in conducting its activities under this Agreement, to prevent brush and grass fires.

3. TERM OF AGREEMENT. Unless terminated or canceled prior thereto in the manner provided for herein, the term of this Agreement shall be a period of one (1) year from the effective date hereof, and shall continue so long as GRANTEE continues to use and maintain the pipeline and associated facilities in the Easement Area without interruption for more than one hundred eighty (180) consecutive days, at which time GRANTOR will have the option of terminating this Agreement as provided in Paragraph 9B.

4. PAYMENTS. GRANTEE shall pay to GRANTOR a payment in the amount of five thousand dollars ($5,000) upon execution of this agreement. An annual payment, as hereinafter described, shall be made by GRANTEE to GRANTOR on or before each anniversary date of this Agreement, at the address first set forth below in this Section 4. The first of such annual payments shall be in the amount of five thousand two hundred fifty dollars ($5,250). Said annual payment shall thereafter increase by Five percent (5%) each year. No payment shall be deemed made by GRANTEE under this Agreement until the correct amount due is actually received by GRANTOR.

All payments to GRANTOR hereunder shall be made by GRANTEE's check, mailed postage prepaid, to GRANTOR at Chevron Shale Oil Company, P.O. Box 840659, Dallas, TX 75284-0659, which shall continue as the depository for payments hereunder regardless of changes in ownership of the Easement Area, until such time as Grantee is notified, in writing, of a change of corporate name, identity and/or address of GRANTOR. Said payment shall reference this Agreement's QLS number as found at the top of page one of this Agreement.

5. USE OF EASEMENT AREA.

A. All activities permitted under this Agreement shall be performed and conducted in a careful, safe, and workmanlike manner, and in such manner as will not interfere with GRANTOR's and GRANTOR's lessees', licensees', and permitees' exploration, mining, oil shale, oil and gas, farming, ranching, land development and/or other operations on other lands in the vicinity of the Easement Area. Prior to exercising any rights granted hereunder, GRANTEE shall give notice of GRANTEE's planned construction activities to all persons holding any rights, licenses, permits, easements or leases to use the surface of the Easement Area and lands used for access thereto.

B. All activities permitted pursuant to this Agreement shall be performed by or under the direction of GRANTEE, and GRANTEE shall not permit, unless otherwise authorized by GRANTOR, public easements, public facilities, or public roads over or under the Easement Area.

C. GRANTEE shall keep the pipeline and associated facilities in a good and safe condition and, after doing any work which disturbs the surface of the Easement Area, GRANTEE shall restore the surface of the Easement Area to as good a condition as existed prior to such work.

D. Notwithstanding that GRANTEE may have obtained GRANTOR's approval under this Agreement to make various uses of the Easement Area, GRANTEE's operations shall be subordinate to GRANTOR's right to conduct shale oil operations on the Easement Area at any time in the future. If GRANTOR determines in its reasonable discretion that GRANTEE's operations will interfere with GRANTOR's shale oil operations, GRANTEE agrees to change, cease or relocate its operations in order to eliminate the interference. Costs incurred prior to January 1, 2018 in connection with the relocation of GRANTEE's pipeline, valve terminals, gathering systems and other related facilities in order to eliminate interference shall be borne by GRANTOR. Effective January 1, 2018 and thereafter, GRANTEE agrees to change, cease or relocate its operations at its sole risk and cost, in order to eliminate any interference and GRANTOR shall have no obligation to compensate GRANTEE for lost production or for the costs and expenses of relocating or ceasing operations resulting from such elimination of interference.

6. INDEMNIFICATION. GRANTEE AGREES TO PROTECT, DEFEND, INDEMNIFY AND HOLD GRANTOR AND ALL OF GRANTOR'S AFFILIATED AND PARENT AND SUBSIDIARY COMPANIES, JOINT VENTURERS AND PARTNERS, AND ALL OF THE AFORESAID ENTITIES' OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES, AGENTS, INVITEES AND INSURERS ("INDEMNITEES") HARMLESS, FROM AND AGAINST ANY AND ALL LIABILITY, LOSS, DAMAGE, INJURY, COSTS (INCLUDING ATTORNEY FEES), EXPENSES, FINES, CLAIMS, DEMANDS AND CAUSES OF ACTION ARISING OUT OF, OR IN ANY WAY CONNECTED WITH GRANTEE'S ACTIVITIES OR OPERATIONS UNDER THIS AGREEMENT, FOR INJURY TO OR ILLNESS OR DEATH OF ANY PERSON (INCLUDING BUT NOT LIMITED TO AN INDEMNITEE OR AN EMPLOYEE OR AGENT OF GRANTEE OR GRANTEE'S CONTRACTORS OR SUBCONTRACTORS OR ANY THIRD PARTY) OR FOR LOSS OF OR DAMAGE TO PROPERTY (INCLUDING BUT NOT LIMITED TO PROPERTY OF INDEMNITEES, GRANTEE, GRANTEE'S CONTRACTORS OR SUBCONTRACTORS OR ANY THIRD PARTY) OR FOR VIOLATION OF ANY FEDERAL, STATE OR LOCAL LAWS, RULES, REGULATIONS, AND ORDERS INCLUDING BUT NOT LIMITED TO CERCLA AND RCRA. SUCH INDEMNITY SHALL APPLY EVEN IN THE EVENT OF AN INDEMNITEE'S OWN NEGLIGENCE, WHETHER SUCH NEGLIGENCE IS SOLE, COMPARATIVE, CONTRIBUTORY, CONCURRENT, ACTIVE, OR PASSIVE, AND REGARDLESS OF WHETHER LIABILITY WITHOUT FAULT IS IMPOSED OR SOUGHT TO BE IMPOSED ON ONE OR MORE OF THE INDEMNITEES. THIS INDEMNITY SHALL NOT APPLY TO THE EXTENT THAT IT IS VOID OR OTHERWISE UNENFORCEABLE UNDER APPLICABLE LAW.

7. GRANTEE INSURANCE REQUIREMENT. Without in any way limiting GRANTEE's liability under this Agreement, GRANTEE shall maintain, during the term of this Agreement, the following insurance with companies and on terms satisfactory to GRANTOR:

A. Worker's Compensation and Employers' Liability Insurance as prescribed by applicable law. The limit of liability for Employers' Liability Insurance shall not be less than $1,000,000 per occurrence.

B. Comprehensive or Commercial General Liability Insurance (Bodily Injury and Property Damage), including the following supplementary coverages: Contractual Liability to cover liability assumed by GRANTEE under this Agreement; Product and

Completed Operations Liability Insurance; Broad Form Property Damage Liability Insurance; and coverage for Explosion, Collapse and Underground Hazards. The limit of liability for such insurance shall not be less than $1,000,000 per occurrence.

C. Automobile Bodily Injury and Property Damage Liability Insurance. Such insurance shall extend to owned, non-owned and hired automobiles used in the performance of this Agreement. The limits of liability of such insurance shall not be less than $1,000,000 per person/ $1,000,000 per occurrence for bodily injury and $1,000,000 per occurrence for property damage.

The insurance specified in this Section Seven shall contain a waiver of subrogation in favor of Indemnitees, and shall name GRANTOR as an additional insured with respect to the activities performed pursuant to this Agreement. In addition, said insurance shall include a requirement that the insurer provide GRANTOR with 30-days' written notice prior to the effective date of any cancellation or material change of the insurance.

PRIOR TO HAVING ANY RIGHT TO ACCESS THE LANDS SUBJECT HERETO OR EXERCISING ANY OF THE RIGHTS GRANTED IN THIS AGREEMENT, GRANTEE MUST FURNISH GRANTOR WITH COPIES OF THE INSURANCE POLICIES OR CERTIFICATES OF SAID INSURANCE PROVIDING THE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN.

All insurance policies or certificates of insurance provided to GRANTOR shall be in a form acceptable to GRANTOR, shall reference this Agreement's QLS number as found at the top of page one of this Agreement and shall be provided to GRANTOR prior to GRANTEE exercising any of the rights granted herein.

8. TAXES, LIENS AND ENCUMBRANCES. GRANTEE agrees to pay promptly and before delinquency all taxes and assessments levied or assessed upon or against the Easement Area during the term hereof, by reason of, or resulting from GRANTEE's activities under this Agreement in relation to the pipelines and associated facilities, and to reimburse GRANTOR for any increase in taxes paid by GRANTOR resulting from the value of such pipelines and associated facilities, whether or not separately assessed. GRANTEE shall pay all taxes levied or assessed upon or against GRANTEE's pipelines and associated facilities and operations on the Easement Area.

9. TERMINATION.

A. In the event of any default by GRANTEE in its obligations hereunder, GRANTOR may deliver to GRANTEE written notice specifying the default. If the default remains uncorrected for a period of thirty (30) days after delivery of the notice, this Agreement shall then terminate subject to the provisions herein concerning site reclamation and facility removal and subject to liabilities accrued prior to termination. GRANTOR'S right to terminate this Agreement when GRANTEE has not corrected a default within thirty (30) days, shall be a continuing right of GRANTOR for the life of this Agreement. If this Agreement is terminated under this provision, said termination shall be effective the date the notice of same is placed in the mail addressed to GRANTEE.

B. If, at any time after GRANTEE begins construction of the pipelines, GRANTEE fails to use the Easement Area or any part thereof for the purposes provided hereunder for more than one hundred eighty (180) consecutive days, GRANTOR may terminate this Agreement as to those parts of the Easement Area no longer used as above, by written notice to GRANTEE, subject to the provisions herein concerning site reclamation and facility removal and subject to liabilities accrued prior to termination. At such time as GRANTEE has reached the one hundred and eighty (180) day threshold, GRANTEE must deliver notice of the nonuse to GRANTOR within one (1) month of said threshold date. If GRANTEE fails to deliver said notice of nonuse to GRANTOR within the specified one (1) month time period, then this Agreement shall automatically terminate.

C. Upon any termination of this Agreement as to all or any part of the Easement Area, and unless otherwise approved by GRANTOR, GRANTEE shall dig up and remove its

pipelines and associated facilities. GRANTEE shall have a period of six (6) months from and after the effective date of termination in which to remove the pipelines and all of its associated facilities from the Easement Area or from the part thereof as to which the termination applies. Upon such removal, GRANTEE shall place the Easement Area in a neat, safe and orderly condition.

D. Upon termination of the rights herein given, GRANTEE shall execute and deliver to GRANTOR, within thirty (30) days after written demand therefore, a good and sufficient quit claim deed to all interest of GRANTEE in the Easement Area so terminated. Should GRANTEE fail or refuse to deliver to GRANTOR such quit claim deed, or if GRANTOR after a good faith effort to locate GRANTEE is unable to locate GRANTEE, then a written notice by GRANTOR, duly recorded, reciting the failure or refusal of GRANTEE to execute and deliver said quit claim deed, or inability to locate GRANTEE, as herein provided, shall after ten (10) days from the date of recordation of said notice, be conclusive evidence against GRANTEE and all persons claiming under GRANTEE of the termination of this Agreement or a portion thereof and all interest of GRANTEE hereunder as to that portion, subject to GRANTEE's obligation to remove its property within six (6) months of such termination.

E. Termination shall not operate to extinguish any obligations of GRANTEE which have accrued at the time of termination, or which accrue hereunder upon termination.

10. TRANSFER OF INTEREST. The rights granted to GRANTEE under this Agreement shall not be assigned or otherwise transferred without the prior written consent of GRANTOR. Subject to the foregoing, all of the terms, covenants, and conditions of this Agreement shall be binding upon the successors and assigns of the parties.

11. WAIVER CLAUSE. The failure of either party to enforce, at any time, any of the provisions of this Agreement, or to exercise any option which is herein provided, or to require at any time, performance by the other party of any of the provisions hereof, shall in no way be construed to be a waiver of such provision, nor in any way affect the validity of this Agreement or any part thereof, or the right of a party to thereafter enforce each and every such provision.

12. APPLICABLE LAW. This Agreement and the exhibits hereto shall be governed as to validity, enforcement, construction, effect, and in all other respects, by the law of the State of Colorado, and its courts shall have jurisdiction to enforce this Agreement.

13. ATTORNEYS' FEES. In the event of a default by either party in the performance of its duties, the court with the proper jurisdiction to resolve the dispute shall award reasonable attorney fees and costs to the successful party or in such other manner as the court deems appropriate.

14. NOTICES. Any notices required or permitted under this Agreement shall be given in writing. The notice shall be served either personally or by registered or certified mail with return receipt requested. Service shall be effective when received. All notices hereunder shall be directed to the addresses set forth below or such substitute address or addresses as provided to the parties at least thirty (30) days in advance of any notice. Present addresses to which notices shall be sent in accordance with the provisions of this section are:

GRANTOR: Chevron Shale Oil Company
Attn: Manager, Shale Oil Development
11111 S. Wilcrest Dr.
Houston, TX 77099

GRANTEE: Williams Field Services LLC
Attn: Land Manager
1515 Arapahoe St. Tower 3, Suite 1000
Denver, CO, 80202

15. CONFLICT OF INTEREST. No director, employee, or agent of either party will give to or receive from any director, employee, or agent of the other party any commission, fee, rebate, gift, or entertainment of significant cost or value in connection with this Agreement. During the term of this Agreement and for 2 years, thereafter, any mutually agreeable representatives authorized by either party may audit the applicable records of the other party solely for the purpose of determining whether there has been compliance with this paragraph. The provisions of this paragraph will survive termination of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

Chevron Shale Oil Company,
a division of Chevron U.S.A. Inc.

By: C. D. Frisbie
Name: C. D. Frisbie
Its: Attorney-in-Fact

Williams Field Services LLC

By: [signature]
Name: Clayton J. Harris
Its: Attorney in Fact

STATE OF TEXAS §
§
COUNTY OF HARRIS §

The foregoing instrument was acknowledged before me this 11th day of ~~June~~ July, 2007 by C. D. Frisbie as Attorney-in-Fact for Chevron U.S.A. Inc.

My Commission Expires: 9-30-08

Notary Public Elaine J. Graber

ELAINE J. GRABER
Notary Public, State of Texas
My Commission Expires
September 30, 2008

OK/to home
STATE OF ~~COLORADO~~ §
Tx/sd §
COUNTY OF ~~DENVER~~ §

The foregoing instrument was acknowledged before me this 28 day of June, 2007 by Clayton J Harris as Attorney in Fact of Williams Field Services LLC

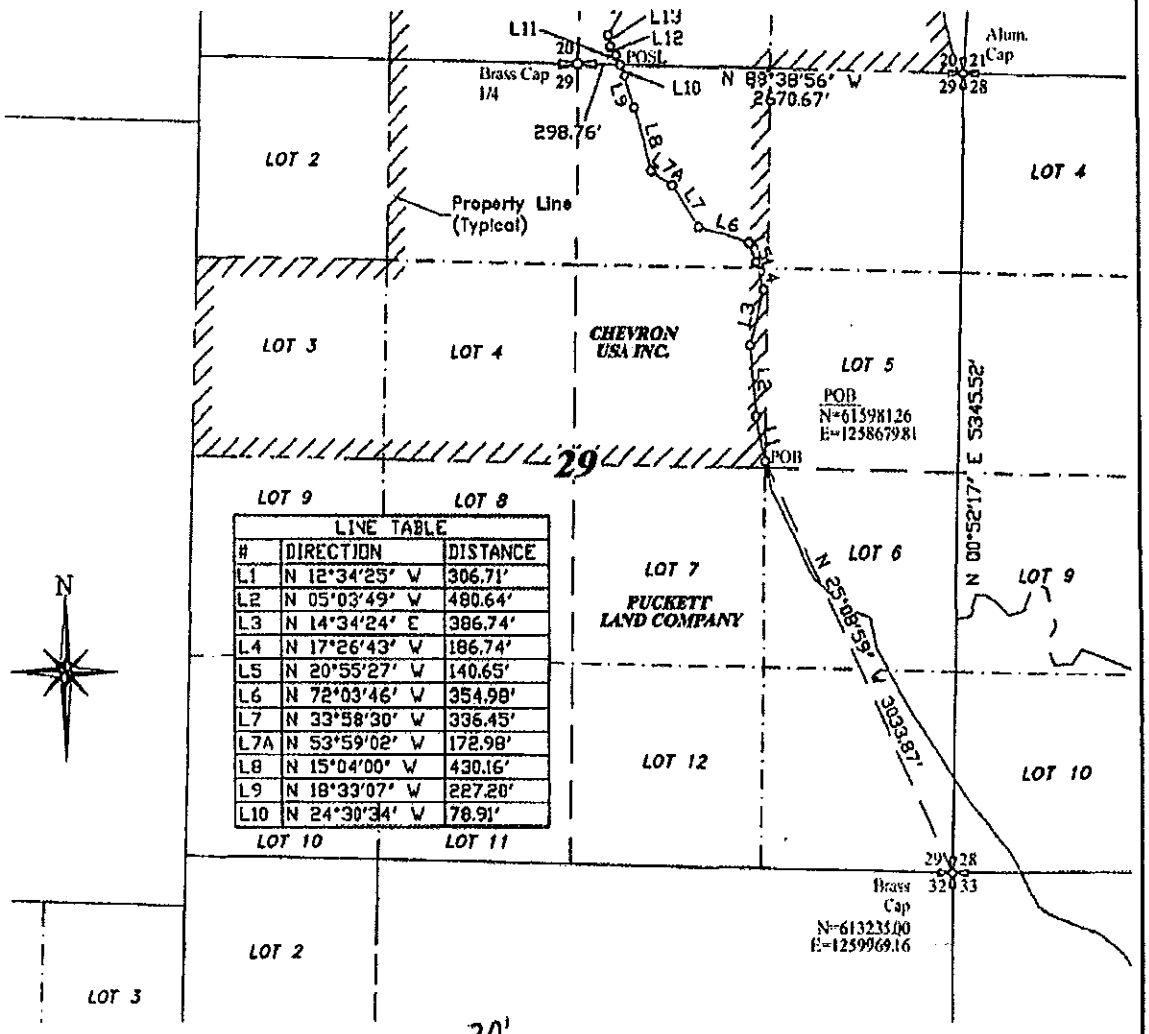
My Commission Expires: 8-22-08

Notary Public Carolyn P. Cahill
CAROLYN R CAHILL

CAROLYN P. CAHILL NOTARY PUBLIC IN AND FOR STATE OF OKLAHOMA TULSA COUNTY

EXHIBIT A (1 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTION 29, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



LINE TABLE		
#	DIRECTION	DISTANCE
L1	N 12°34'25" W	306.71'
L2	N 05°03'49" W	480.64'
L3	N 14°34'24" E	386.74'
L4	N 17°26'43" W	186.74'
L5	N 20°55'27" W	140.65'
L6	N 72°03'46" W	354.98'
L7	N 33°58'30" W	336.45'
L7A	N 53°59'02" W	172.98'
L8	N 15°04'00" W	430.16'
L9	N 18°33'07" W	227.20'
L10	N 24°30'34" W	78.91'

SCALE 1" = 1000'
500' 0 1000'

Total R-O-W Width 20' Feet,
10' Left, 10' Right of Centerline.
28544.08 Feet, 1729.94 Rods, 32.764 Acres.

LEGEND

- FOUND MONUMENT SECTION CORNER
- FOUND MONUMENT PROPERTY OR OTHER CORNER
- FOUND MONUMENT 1/4 OR 1/16 CORNER
- CALCULATED OR PROJECTED CORNER

NOTES:

1.) DRAWING REFERENCED TO NAD27 DATUM-SPCS COC. ALL DISTANCES SHOWN ARE GRID DISTANCES.

2.) APPARENT LANDOWNER INFORMATION SHOWN HEREON BASED UPON GARFIELD COUNTY ASSESSOR OFFICE PARCEL MAP #2171 AND INTERNET RECORDS AS OF 12/07/06. MAP #2135 AND INTERNET RECORDS AS OF 6/07/06.

STATEMENT OF SURVEYOR:

BRIAN L. FORBES STATES HE IS BY OCCUPATION A REGISTERED LAND SURVEYOR EMPLOYED BY WILLIAMS FIELD SERVICES, LLC TO MAKE A SURVEY OF THE CENTERLINE OF A PIPELINE RIGHT-OF-WAY AS DESCRIBED AND SHOWN ON THIS MAP, CONSISTING OF 9 PAGES; THAT THE SURVEY OF SAID WORK WAS MADE UNDER HIS SUPERVISION AND AUTHORITY, COMMENCING FEBRUARY 11, 2007; AND THAT SUCH SURVEY IS ACCURATELY REPRESENTED UPON THIS MAP.

BRIAN L. FORBES 25367 REGISTERED LAND SURVEYOR STATE OF COLORADO

5/29/07

REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH	
REVISED: 6/16/07	MULTIPUL REROUTES	BY: KRH	REVISED: 5/27/07 REROUTE IN SECTION 8 BY: KRH

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 382-5028
D.R.G. JOB #-15116

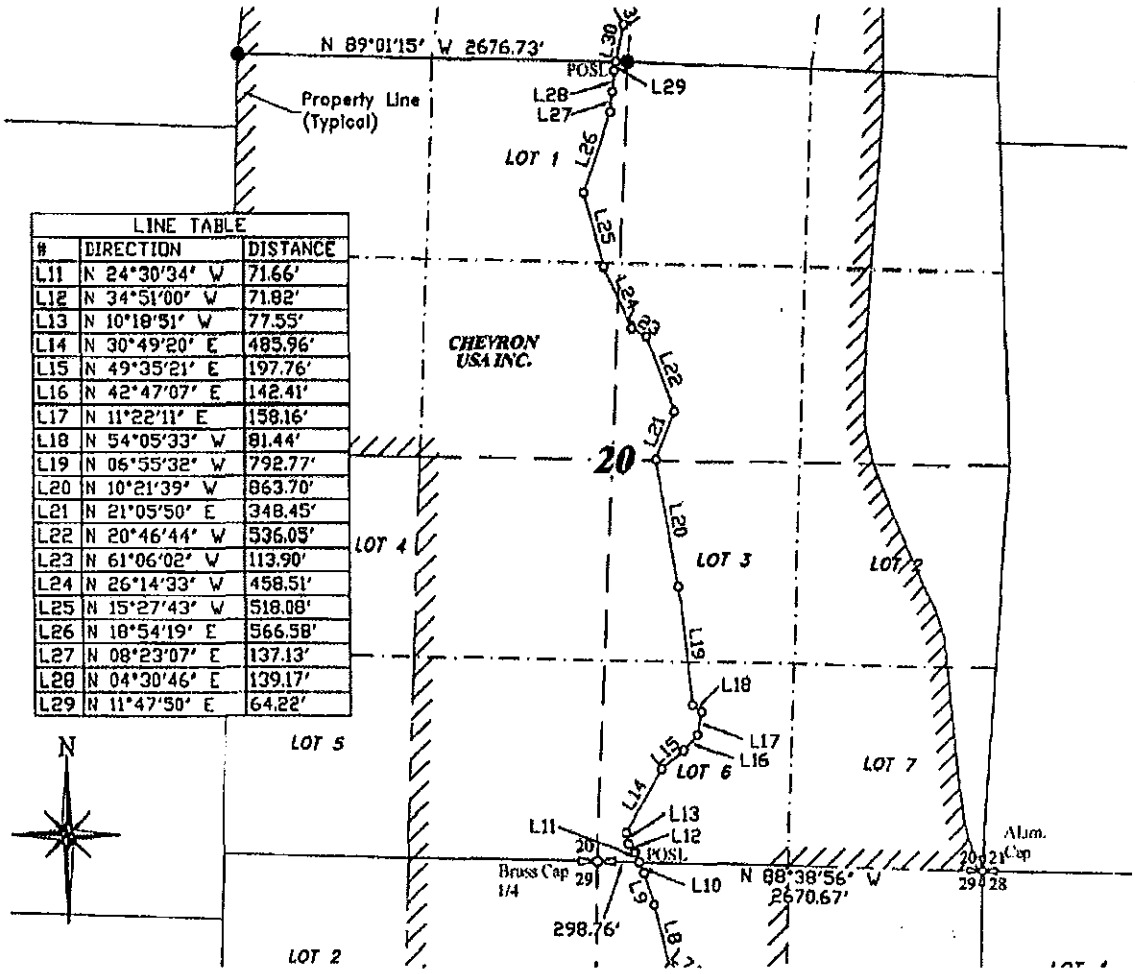
WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04-02-07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 1 OF 9
CHECKED BY: LGB	DATE:	SCALE: 1" = 1000'			

EXHIBIT A (2 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTION 20, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



LINE TABLE		
#	DIRECTION	DISTANCE
L11	N 24°30'34" W	71.66'
L12	N 34°51'00" W	71.82'
L13	N 10°18'51" W	77.55'
L14	N 30°49'20" E	485.96'
L15	N 49°35'21" E	197.76'
L16	N 42°47'07" E	142.41'
L17	N 11°22'11" E	158.16'
L18	N 54°05'33" W	81.44'
L19	N 06°55'32" W	792.77'
L20	N 10°21'39" W	863.70'
L21	N 21°05'50" E	348.45'
L22	N 20°46'44" W	536.05'
L23	N 61°06'02" W	113.90'
L24	N 26°14'33" W	458.51'
L25	N 15°27'43" W	518.08'
L26	N 18°54'19" E	566.58'
L27	N 08°23'07" E	137.13'
L28	N 04°30'46" E	139.17'
L29	N 11°47'50" E	64.22'

REVISED: 5/27/07	REROUTE IN SECTION 8	BY: KRH
REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH
REVISED: 5/18/07	MULTIPUL REROUTES	BY: KRH

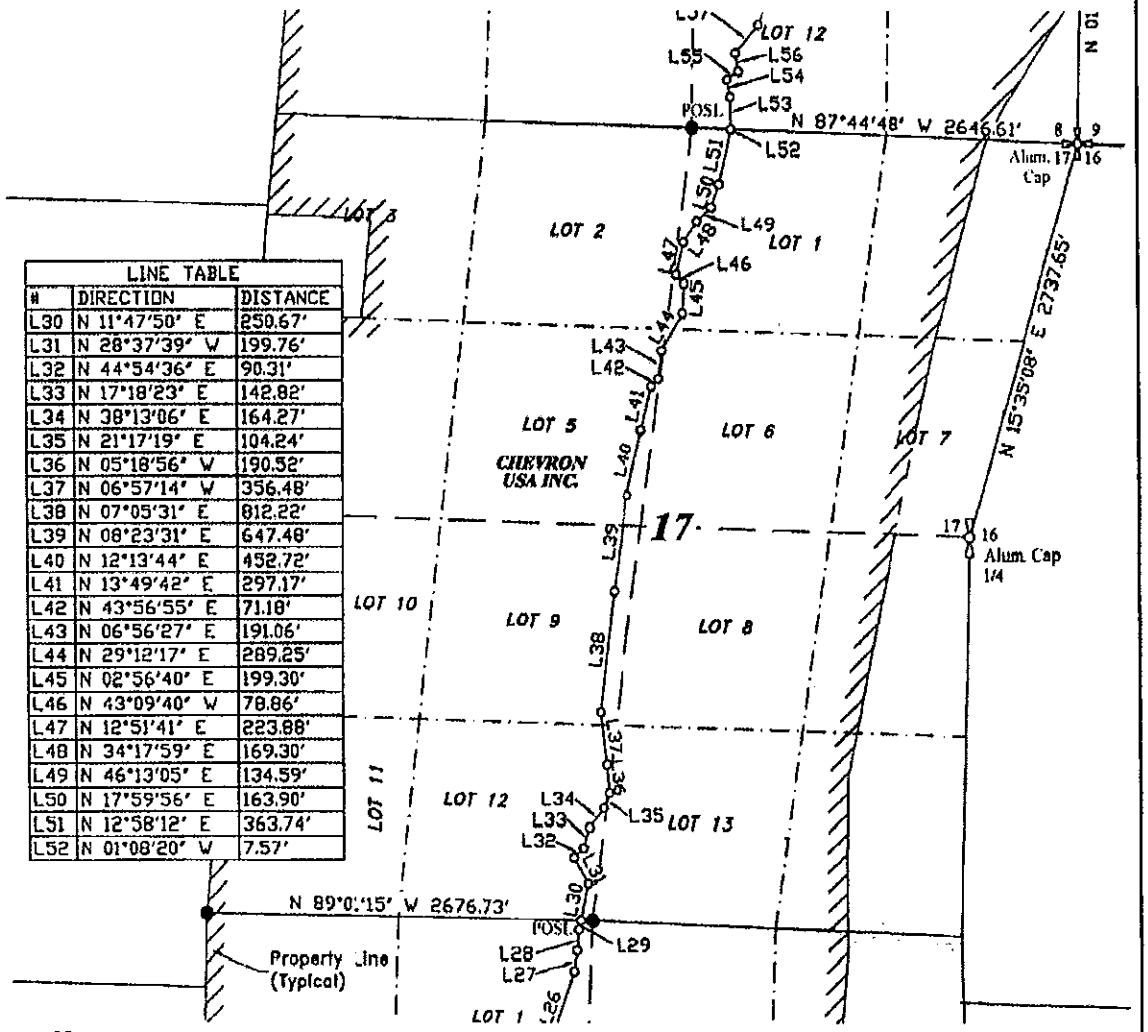
GRIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB #-15116

WILLIAMS FIELD SERVICES, LLC
PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04/02/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 2 OF 9
CHECKED BY: LGB	DATE	SCALE: 1" = 1000'			

EXHIBIT A (3 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTION 17, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



LINE TABLE		
#	DIRECTION	DISTANCE
L30	N 11°47'50" E	250.67'
L31	N 28°37'39" W	199.76'
L32	N 44°54'36" E	90.31'
L33	N 17°18'23" E	142.82'
L34	N 38°13'06" E	164.27'
L35	N 21°17'19" E	104.24'
L36	N 05°18'56" W	190.52'
L37	N 06°57'14" W	356.48'
L38	N 07°05'31" E	612.22'
L39	N 08°23'31" E	647.48'
L40	N 12°13'44" E	452.72'
L41	N 13°49'42" E	297.17'
L42	N 43°56'55" E	71.18'
L43	N 06°56'27" E	191.06'
L44	N 29°12'17" E	289.25'
L45	N 02°56'40" E	199.30'
L46	N 43°09'40" W	78.86'
L47	N 12°51'41" E	223.88'
L48	N 34°17'59" E	169.30'
L49	N 46°13'05" E	134.59'
L50	N 17°59'56" E	163.90'
L51	N 12°58'12" E	363.74'
L52	N 01°08'20" W	7.57'

REVISED: 5/27/07	REROUTE IN SECTION 8	BY: KRH
REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH
REVISED: 5/16/07	MULTIPUL REROUTES	BY: KRH

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 382-5028
D.R.G. JOB #-15116

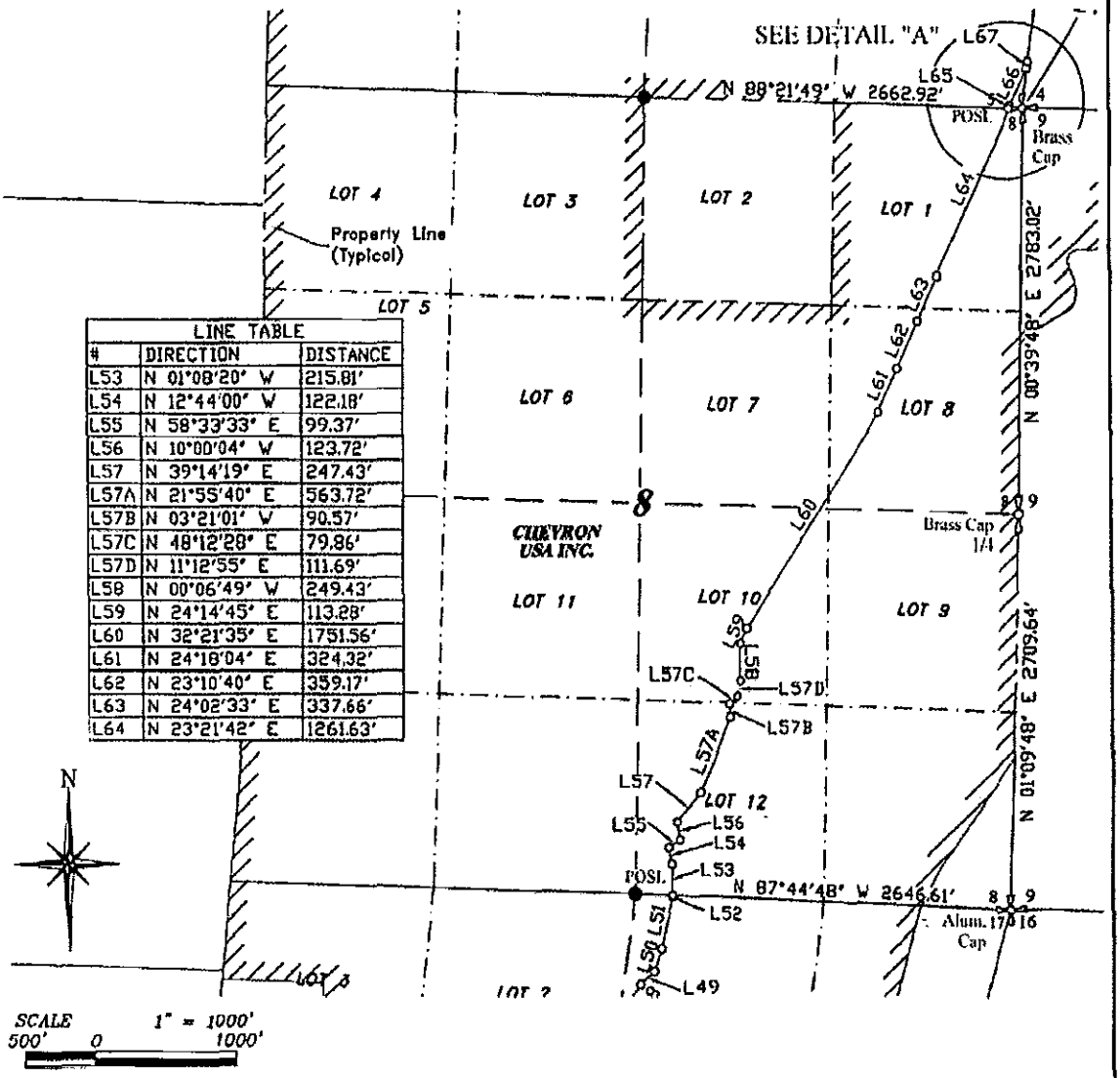
WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04/02/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 3 OF 9
CHECKED BY: LGB	DATE	SCALE: 1" = 1000'			

EXHIBIT A (4 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTION 8, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



LINE TABLE		
#	DIRECTION	DISTANCE
L53	N 01°08'20" W	215.81'
L54	N 12°44'00" W	122.18'
L55	N 58°33'33" E	99.37'
L56	N 10°00'04" W	123.72'
L57	N 39°14'19" E	247.43'
L57A	N 21°55'40" E	563.72'
L57B	N 03°21'01" W	90.57'
L57C	N 48°12'28" E	79.86'
L57D	N 11°12'55" E	111.69'
L58	N 00°06'49" W	249.43'
L59	N 24°14'45" E	113.28'
L60	N 32°21'35" E	1751.56'
L61	N 24°18'04" E	324.32'
L62	N 23°10'40" E	359.17'
L63	N 24°02'33" E	337.66'
L64	N 23°21'42" E	1261.63'

REVISED 6/27/07	REROUTE IN SECTION 8	BY: KRH
REVISED 6/21/07	REROUTE IN SECTION 29	BY: KRH
REVISED 5/15/07	MULTIPUL REROUTES	BY: KRH

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB #-15116

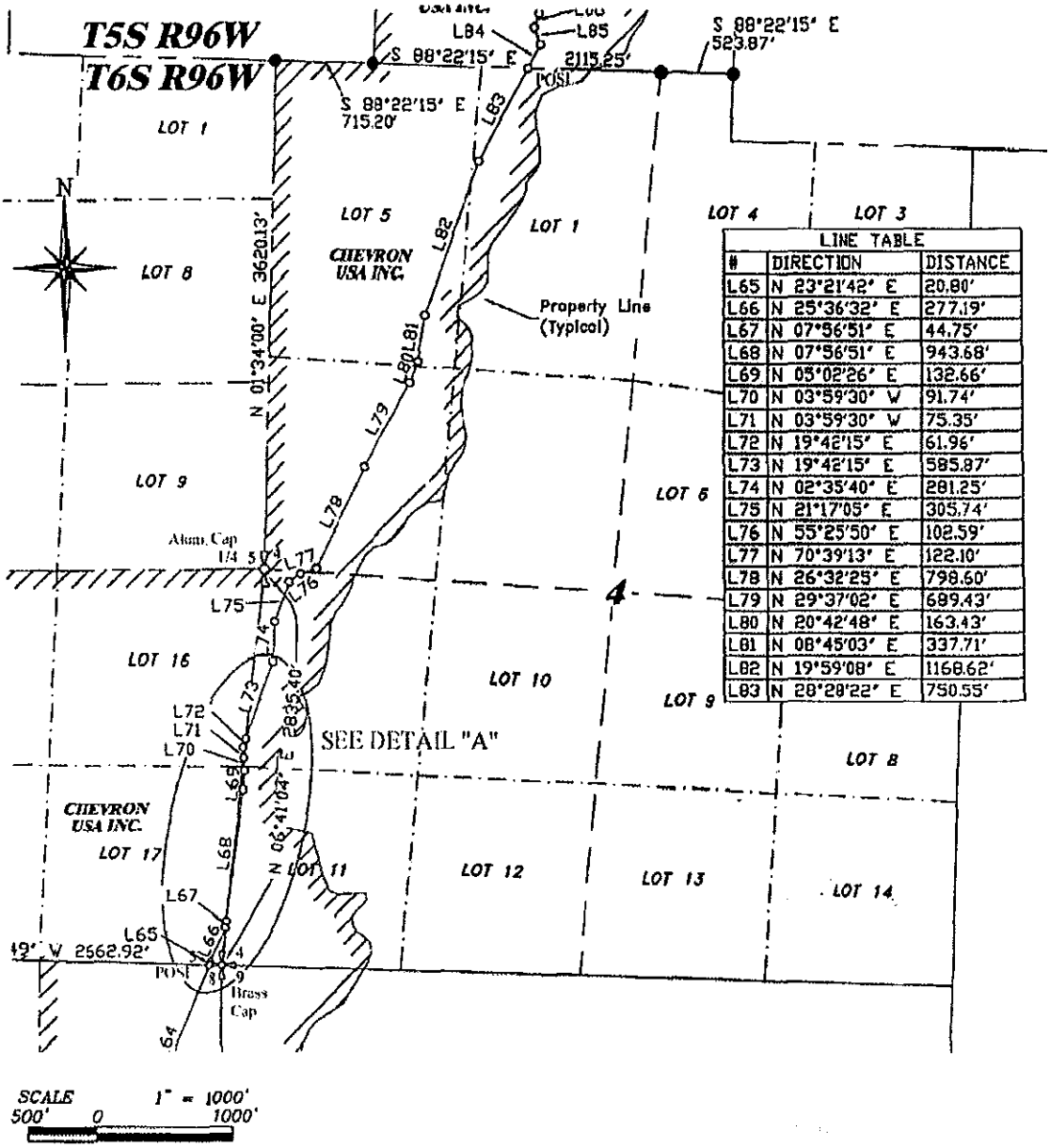
WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04/02/07	APPROVED BY: LGB	DATE	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 4 OF 9
CHECKED BY: LGB	DATE	SCALE: 1" = 1000'			

EXHIBIT A (5 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTIONS 4 & 5, TOWNSHIP 6 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



LINE TABLE		
#	DIRECTION	DISTANCE
L65	N 23°21'42" E	20.80'
L66	N 25°36'32" E	277.19'
L67	N 07°56'51" E	44.75'
L68	N 07°56'51" E	943.68'
L69	N 05°02'26" E	132.66'
L70	N 03°59'30" W	91.74'
L71	N 03°59'30" W	75.35'
L72	N 19°42'15" E	61.96'
L73	N 19°42'15" E	585.87'
L74	N 02°35'40" E	281.25'
L75	N 21°17'05" E	305.74'
L76	N 55°25'50" E	102.59'
L77	N 70°39'13" E	122.10'
L78	N 26°32'25" E	798.60'
L79	N 29°37'02" E	699.43'
L80	N 20°42'48" E	163.43'
L81	N 08°45'03" E	337.71'
L82	N 19°59'08" E	1168.62'
L83	N 28°28'22" E	750.55'

REVISED: 5/27/07	REROUTE IN SECTION 8	BY: KRH
REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH
REVISED: 5/16/07	MULTIPUL REROUTES	BY: KRH

DRIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB #-15116

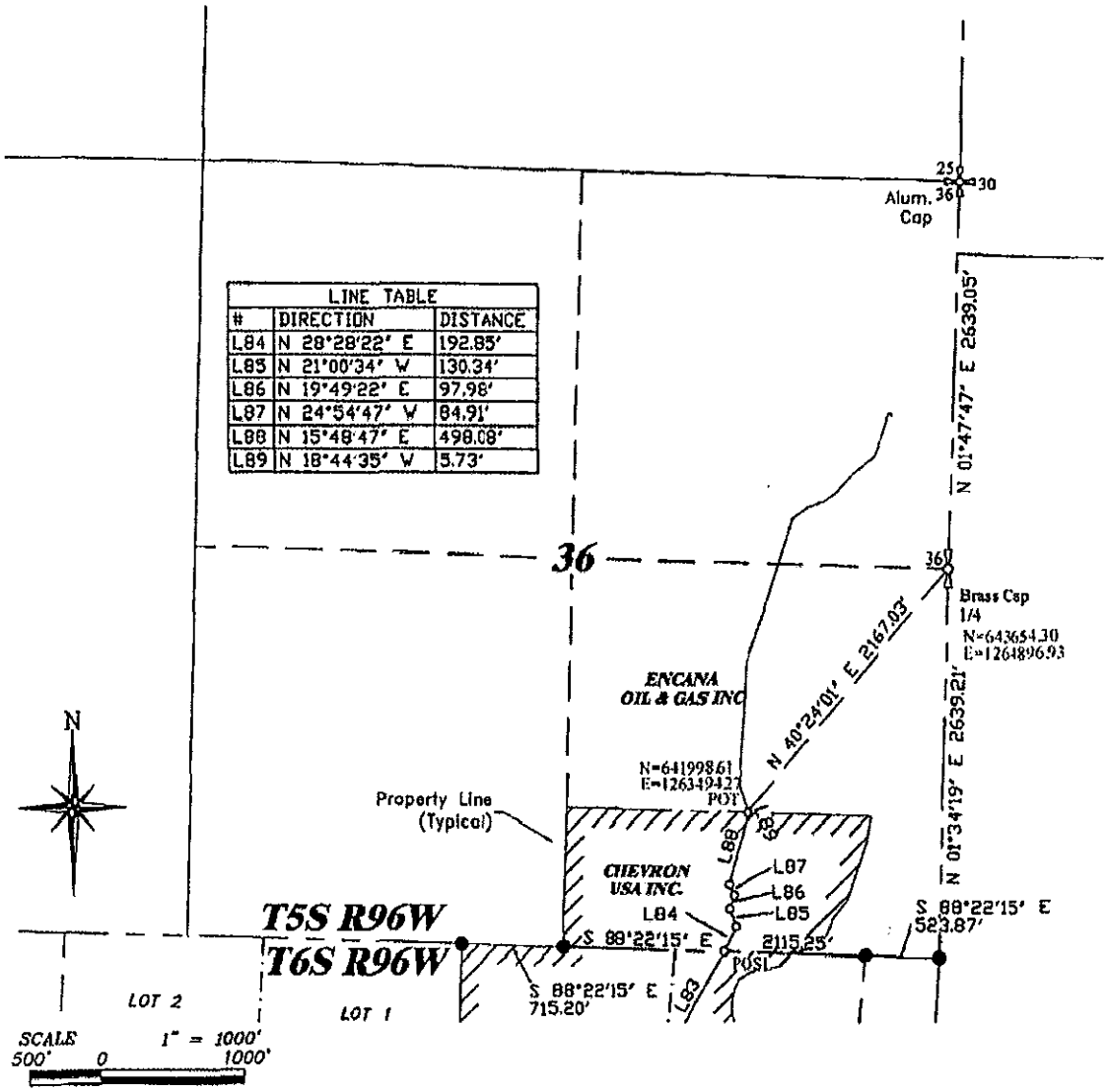
WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04/02/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 5 OF 9
CHECKED BY: LGB	DATE	SCALE: 1" = 1000'			

EXHIBIT A (6 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTION 36, TOWNSHIP 5 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



LINE TABLE		
#	DIRECTION	DISTANCE
L84	N 28°28'22" E	192.85'
L85	N 21°00'34" W	130.34'
L86	N 19°49'22" E	97.98'
L87	N 24°54'47" W	84.91'
L88	N 15°48'47" E	498.08'
L89	N 18°44'35" W	5.73'

REVISED: 5/27/07	REROUTE IN SECTION 8	BY: KRH
REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH
REVISED: 5/16/07	MULTIPUL REROUTES	BY: KRH

D.R.G. RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB # 15116

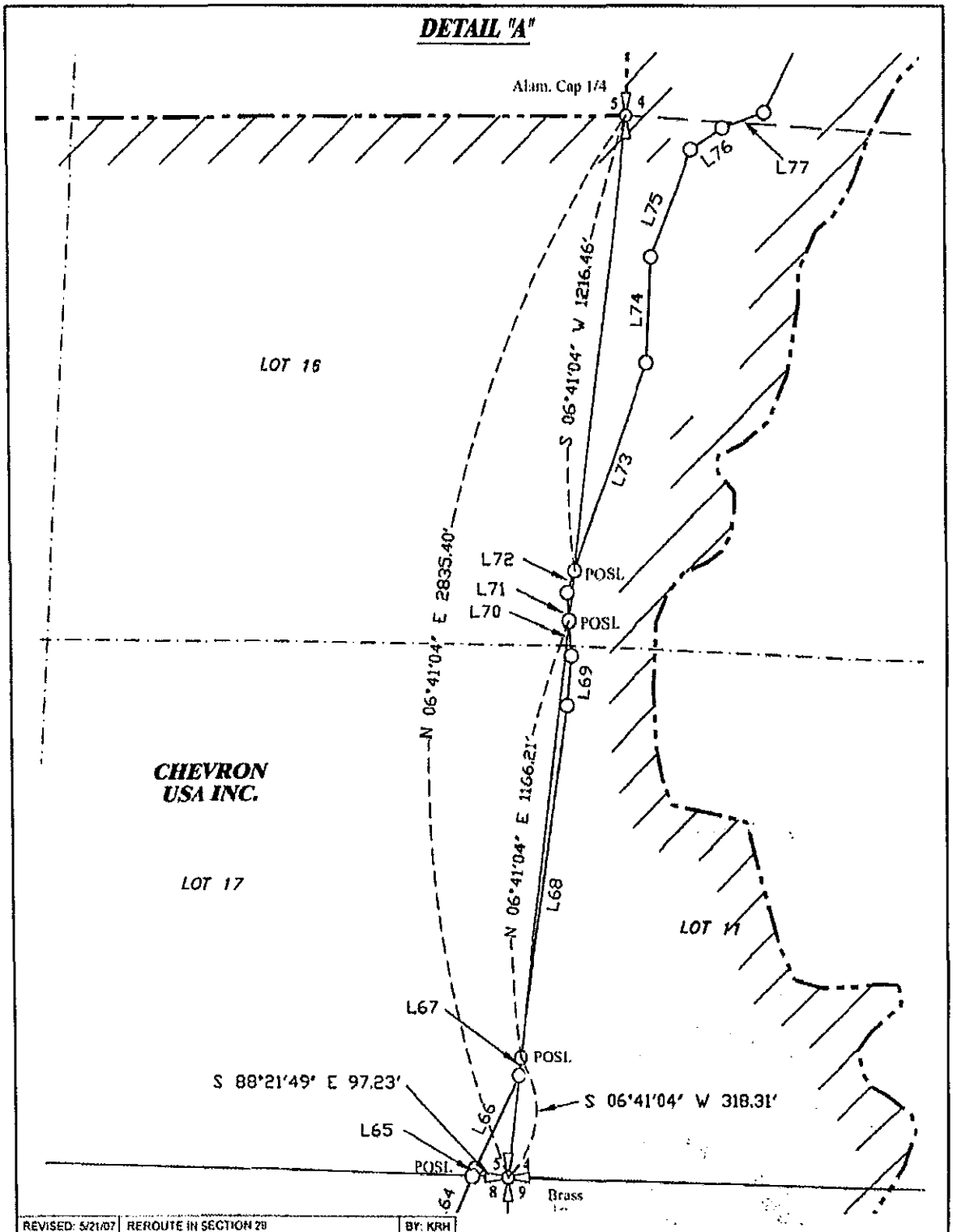
WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04/02/07	APPROVED BY: LGB	DATE	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 6 OF 9
CHECKED BY: LGB	DATE	SCALE: 1" = 1000'			

EXHIBIT A (7 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

DETAIL "A"



REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH				
REVISED: 5/16/07	MULTIPUL REROUTES	BY: KRH	REVISED: 5/27/07	REROUTE IN SECTION 8	BY: KRH	

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB # 15116

WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE 04/02/07	APPROVED BY: LGB	DATE	DRAWING NUMBER 15116-ROW03	EXHIBIT "A" 7 OF 9
CHECKED BY: LGB	DATE	SCALE: N.T.S.			

EXHIBIT A (8 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTIONS 29, 20, 17, 8, 4 & 5, TOWNSHIP 6 SOUTH, RANGE 96 WEST, SECTION 36, TOWNSHIP 5 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO

EASEMENT DESCRIPTION

A 50.00 foot wide permanent easement for pipeline purposes across Sections 29, 20, 17, 8, 4 & 5, Township 6 South, Range 96 West and Section 36, Township 5 South, Range 98 West of the Sixth Principal Meridian, Garfield County, Colorado, said easement being 25.00 feet each side of the following described centerline:

SECTION 29 (3,102.16 feet total)

Commencing at the Southeast Section Corner of said Section 29, being a brass cap, thence North 25°08'59" West, 3033.67 feet to the Point of Beginning and point on or near the East Line of the Southwest Quarter of the Northeast Quarter of said Section 29;
thence North 12°34'25" West, 306.71 Feet;
thence North 05°03'49" West, 480.64 Feet;
thence North 14°34'24" East, 386.74 Feet;
thence North 17°26'43" West, 186.74 Feet;
thence North 20°55'27" West, 140.65 Feet;
thence North 72°03'46" West, 354.98 Feet;
thence North 33°58'30" West, 336.45 Feet;
thence North 53°59'02" West, 172.98 Feet;
thence North 15°04'00" West, 430.16 Feet;
thence North 18°33'07" West, 227.20 Feet,
thence North 24°30'34" West, 78.91 Feet to a point on the North Line of the Northeast Quarter of said Section 29;

Section 20 (5,825.32 feet total)

thence Continuing into Section 20,
thence North 24°30'34" West, 71.66 Feet;
thence North 34°51'00" West, 71.82 Feet;
thence North 10°18'51" West, 77.55 Feet;
thence North 30°49'20" East, 485.98 Feet;
thence North 49°35'21" East, 197.76 Feet;
thence North 42°47'07" East, 142.41 Feet;
thence North 11°22'11" East, 158.16 Feet;
thence North 54°05'33" West, 81.44 Feet,
thence North 06°55'32" West, 792.77 Feet;
thence North 10°21'39" West, 863.70 Feet,
thence North 21°05'50" East, 348.45 Feet;
thence North 20°46'44" West, 536.05 Feet;
thence North 61°06'02" West, 113.90 Feet;
thence North 26°14'33" West, 458.51 Feet;
thence North 15°27'43" West, 518.08 Feet
thence North 18°54'19" East, 566.58 Feet;
thence North 08°23'07" East, 137.13 Feet;
thence North 04°30'46" East, 139.17 Feet;
thence North 11°47'50" East, 64.22 Feet to a point on or near the North Line of the Northwest Quarter of Said Section 20;

Section 17 (5,601.29 feet total)

thence Continuing into Section 17
thence North 11°47'50" East, 250.67 Feet;
thence North 28°37'39" East, 199.76 Feet,
thence North 44°54'36" East, 90.31 Feet;
thence North 17°18'23" East, 142.82 Feet,
thence North 38°13'08" East, 164.27 Feet;
thence North 21°17'19" East, 104.24 Feet;
thence North 05°18'56" West, 190.52 Feet
thence North 06°57'14" West, 356.48 Feet
thence North 07°05'31" East, 812.22 Feet;
thence North 08°23'31" East, 647.48 Feet,
thence North 12°13'44" East, 452.72 Feet,
thence North 13°49'42" East, 297.17 Feet;
thence North 43°56'55" East, 71.18 Feet,
thence North 06°56'27" East, 191.06 Feet;
thence North 29°12'17" East, 289.25 Feet;
Description Continues on Sheet 9 of 9

REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH	REVISED: 6/27/07	REROUTE IN SECTION 8	BY: KRH

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB#–15116

WILLIAMS FIELD SERVICES, LLC
PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04/02/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 8 OF 9
CHECKED BY: LGB	DATE:	SCALE: N/A			

EXHIBIT A (9 of 9)
Attached to and made a part of that certain Grant of
Easement dated _____, _____ by and between
Chevron USA Inc. and Williams Field Services, LLC

SECTIONS 29, 20, 17, 8, 4 & 5, TOWNSHIP 6 SOUTH, RANGE 96 WEST, SECTION 36, TOWNSHIP 5 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO

EASEMENT DESCRIPTION

Description Continued from Sheet 8 of 9

thence North 02°56'40" East, 109.30 Feet;
thence North 43°09'40" East, 78.66 Feet;
thence North 12°51'41" East, 223.88 Feet;
thence North 34°17'59" East, 169.30 Feet;
thence North 46°13'05" East, 134.59 Feet;
thence North 17°59'56" East, 163.90 Feet;
thence North 12°58'12" East, 303.74 Feet;
thence North 01°08'20" West, 7.57 Feet to a point on or near the North Line of the Northeast Quarter of Said Section 17

Section 8 (6,051.40 feet total)

thence Continuing into Section 8;
thence North 01°08'20" West, 215.81 Feet;
thence North 12°44'00" West, 122.18 Feet;
thence North 58°33'33" East, 99.37 Feet;
thence North 10°00'04" West, 123.72 Feet;
thence North 39°14'19" East, 247.43 Feet;
thence North 21°55'40" East, 583.72 Feet;
thence North 03°21'01" West, 90.67 Feet;
thence North 48°12'26" East, 79.66 Feet;
thence North 11°12'55" East, 111.69 Feet;
thence North 60°06'49" West, 249.43 Feet;
thence North 24°14'45" East, 113.28 Feet;
thence North 32°21'35" East, 1751.56 Feet;
thence North 24°18'04" East, 324.32 Feet;
thence North 23°10'40" East, 359.17 Feet;
thence North 24°02'33" East, 337.66 Feet,
thence North 23°21'42" East, 1281.63 Feet to a point on or near the North Line of the Northeast Quarter of Said Section 8;

Sections 5 & 4 (5,954.02 feet total)

thence Continuing into Section 5;
thence North 23°21'42" East, 20.60 Feet;
thence North 25°36'32" East, 277.19 Feet;
thence North 07°56'51" East, 44.75 Feet to a point on the East Line of the Southeast Quarter of Said Section 5;
thence Continuing into Section 4;
thence North 07°56'51" East, 943.68 Feet;
thence North 05°02'26" East, 132.66 Feet;
thence North 03°59'30" West, 91.74 Feet to a point on the West Line of the Southwest Quarter of Said Section 4;
thence Continuing into Section 5,
thence North 03°59'30" West, 75.35 Feet;
thence North 19°42'15" East, 61.96 Feet to a point on the East Line of the Southeast Quarter of Said Section 5;
thence Continuing into Section 4
thence North 19°42'15" East, 585.87 Feet;
thence North 02°35'40" East, 281.25 Feet;
thence North 21°17'05" East, 305.74 Feet;
thence North 55°25'50" East, 102.59 Feet;
thence North 70°39'13" East, 122.10 Feet;
thence North 26°32'25" East, 798.60 Feet;
thence North 29°37'02" East, 689.43 Feet;
thence North 20°42'43" East, 163.43 Feet;
thence North 08°45'03" East, 337.71 Feet;
thence North 19°59'08" East, 1168.62 Feet;
thence North 28°28'22" East, 750.55 Feet to a point on or near the North of the Northwest Quarter of Said Section 4;

Section 36 1,009.89 feet total)

thence Continuing into Section 36;
thence North 28°28'22" East, 192.85 Feet;
thence North 21°00'34" West, 130.34 Feet;
thence North 19°49'22" East, 97.98 Feet;
thence North 24°54'47" West, 84.01 Feet;
thence North 15°45'47" East, 498.08 Feet;
thence North 18°44'39" West, 5.73 Feet to the Point of Terminus from which the East Quarter Section Corner of said Section 36, being a brass cap, bears North 40°24'01" East, 2167.03 feet and being a point on or near the North Property Line of Chevron USA Inc. Lands.

Said easement is 28,544.38 feet in length and contains 32.764 acres, more or less.

REVISED: 5/21/07	REROUTE IN SECTION 29	BY: KRH	REVISED: 5/27/07	REROUTE IN SECTION 8	BY: KRH

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB # 15116

WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
CHEVRON USA INC.

DRAWN BY: KRH	DATE: 04/02/07	APPROVED BY: LGB	DATE:	DRAWING NUMBER: 15116-ROW03	EXHIBIT "A" 9 OF 9
CHECKED BY: LGB	DATE:	SCALE: N/A			

RIGHT-OF-WAY AND EASEMENT AGREEMENT

STATE OF COLORADO
COUNTY OF GARFIELD

EnCana Oil & Gas (USA) Inc., a Delaware corporation, 370 17th Street, Suite 1700, Denver, CO 80202 ("Grantor" herein), for and in consideration of the sum of ten dollars and other valuable considerations, the receipt and adequacy of which is acknowledged by Grantor, to the Grantor in hand paid by, **Williams Field Services Company, LLC**, One Williams Center, WRC 3-9, Tulsa, OK, 74172,("Grantee" herein) does hereby grant and convey, to said Grantee, its successors and assigns, an easement twenty-five feet (25') in width (being 12.5 feet either side of the centerline described herein) (hereinafter called "Easement") to locate, survey and resurvey, construct, entrench, replace, maintain and operate an eight inch (8") natural gas liquids pipeline, over, under, across and through lands of the Grantor, along the centerline shown by attached Exhibit "A", along with any necessary appurtenances including without limitation valves, cathodic equipment and appurtenances thereto, (said pipeline, valves, cathodic equipment and appurtenances, being hereinafter sometimes collectively called the "Facilities"), and in addition, Grantee shall have the right to use (a) an additional temporary work space during the construction, maintenance, repair, replacement and removal of the Facilities or any part thereof, which shall be an additional width of fifty feet (50') along the easterly border of said 25' permanent easement; and (b) additional temporary work space adjacent to and along the permanent easement as may be necessary to safely construct the Facilities in extended areas of uneven terrain; and (c) Grantee agrees to bore under any existing pipelines, maintaining a three (3) foot minimum clearance.

The grant of this Right-of-Way and Easement shall in no way hinder, prevent or interfere with Grantor's current or future natural gas development operations on this or adjoining property. This line is for the sole purpose of transporting natural gas liquids over, across, under and through the land along the line designated by survey of the proposed route attached hereto as Exhibit "A". Upon completion of construction, Grantee shall furnish to Grantor a reasonable "as-built" survey description of the Facilities, to which all provisions of this agreement shall then apply.

Grantee shall notify Grantor at least three (3) days prior to commencing or allowing any construction, maintenance, repair, replacement or removal within the specified Easement.

Grantee shall conduct the construction, inspection, repairs and maintenance in a manner that will cause the least practicable damage and inconvenience to Grantor.

Subject to termination as provided herein, the rights and obligations shall be continuous. Should Grantee or its successors and permitted assigns fail to use the Facilities for the transportation for natural gas liquids for any continuous period of twenty-four months, the rights granted herein to Grantee shall terminate. Grantee may, at any time or from time to time, remove Facilities and upon permanent abandonment or termination as provided herein, shall execute and record a re-conveyance and release. Upon termination Grantee shall restore and reclaim all land included within the Easement affected by Grantee's activities to its equivalent prior condition. Such restoration and reclamation shall

include, but not be limited to, the removal of Facilities located on the surface of the ground, and removal of pipe from the ground if requested by Grantor.

If in the sole opinion of Grantor such Easement, including any Facilities, or the operations of the Grantee thereon, interferes with any present or reasonably near-term operations of Grantor or any related company, upon request by Grantor, Grantee agrees to relocate such Easement including any related Facilities to a location on nearby lands of Grantor mutually agreeable to Grantee and Grantor. Grantee retains the right to relocate to other lands not owned by Grantor. If such Easement is relocated to lands owned by Grantor then such easement shall exist under the same terms as this agreement. Any relocation to other lands of the Grantor shall be completed within 180 days of agreement of a mutually acceptable alternate location, or if Grantee elects to relocate to lands not owned by Grantor, within 180 days of such election. Grantee shall have sixty (60) days from such request of Grantor to make such election. After such relocation, Grantee shall as soon as practicable restore the Easement lands to their condition existing prior to construction of the easement, according to law and the further terms of this agreement. Grantee will provide Grantor at the completion of relocation and end of Grantee's use, a release of that portion of the lands previously occupied and used by Grantee, but not used by Grantee after such relocation. All relocation shall be at the sole risk, cost and expense of Grantee.

The grant of easement provided herein shall be non-exclusive. Grantor reserves the right for itself, its assigns, and subsequent grantees to the use of enjoyment of said Right-of-Way, Easements and Facilities, provided such use shall not unreasonably interfere with Grantee's rights hereunder, including the right to have Grantor's or its assigns' facilities cross through the Easement in such a manner which shall not unreasonably interfere with Grantee's then existing use of its Easement.

Whether or not taxes, assessments or public charges are separately assessed against Grantee, it shall pay taxes, assessments or public charges levied or imposed upon its Right-of-Way and Easement or upon other personal property, improvements or fixtures owned or placed by it within the Right-of-Way and Easement subject to its right to contest same, provided that in no event shall Grantee permit its Right-of-Way and Easement to be sold for tax purposes. In the event said taxes, assessments or public charges are not separately assessed, then promptly following written notice from Grantor, Grantee shall reimburse Grantor for any taxes, assessments or public charges attributable to its Right-of-Way and Easement.

Grantee shall keep its Right-of-Way and Easement free and clear of all liens or encumbrances at all times.

Grantee shall mark the location of its Right-of-Way and Easement by suitable markers set on the ground.

Grantee shall construct, operate, and maintain its Easement in a safe, clean, lawful and workmanlike manner and in accordance with accepted industry standards including, but not limited to, the following:

a. No private vehicles will be allowed on Grantor's property.

b. Laydown areas will be subject to Grantor's approval and will be within construction Easement as much as possible.

c. No new roads are to be constructed. Current roads will be maintained and cleaned up, before and after pipeline construction, to Grantor's satisfaction.

d. All applicable permits must be obtained by Grantee in a timely fashion.

e. Following any such construction, Grantee shall rehabilitate the Right-of-Way across the property. Except for that area where pipeline crosses irrigated fields, rehabilitation instructions will be as follows: The slopes shall be graded back to be stable and fertilized, seeded and mulched for revegetation. On the overall pipeline a seed mixture shall be as listed, fertilized as listed and some areas of critical concern shall require mulching.

Seed Mixture Required Per Acre:

Species	Origin	Pounds Pure Live Seed per Acre
Western Wheatgrass	Rosana	4.0
Basin Wildrye	Magnar	2.0
Sideoats	Vaughn	2.0
Alkali Sacaton		1.0

Fertilizer Required Per Acre:
250 bulk pounds 46-0-0

Irrigated fields will be reseeded to match existing established crops. Any agricultural lessee of affected property shall be reimbursed for actual loss of production due to pipeline construction or operations.

f. Grantee shall bury any subsurface Facilities at least to a depth of forty-two (42) inches from finished grade, except in areas in which consolidated rock is encountered. In such consolidated rock, Grantee shall bury any subsurface Facilities at least to a depth of twenty-four (24) inches from finished grade except where such burial is not feasible due to extreme terrain.

g. Grantee shall provide casing for any pipeline within heavy load crossing access routes, as reasonably designated by Grantor, from time to time, or at Grantee's option, shall bury said pipeline to a depth sufficient to accommodate heavy load crossing routes.

h. Grantee shall install a reasonably adequate cathodic protection system upon right of way furnished herein. Such system shall be coordinated with other facility owners' cathodic protection systems for similar facilities.

i. Grantee shall maintain current as-built drawings for subsurface Facilities within the Easement.

j. Should any discharge, leakage, spillage, emission, or pollution of any type occur upon Grantor's lands as a result of Grantee's operations, Grantee, at its expense, shall be obligated to remediate the affected lands to the reasonable satisfaction of Grantor and any governmental body having jurisdiction thereover. **Grantee agrees to indemnify, hold harmless and defend Grantor against all liability, cost, damage or expense (including, without limitation, any fines, penalties, judgments, litigation costs and reasonable attorneys fees, but excluding special, consequential, punitive or exemplary damages awarded to Grantor) incurred by Grantor as a result of any such discharge, spillage, emission or pollution, regardless of whether such liability, cost, damage or expense arises during or after the term of this Agreement, unless such liability, cost or expense is proximately caused by the active negligence of Grantor.**

k. Grantee agrees to obtain and maintain insurance acceptable to Grantor which is primary to any other insurance or self-insurance and which names Grantor as additional insured with respect to liability arising out of Grantee's performance hereunder and includes a Severability of Interest Clause (Cross Liability) which Additional Insured Endorsement shall not exclude or restrict coverage based upon the alleged or actual negligence of the Additional Insured. Such insurance shall at a minimum include:

1. Commercial General Liability Insurance Form or the equivalent with the Amendment Aggregate Limits of Insurance Endorsement CG25031185 covering Grantee's contingent liability, Premises Operations, Completed Operations and Products Liability, Contractual Liability, and if requested by the Grantor, liability arising from explosion, collapse, or underground property damage, all with a minimum combined single limit of $2,000,000 each occurrence, $5,000,000 Aggregate for Bodily Injury and Property Damage including personal injury.

2. Comprehensive Automobile Liability Insurance or Business Auto Policy covering all owned, hired, or otherwise operated non-owned vehicles with a minimum combined single limit of $2,000,000 each occurrence for Bodily Injury and Property Damage.

3. Workers Compensation insurance as required by law, covering all states of operation, and Employers Liability Insurance with a minimum of $1,000,000 each occurrence.

Grantor reserves the right to change its minimum insurance requirements. Before commencement of construction, Grantee shall furnish Grantor with Policies or Certificates of Insurance acceptable to Grantor confirming compliance herewith and providing that no coverage will be canceled or materially changed prior to 30 days advance written notice to Grantor. Subrogation against Grantor shall be waived as respects all of the insurance policies set forth above (including but not limited to policies of any subcontractor). An Alternate Employer Endorsement may be substituted for the Additional Insured Endorsement only with respect to Workers Compensation Insurance and Employer's Liability insurance. The insurance required hereunder in no way limits or restricts Grantee's obligations under the "Indemnity" section below. Further such insurance shall be in no way limited by any limitation expressed in the "Indemnity" section below, nor any limitation placed on the indemnity therein given as a matter of law. No deductible or self-insurance is permitted without written approval of Grantor. If Grantee employs other contractors of subcontractors to perform any work on or related to the Easement, then Grantee agrees to require such contractors and subcontractors to obtain, carry, maintain, and keep in force during the time in which they are engaged in performing any work hereunder, policies of insurance which comply with the requirements as set forth above and to furnish certificates of insurance to Grantee. Contractors and subcontractors must also obtain Waivers of Subrogation from their insurers to the same extent as Grantee, protecting Grantor. Failure to maintain said insurance, as required herein, shall constitute a material breach. Grantee shall be provided written notice of any breach of the insurance requirements set forth in this paragraph, and Grantee shall have ten (10) days to remedy such breach. If Grantee does not remedy the breach with ten (10) days, Grantee's rights to conduct activity shall be suspended until such time as the breach

is remedied. Any failure on the part of Grantor to insist upon strict adherence by Grantee to the insurance requirements hereunder shall in no event be construed to be a waiver of any of said requirements.

l. Grantee agrees to release, protect, defend, indemnify, and hold Grantor, its parent, its subsidiary and/or affiliate companies, and the respective employees, officers, directors, or agents thereof, free and harmless from and against any and all claims, liability, demands, and causes of action of all kinds, including but not limited to claims of damage to or loss of property of Grantor or others, illness or death (herein after "Claims") arising out of Grantee's performance hereunder, whether Grantor is negligent, actively, passively, or not at all, or Grantor is alleged or proven to be absolutely or strictly liable or to have breached any duty or warranty (express or implied) except to the extent such Claims are shown by final judgment to have been caused by the sole active negligence or willful misconduct of Grantor. The insurance requirements herein shall not be construed to limit this indemnity. It shall be effective to the maximum extent permitted by applicable law. Grantee shall be solely responsible for the defense of any and all Claims hereunder including, but not limited to, Claims by any employee of Grantee or any employee of Grantee's subcontractor alleging the willful misconduct or sole active negligence of Grantor. The parties agree that should any court of competent jurisdiction determine that the indemnity required herein exceeds, in extent, scope or amount that which is permitted by applicable law, such indemnity shall be construed, interpreted, and enforced so as to preserve the maximum indemnity which is permitted thereby.

This Right-of-Way and Easement shall be governed by and construed in accordance with the laws of the State of Colorado.

The covenants contained in this Right-of-Way and Easement shall survive any assignment, surrender or termination of the Right-of-Way and Easement, and this Right-of-Way and Easement shall be binding upon the successors and permitted assigns of both parties hereto.

This Right-of-Way and Easement and the rights hereunder shall not be assigned by Grantee without the prior written approval of the Grantor, which approval shall not be unreasonably withheld.

The failure of either party to insist on strict performance of any of the Rights-of-Way and Easements, covenants, terms and conditions hereof shall not be deemed a waiver of any rights or remedies that such party may have for any subsequent breach, default or nonperformance.

Executed on the dates shown in the acknowledgments, but effective for all purposes as of the 17 day of May, 2007.

EnCana Oil & Gas (USA) Inc.

By: _____

Williams Field Services Company, LLC

By: _____

Clayton J. Harris
Attorney-in-Fact of Williams Field Services Company, LLC

COUNTY OF Tulsa)
) ss.
STATE OF OKLAHOMA)

Before me, on this 1ST day of JUNE, 2007, the foregoing instrument was executed by Clayton J. Harris known to me to be the duly authorized Attorney-in-Fact of Williams Field Services Company, LLC, Grantee, and acknowledged said execution to be the signer's free and voluntary act and deed on behalf of said Grantee, for the uses and purposes therein set forth.

Witness my hand and official seal.

CAROLYN P. CATHEY NOTARY PUBLIC IN AND FOR STATE OF OKLAHOMA TULSA COUNTY

Carolyn P. Cathey
Notary Public

My commission expires: 6-22-2008

COUNTY OF Denver)
) ss.
STATE OF COLORADO)

Before me, on this 7th day of June, 2007, the foregoing instrument was executed by Byron R Gale known to me to be the duly authorized Attorney-in-Fact of EnCana Oil & Gas (USA) Inc., Grantor, and acknowledged said execution to be the signer's free and voluntary act and deed on behalf of said Grantor, for the uses and purposes therein set forth.

Witness my hand and official seal.

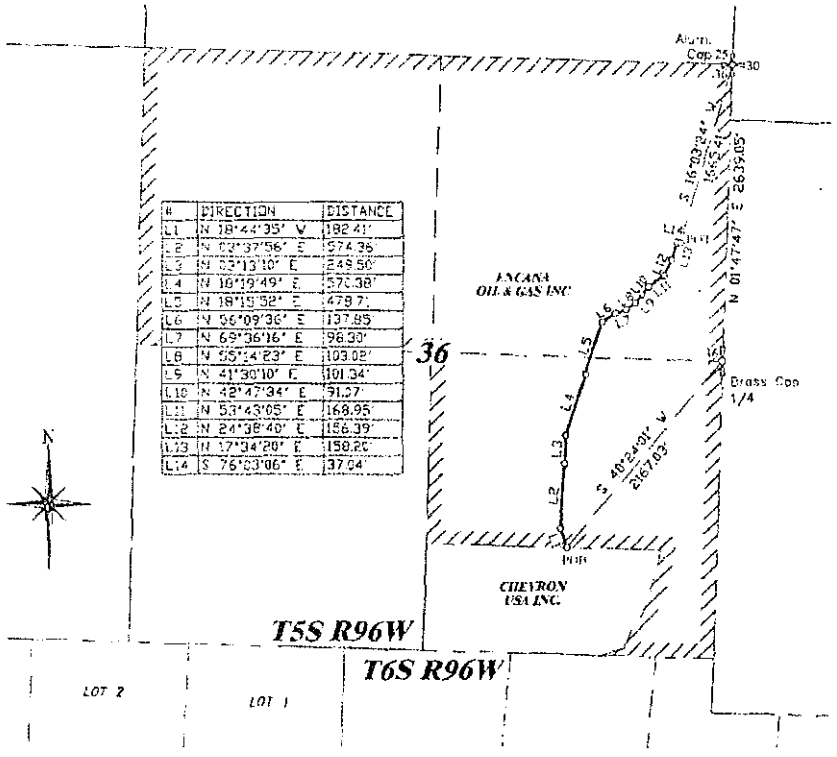
EVE M. MULLANEY NOTARY PUBLIC STATE OF COLORADO

Eve M. Mullaney
Notary Public

My commission expires: 11/10/2009

EXHIBIT A (1 of 2)
Attached to and made a part of that certain Grant of
Easement dated MAY 31 07 by and between
Encana Oil & Gas Inc and Williams Field Services, LLC

SECTION 36, TOWNSHIP 5 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO



	DIRECTION	DISTANCE
L1	N 18°44'35" W	182.41'
L2	N 03°37'56" E	574.36'
L3	N 03°13'10" E	249.50'
L4	N 19°19'49" E	570.38'
L5	N 18°15'52" E	479.7'
L6	N 56°09'36" E	137.85'
L7	N 69°36'16" E	98.30'
L8	N 55°14'23" E	103.08'
L9	N 41°30'10" E	101.34'
L10	N 42°47'34" E	91.27'
L11	N 53°43'05" E	168.95'
L12	N 24°38'40" E	156.39'
L13	N 17°34'28" E	150.20'
L14	S 76°03'06" E	37.04'

SCALE 1" = 1000'
500' 0 1000'

Total R-O-W Width 25 Feet,
12.5' Left, 12.5' Right of Centerline.
2107.52 Feet 186.33 Rods 1.784 Acres

LEGEND

- FOUND MONUMENT SECTION CORNER
- FOUND MONUMENT PROPERTY OR OTHER CORNER
- FOUND MONUMENT 1/4 OR 1/16 CORNER
- CALCULATED OR PROJECTED CORNER

NOTES:

1.) DRAWING REFERENCED TO NAD27 DATUM-EPCS COC. ALL DISTANCES SHOWN ARE GRID DISTANCES.

2.) APPARENT LANDOWNER INFORMATION SHOWN HEREON BASED UPON GARFIELD COUNTY ASSESSOR OFFICE PARCEL MAP & GIS AND INTERNET RECORDS AS OF 6/2/06

STATEMENT OF SURVEYOR:

BRIAN L. FORBES STATES HE IS BY OCCUPATION A REGISTERED LAND SURVEYOR EMPLOYED BY WILLIAMS FIELD SERVICES, LLC TO MAKE A SURVEY OF THE CENTERLINE OF A PIPELINE RIGHT-OF-WAY AS DESCRIBED AND SHOWN ON THIS MAP, CONSISTING OF 2 PAGES; THAT THE SURVEY OF SAID WORK WAS MADE UNDER HIS SUPERVISION AND AUTHORITY, COMMENCING FEBRUARY 11, 2007, AND THAT SUCH SURVEY IS ACCURATELY REPRESENTED UPON THIS MAP.

BRIAN L. FORBES 25367 PLS COLORADO 6/5/07

RIFFIN & ASSOCIATES, INC.
1314 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB#-15116

DRAWN BY: KRC | DATE: 04/20/07 | APPROVED BY: LGB | SHEET
CHECKED BY: LTH | DGN: | SCALE: 1" = 1000'

WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
ENCANA OIL & GAS INC.

DRAWING NUMBER 15116-ROW04

EXHIBIT "A"
1 OF 2

EXHIBIT A (2 of 2)
Attached to and made a part of that certain Grant of Easement dated MAY 31 2007 by and between Encana Oil & Gas Inc. and Williams Field Services LLC

SECTION 36, TOWNSHIP 5 SOUTH, RANGE 96 WEST of the 6th P.M., GARFIELD COUNTY, COLORADO

EASEMENT DESCRIPTION

A 25.00 feet wide permanent easement for pipeline purposes across the East Half of Section 36, Township 5 South, Range 96 West of the Sixth Principal Meridian, Garfield County, Colorado, said easement being 12.50 feet each side of the following described centerline:

Commencing at the East Quarter Section Corner of said Section 36, being a brass cap, thence South 40°24'01" West, 2167.03 feet to the Point of Beginning and a point on or near the South Line of Encana Oil & Gas, Inc. Property,
thence North 18°44'05" West, 102.41 feet, thence North 03°37'55" East, 574.36 feet,
thence North 03°13'10" East, 349.50 feet, thence North 18°19'49" East, 570.38 feet,
thence North 19°15'52" East, 470.71 feet, thence North 56°09'30" East, 137.86 feet,
thence North 69°00'10" East, 96.00 feet, thence North 55°14'23" East, 100.02 feet,
thence North 41°32'10" East, 101.34 feet, thence North 42°47'34" East, 91.07 feet,
thence North 53°43'05" East, 163.95 feet, thence North 24°38'40" East, 156.39 feet,
thence North 17°34'20" East, 155.20 feet, thence South 76°03'06" East, 37.04 feet to the Point of Terminus from which the Northeast Section Corner of said Section 36, being a aluminum cap, bears North 16°03'24" East, 1565.41 feet.

Said easement is 3,107.52 feet in length and contains 1.784 acres, more or less.

REVISED [illegible] REVISED R.O.W.(WETT) BY: KRH

RIFFIN & ASSOCIATES, INC.
1414 ELK STREET, ROCK SPRINGS, WY 82901
PHONE (307) 362-5028
D.R.G. JOB# - 15116

DRAWN BY: KRH | DATE: [illegible] | APPROVED BY: [illegible] | DATE
CHECKED BY: [illegible] | DATE | SCALE: 1" = 1000'

WILLIAMS FIELD SERVICES, LLC

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
A PROPOSED PIPELINE EASEMENT CROSSING LANDS OF
ENCANA OIL & GAS INC.

DRAWING NUMBER: 15116-ROW04 | EXHIBIT "A" 2 OF 2

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 6- Need for Proposed Action 9.07.04 (5)

The 6 inch and 8 inch diameter pipeline is being proposed to provide pipeline transportation of natural gas liquids produced by the Williams Production RMT Co. Parachute Creek Gas Plant to a location 7.2 miles up Parachute Creek. There is an existing 8-inch diameter pipeline at the termination of the 6 inch and 8 inch diameter pipeline that will transfer the natural gas liquids to the Enterprise Product pipeline near Greasewood Colorado in Rio Blanco County, Colorado.

The transportation of these natural gas liquids via pipeline is estimated to remove 20 to 30 daily tanker truck trips from the Garfield County and state road system.

As per the Garfield County Zoning Resolution section 9.07.04, Williams Field Services, Co., LLC is required to apply for a Development Plan Review for Right-of-Way because the proposed pipeline is "greater than 12" in diameter and over two miles in length or any pipeline more than 5 miles in length". The proposed pipeline exceeds the five mile length threshhold.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 7- Regulatory Permit Requirements 9.07.04 (6)

Permit Agency	Permit Needed	Permit Status
Colorado Department of Public Health and Environment- Water Quality Control Division.	CDPS Permits	The Stormwater Management Plans for the pipeline and the Parachute NGL Storage facility are Attached in Tab 22- Construction Management Plan.
Town of Parachute, CO	Watershed District Permit	Application will be submitted in June 2007 Anticipate a hearing and issuance in July 2007. It is possible that the Town of Parachute will rule that this application is "No impact" and thus would not be subject to the Watershed District Permit. The only improvement within the Town of Parachute Watershed District Permit area is the proposed Parachute NGL Storage Facility.

US Army Corp of Engineers	Nationwide Permit 12 for utility activities	The nationwide permit issue has been reviewed by Mr. Maurice Foye of HRL Compliance Solutions, Inc. His letter is attached noting the Nationwide Permit 12 and the specific conditions.
Colorado Air Quality Control Commission	Fugitive dust emissions	The CAQCC filed application is attached.

216 North Ave., Suite 1
Grand Junction, CO 81501
Phone: 970-243-3271
Fax: 970-243-3280

May 16, 2007

Mr. Mike Gettel, P.E.
Senior Engineer Project Manager
Williams Midstream
One Williams Center
Tulsa, Oklahoma 74101-0645

RE: Parachute to Greasewood Express Pipeline
NWP 12 Qualification

Dear Mr. Gettel

HRL Compliance Solutions, Inc. (HCS) was contracted by Williams Midstream (Williams), to establish and document all potential disturbance of Waters of the United States, (as described by the U.S. Army Corps of Engineers definition of Waters of the United States), along approximately 7 miles of the proposed Parachute to Greasewood Express (PGX) pipeline.

In summary, HCS has determined that construction of this line can be covered under Nation Wide Permit 12 (NWP 12), of the 404 section of the Clean Water Act. However; to utilize NWP 12, specific construction practices or BMP's must be implemented. Several of these BMP's are strategies which prevent discharge of sediment into waters of the U.S., and many of these are similar to BMP's covered in the stormwater management plan for this project. Where there is overlap HCS will combine BMP's to eliminate duplication.

Purpose and Scope

The purpose of this analysis is to locate and delineate all waters of the U.S. along the proposed PGX pipeline and determine what is required for compliance of the Clean Water Act. Additionally, establish if the proposed pipeline would qualify for a Nation Wide Permit, eliminating the need for a preconstruction Notification (PCN), and individual permit. The scope of the analysis was to calculate and assess total acreage of disturbance within the proposed pipeline Right of Way.

Established Waters of the United States (404 Locations)

Twelve Waters of the U.S. locations were recorded along the proposed 7 mile stretch. A total of .1215 acres of Waters of the U.S. will be temporarily disturbed and/or filled and 0.0 acres will be permanently filled. Locations are described in Table 1.

Table 1. Waters of the U.S along the proposed PGX pipeline

Type of Waters	Acres Disturbed	Acres Returned	Latitude	Longitude
Perennial Stream	.008	.008	39.48956	108.12321
Ephemeral Drainage	.003	.003	39.49293	108.12649
Ephemeral Drainage	.002	.002	39.49484	108.12774
Ephemeral Drainage	.002	.002	39.49491	108.12777
Ephemeral Drainage	.001	.001	39.49668	108.12820
Ephemeral Drainage	.0005	.0005	39.49813	108.12811
Perennial Stream	.006	.006	39.50359	108.13150
Intermittent Stream	.001	.001	39.51015	108.13148
Ephemeral Drainage	.007	.007	39.51157	108.13172
Perennial Stream	.012	.012	39.53313	108.12978
Ephemeral Drainage	.003	.003	39.54793	108.12129
Perennial Stream	.076	.076	39.57298	108.11150

Total 404 disturbance	0.1215 acres	Total 404 reclamation	0.1215 acres

Conclusion

The PGX pipeline project can utilize a NWP 12 under the following conditions. All identified Waters of the U.S. should be returned to their natural, pre-existing contours and elevation. Sediment discharge will be eliminated as reasonable through the implementation and installation of construction BMP's as set forth by NWP 12 guidelines and the PGX Stormwater Management Plan. All live water crossings will be flumed where applicable preventing waters from altering natural course and will be crossed within one working day.

If HRL Compliance Solutions Inc. can be of any further assistance, please feel free to give us a call.

Sincerely,

HRL Compliance Solutions, Inc.

Maurice Foye
Environmental Scientist

cc: Phil Vaughan, PVCM
John Suchar, HRL Compliance Solutions Inc.
File

Williams

One Williams Center, WRC3-9
Tulsa, OK 74172-0172

June 19, 2007

Mr. Roland Hea
Colorado Department of Public Health and Environment
Air Pollution Control Division
Construction Permit Section
4300 Cherry Creek Drive South, APCD-SS-B1
Denver, CO 80246-1530

Dear Mr. Hea,

Williams Field Services Company, LLC (Williams) is submitting the attached land development Air Pollution Emission Notices (APENs) and fugitive dust control plans as required by Colorado Regulation 1. Williams is planning to install a natural gas liquids pipeline along the routes noted in the attached area map, all of which will be located in Garfield County. There will not be any excavated material hauled away from the disturbed areas. The disturbed area is estimated to be approximately 74 acres for the Parachute Greasewood Express Pipeline, which requires the submittal of the land development APEN and fugitive dust control plan.

The pipeline construction is proposed to begin on August 15, 2007 and is estimated to be complete by November 30, 2007.

The contents of the application are included in the appendices as outlined below, Also enclosed is a $119.96 check for the Filing Fee.

Appendix	Description
A	Permit Application and Land Development APENs
B	Project Area Map
C	Project Specification Record

As the technical contact for this project, I will be available to answer any questions you may have regarding the information contained in this submittal. Please feel free to contact me at 918-573-3268 or by email at michael.gettel2@williams.com.

Sincerely,

Mike Gettel
Williams Field Services Company, LLC
Senior Engineer Project Manager

Enclosure

Appendix A

Permit Application Form
And
Land Development APENs

Air Pollution Control Division Construction Permit Application

PLEASE READ INSTRUCTIONS ON REVERSE SIDE.

1. Permit to be issued to: Williams Field Services Company, LLC
2. Mailing Address: One Williams Center
   P.O. Box 645, WRC 3-9
   Tulsa, OK 74101-0645
3. General Nature of Business: Natural Gas Distribution
   SIC code (if known) 1311
4. Air Pollution Source Description: A pipeline will be installed by construction equipment. The disturbed right-of-way will be reclaimed.
   (List permit numbers if existing source, attach additional pages if needed) Not applicable
   Is this a Portable Unit? No
5. Source Location Address (Include Location Map) If portable, include the initial location and home base location
   Please see the attached mapping.
6. Reason for Application: (Check all that apply)

☒	New or Previously Unreported Source	*Administrative Permit Amendments*	
☐	Modification of Existing Source	☐	Transfer of Ownership (Complete Section 9 & 10 below)
☐	Request for Synthetic Minor Permit	☐	Company Name Change (Complete Section 9 below)
☐	Other:	☐	Other:

7. Projected Startup Date: July 16, 2007 prox.

Signature of Legally Authorized Person of Company listed in Section 1 — Date Signed

Mike Gettel- Senior Engineer Project Manager — Phone: 918-573-3268

Type or Print Name and Official Title of Person Signing Above — Fax: 918-573-9755

8. Check appropriate box if you want:
   - ☒ Copy of preliminary analysis conducted by Division
   - ☒ To review a draft of the permit prior to issuance

These sections are to be completed only if a company name change or transfer of ownership has occurred.

9. Permit previously issued to:
10. Transfer of Ownership Information
    Effective Date of Permit Transfer:

As responsible party for the emission source(s) listed above, I certify that the business associated with this source has been sold, and agree to transfer the permit to said party.

Signature of Legally Authorized Person of Company listed in Section 9 — Date Signed

Phone:

Type or Print Name and Official Title of Person Signing Above — Fax:

Mail completed application, APENs, and filing fee to:

Colorado Department of Public Health and Environment
Air Pollution Control Division
4300 Cherry Creek Drive South, APCD-SS-B1
Denver, Colorado 80246-1530

http://www.cdphe.state.co.us/ap/stationary.html
Phone: (303) 692-3150

INSTRUCTIONS FOR THE COMPLETION OF THE APPLICATION FOR CONSTRUCTION PERMIT OR PERMIT MODIFICATION FORM

The following instructions for the completion of this form are titled, lettered, and numbered the same as the applicable sections of the form on the other side.

ection does not apply, write "N/A": **DO NOT LEAVE BLANK**.

NOTE: All information submitted as part of this permit application and all data generated by the Division as part of processing this permit will be considered open to the public unless confidential treatment is requested in writing. All such materials **MUST** be (1) clearly marked "CONFIDENTIAL" and (2) enclosed in a **separate** sealed envelope marked "CONFIDENTIAL INFORMATION" to ensure against accidental release. Confidentiality is granted only if the release of such information would result in economic disadvantage to the applicant. If confidentiality is requested, the Division will notify you of its decision and, if denied, allow time for you to present additional evidence justifying the need for confidentiality. In general, confidentiality requests will increase permit processing time. Under no circumstances can emissions data be held confidential.

1. **PERMIT ISSUED TO:** List the name of the company (e.g., corporation, partnership, association, individual owner, or governmental agency) to whom the permit is to be issued and who will therefore be responsible for the operation of the source. This company name will be listed on the permit.

2. **MAILING ADDRESS:** This is the address for all correspondence relating to this permit.

3. **GENERAL NATURE OF BUSINESS:** List the business activity (dry cleaner, saw mill, furniture manufacturer, commercial printing, etc.). Also, list the Standard Industrial Classification (S.I.C.) for this type of business activity, if known.

4. **AIR POLLUTION SOURCE DESCRIPTION:** Provide a brief description of the equipment being permitted and the associated emission controls (e.g., concrete batch plant with baghouses, paint booth with particulate filters). If this source has an existing APCD permit(s), please list all applicable permit numbers.

5. **SOURCE ADDRESS:** Do not give a P.O. Box. This is for the physical location of the source. Please include a map that indicates the exact location and shows major topographic features. If the source is portable, include the home base and initial location.

6. **REASON FOR APPLICATION:**

   Modification of Permitted Source – A permit modification may be required for changes in emissions, throughput, equipment, etc.

   Request for Synthetic Minor –A source that is voluntarily applying for a permit to create federally enforceable permit conditions to limit the potential to emit criteria or hazardous air pollutants in order to avoid other requirements. Public comment must be conducted prior to the issuance of any synthetic minor emission permit.

   Administrative Permit Amendments

   Transfer of Ownership – A transfer of ownership is required if equipment previously permitted by another company has been purchased. A merger is considered to be a transfer of ownership. Complete sections 9 & 10 of this form.

   Name Change – A name change is appropriate if only the name on the permit is to be changed, and there is no transfer of ownership. Complete section 9 of this form.

   Other – Any other administrative change as defined in Regulation No. 3, Part A, Section I.B.1.

7. **PROJECTED START-UP DATE:** Construction, operation, or modifications prior to receipt of a permit is prohibited by Colorado Statute.

8. **DRAFT REVIEW REQUEST:** Review requests will usually add to both processing costs and processing time. Any additional time and charges incurred by the Division in providing a draft and correspondence with the applicant will be billed to the applicant. The Division will consider the request an official extension of the processing deadlines specified by the Act. The extension will consist of the number of days elapsed between Division mailing of the draft permit to the applicant and receipt of the applicant's comments by the Division, not to exceed 15 days. However, the Division is not bound to consider any comments received after the 15 day time period lapses, unless both the Division and the applicant agree to a further extension of the processing deadlines.

9. **PERMIT PREVIOUSLY ISSUED TO:** List the name of the company on the most recently issued permit. This section should be completed only if a company name change or transfer of ownership has occurred.

10. **TRANSFER OF OWNERSHP:** This section should be completed by the former owner of the permit. Transfer of the permit(s) conveys to the new owner all responsibility, coverage and liability associated with the permit(s). Submission of a transfer of ownership application without a request for permit modification implies that no change is contemplated which would constitute a new or modified air pollution source. A written agreement containing a specific date for transfer of ownership permit will be accepted in lieu of completion of this section of this form.

Submit completed application, APENs, and filing fee to the address below:

APENS: More than one Air Pollutant Emission Notice (APEN) may be needed with this application. Only one application form needs to be completed.

Multiple sources – An APEN is required for each source unless they may be grouped as specified in Regulation No. 3, Part A, Section II.B.4.

Transfer of Ownership – An APEN must be submitted for each individual emission source to be transferred.

Name Change – If a company is changing its name only, and all other procedures and information as stated in the last submitted APEN remains unchanged, then only one APEN for each facility is required.

FEES:

Filing Fee: Permittee must submit $119.96 per APEN with the application.

Permit Processing Fee: Permittee will be invoiced at the rate of $59.98 per hour based on the amount of time spent reviewing the application and issuing the permit. Invoices for APEN fees and permit processing fees must be paid before permit will be issued. Once an application is received, all processing time will be charged regardless of whether a permit is issued or not. If a project is cancelled, the division should be notified in writing immediately.

Annual Fees: Annual fees will be billed for each source requiring an APEN to cover the costs of periodic inspections and administration. Annual fees are based on the quantity and type of pollutants emitted. For specific information related to fees see Regulation No. 3, Part A, Section VI.

Mail completed application, APENs, and filing fee to:

Colorado Department of Public Health and Environment
Air Pollution Control Division
4300 Cherry Creek Drive South, APCD-SS-B1
Denver, Colorado 80246-1530

http://www.cdphe.state.co.us/ap/stationary.html
Phone: (303) 692-3150

Revised August 2004

- LAND DEVELOPMENT -

Air Pollutant Emission Notice (APEN) – and – Application for Construction Permit

☒ New Facility ☐ Transfer of Ownership * ☐ Change in Production ☐ No Change (APEN Update Only)

All sections of this APEN and application must be completed prior to submittal to the Division for both new and existing facilities. An application with missing information may be determined incomplete and may result in longer engineer processing times.

* Note: For transfer of ownership or company name change of a permit, you must also submit a Construction Permit Application form.

Permit Number _____ **AIRS Number** _____

Company Name:	Williams Field Services Company, LLC		
Billing Address:	One Williams Center	Zip Code:	74101-0645
	P.O. Box 645, WRC 3-9		
	Tulsa, OK		
Person to Contact:	Mike Gettel	Phone Number:	918-573-3268
Email Address:	Michael.gettel2@williams.com	Fax Number:	918-573-9755

Please provide description of the activity: (Also, please provide a site map)

A pipeline will be installed by construction equipment. Please see the attached mapping.

Project Name & Location: Parachute Greasewood Express Pipeline

(Begin) County: Garfield Section: 33 Township: 6S Range: 96W

(End) County: Garfield Section: 36 Township: 5S Range: 96W

Total area of land in project: 74 Acres

Date earthmoving will – Commence: July 16, 2007 prox. Stop: October 31, 2007 prox.

Total area subject to earthmoving: 74 Acres

Total disturbed area at any one time: 74 Acres

Area to be paved (roads, parking lots): 0 Acres

Date paving will be completed: Not applicable

Estimated time to complete entire project (includes buildings) 3 months prox.

List any known or suspected contaminates in the soil:

Not applicable

Brief description of how the project development will occur (attach an additional page if necessary):

A pipeline will be installed by construction equipment. The disturbed right-of-way will be reclaimed.

- LAND DEVELOPMENT -

FUGITIVE DUST CONTROL PLAN FOR LAND DEVELOPMENT

(This must be submitted with the Air Pollutant Emission Notice-and-Application for Emission Permit)

Regulation No. 1 requires that a fugitive dust control plan be submitted by applicants whose source / activity results in fugitive dust emissions. The control plan must enable the source to minimize emissions of fugitive dust to a level that is technologically feasible and economically reasonable. If the control plan is not adequate in minimizing emissions a revised control plan may be required. The control plan (if acceptable to the Division) will be used for enforcement purposes on the sources.

Please check the dust control measures which you propose for your activity. The Division will enforce the control measures checked. Use separate sheets if more space is needed. Also note items with an asterisk (*). This indicates those measures which will probably be required.

I. Control of Unpaved Roads on Site

- ☒ Watering
  - ☐ Frequent (Watering Frequency of 2 or More Times Per Day)
  - ☒ As Needed
- ☐ Application of Chemical Stabilizer
- ☒ Vehicle Speed Control
  Speeds limited to 25 mph maximum. Speed limit signs must be posted.
  (Generally 30 mph is maximum approvable speed on site.)
- ☐ Gravelling

II. Control of Disturbed Surface Areas on Site

- ☒ Watering
  - ☐ Frequent (Watering Frequency of 2 or More Times Per Day)
  - ☒ As Needed
- ☐ Application of Chemical Stabilizer
- ☐ Vehicle Speed Control
  Speeds Limited To _____ MPH Maximum. Speed Limit Signs Must Be Posted.
- ☒ Revegetation Revegetation Must Occur Within One Year Of Soil Disturbance
  - ☒ Seeding with mulch
  - ☐ Seeding without mulch
- ☐ Furrows at right angle to prevailing wind
  Depth of furrows _____ Inches (must be greater than 6")
- ☐ Compaction Of Disturbed Soil On A Daily Basis To Within 90 % Of Maximum Compaction (As determined by a Proctor Test).
  - ☐ Foundation areas only; or
  - ☐ All disturbed soil.
- ☐ Wind Breaks
  Type: _____ (Example: Snow Fence, Silt Fence, etc.)
- ☐ Synthetic Or Natural Cover For Steep Slopes.
  Type: _____ (Netting, Mulching, etc.)

- LAND DEVELOPMENT -

III. Prevention Of Mud And Dirt Carried Out Onto Paved Surfaces.

☒ Prevention
- ☒ Gravel Entry Ways
- ☐ Washing Vehicle Wheels
- ☐ Other: _____

☐ Cleanup of Paved Areas Frequency: _____ Times Per Day
- ☐ Street Sweeper
- ☐ Hose With Water
- ☐ Other: _____

Additional Sources of Emissions

List any other sources of emissions or control methods

Non-road mobile sources as well as support vehicles. Dust emissions will mainly be controlled through speed control and watering as needed for these sources.

_____

Signature of Legally Authorized Person (not a vendor or consultant) Date

Mike Gettel Senior Engineer Project Manager

Name (please print) Title

Check the appropriate box if you want:

☒ Copy of the Preliminary Analysis conducted by the Division

☒ To review a draft of the permit prior to issuance

(Checking any of these boxes may result in an increased fee and/or processing time)

Send this form along with $119.96 to:
Telephone: (303) 692-3150

Colorado Department of Public Health and Environment
Air Pollution Control Division
APCD-SS-B1
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Small Business Assistance Program
(303) 692-3148

Small Business Ombudsman
(303) 692-2135

Appendix B

Project Area Map

CONSTRUCTION PLAN SET

Alignment Sheets	
Drawing No	Description
DRG-PAS01-15116	SHEET 1 - 6"/8" Parachute Greasewood Express Liquids Pipeline STA 0+00 to STA 140+00
DRG-PAS02-15116	SHEET 2 - 6"/8" Parachute Greasewood Express Liquids Pipeline STA 140+00 to STA 272+00
DRG-PAS03-15116	SHEET 3 - 6"/8" Parachute Greasewood Express Liquids Pipeline STA 272+00 to STA 379+74
Fabrication Drawings	
Drawing No	Description
DRG-FAB01-15116	8" Launcher Assembly
DRG-FAB02-15116	8" Receiver & 8" Launcher Assemblies
DRG-FAB03-15116	8" Reciever Assembly
Construction & Environmental Detail Drawings	
Drawing No	Description
DRG-DTL01-15116	SHEET 1 Construction and Environmental Details
DRG-15116-9114	Open Cut Crossing - Flume Method
DRG-15116-9126	Typical Matting Streambanks
DRG-15116-9133	Typical Matting Slopes
DRG-15116-9113	Open Cut Crossing - Flowing Waterbody Method
DRG-15116-9103	Typical Sandbag Trench Slope Breakers
DRG-15116-9102	Typical Polyurethane Foam Trench Breakers
DRG-DTL02-15116	SHEET 2 Construction and Environmental Details
DRG-15116-9106	Typical Straw Bale Sediment Barrier (Sht 1 of 2)
DRG-15116-9107	Typical Straw Bale Sediment Barrier (Sht 2 of 2)
DRG-15116-9108	Typical Silt Fence Sediment Barrier (Sht 1 of 2)
DRG-15116-9109	Typical Silt Fence Sediment Barrier (Sht 2 of 2)
DRG-15116-9110	Typical Waterbar (Slope Breaker) (Sht 1 of 2)
DRG-15116-9111	Typical Waterbar (Slope Breaker) (Sht 2 of 2)
DRG-15116-9135	Typical Open-Cut Crossing - Non-flowing Stream Method
DRG-15116-9105	Typical Crossing of Creek or Drainage
DRG-DTL03-15116	SHEET 3 Construction and Environmental Details
DRG-15116-9197A	Typical Detail Bullard Protective Barriers (Sht 1 of 2)
DRG-15116-9197B	Typical Detail Bullard Protective Barriers (Sht 2 of 2)
DRG-15116-9100	Typical Temporary Crossing Ramp Over Existing Pipelines
DRG-15116-9188	Pig Bars for Weld Tee Branch Outlets-Standard Thickness
DRG-15116-9104	Typical Temporary Pipe Stockpile During Construction
DRG-15116-9188	Typical Pipeline Support Pillows of Sandbags or Polyurethane Foam
DRG-DTL04-15116	SHEET 4 Construction and Environmental Details
DRG-15116-9196	Cathodic Protection Test Station Type Configuration, Cadweld & Post Installation Procedures
DRG-15116-9185	Typical Buried Cable Crossing
DRG-15116-9146	Typical Foreign Pipeline Crossing
DRG-15116-7203	Typical Bored Crossing of Road by Uncased Pipeline
DRG-15116-7204	Typical Open Cut Crossing of Road by Uncased Pipeline
DRG-DTL05-15116	SHEET 5 Construction and Environmental Details
DRG-15116-9120	Typical Temporary Soil Containment Berm (Saturated Soils)
DRG-15116-9121	Typical Straw Bale Dewatering Structure - Small Volume
DRG-15116-9122	Typical Straw Bale Dewatering Structure - Large Volume
DRG-15116-9187	Typical Protective Coating Detail
DRG-15116-9153	Typical Exclusion Fence and Lath
DRG-15116-9146	Typical Temporary and Permanent Gate Detail
DRG-15116-9202	Typical Detail Anchor Flange and Concrete Block
DRG-DTL06-15116	SHEET 6 Construction and Environmental Details
DRG-15116-9125	Typical ROW Section Full Width Topsoil Salvage
DRG-15116-9124	Typical ROW Section Trench & Spoil Topsoil Salvage
DRG-15116-9145	Typical ROW Section Blade Width Topsoil Salvage
DRG-15116-9200	Typical Side Hill ROW Section Bi-level Grading
DRG-15116-9160	Typical Large Incised Channel
DRG-15116-9161	Typical Small Incised Channel
Hydrostatic Test Profile	
Drawing No	Description
DRG-HYDRO01-15116	6"/8" Parachute Greasewood Express Liquids P/L Hydrostatic Test Profile
Crossing Drawings	

ENGINEER'S CERTIFICATION

LARRY G. BOSWELL STATES THAT I AM BY OCCUPATION A PROFESSIONAL ENGINEER (CIVIL) AND LAND SURVEYOR EMPLOYED BY WILLIAMS FIELD SERVICES, LLC TO PREPARE DESIGN DRAWINGS FOR THE PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE, THAT THE WORK WAS DONE UNDER MY AUTHORITY AND SUPERVISION COMMENCED FEBRUARY 11, 2007, AND THAT THE DESIGN IS COMPLIANT WITH APPLICABLE SECTIONS OF 49 CFR 195 FEDERAL PIPELINE SAFETY REGULATIONS, TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE AND THE NORMAL AND CUSTOMARY INDUSTRY PRACTICES FOR THIS TYPE OF WORK.

REVIEWED AND APPROVED BY:

LARRY G. BOSWELL, WYOMING PROFESSIONAL ENGINEER (CIVIL) AND LAND SURVEYOR NO. 3807

MICHAEL C. LOCK, COLORADO PROFESSIONAL ENGINEER NO. 37933

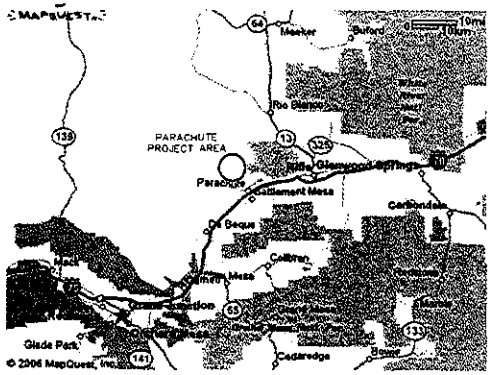
Williams FIELD SERVICES

PREPARED BY:

DRG GRIFFIN & ASSOCIATES, INC.

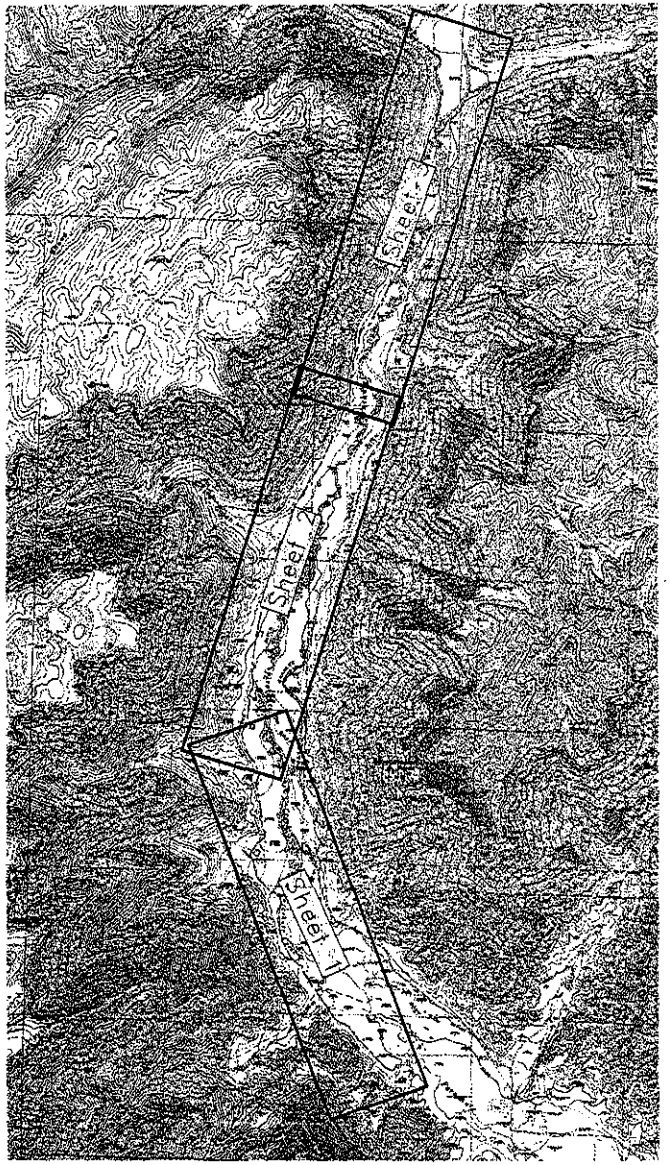
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

WILLIAMS FIELD SERVICES, LLC
6"/8" PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE
TOWNSHIP 5 & 6 SOUTH, RANGE 96 WEST
GARFIELD COUNTY, COLORADO



VICINITY MAP

REVISIONS					
NO.	DATE		BY	CHK	APPR
0	05/09/07	ISSUED FOR CLIENT REVIEW AND COMMENT	SJJ	WRS	



PARACHUTE
SHEET INDEX
SCALE: 1" = 2000'

Appendix C

Project Specification Record

- Attachment D – Contract Price Schedule
- Attachment D-1 Contract Price Schedule Description including payment item description and exclusions, basis of payment and method of measurement.

The controlling standards for the design and construction of the work will be the U.S. Department of Transportation Pipeline Safety Regulations 49 CFR 195 Transportation of Hazardous Liquids by Pipeline: Minimum Federal Safety Standards. Where 49 CFR 195 does not address particular design, construction or operation requirements necessary for the work, the provisions of American Society of Mechanical Engineers ASME Code B31.4 Pipeline Transportation Systems For Liquid Hydrocarbons and Other Liquids will be incorporated into the work. Other applicable codes, regulations and standards will be applied to the work when referenced by the controlling 49 CFR 195 regulation and ASME B31.4 Code and as otherwise determined by the normal and customary standard of practice for this type and nature of work.

The provisions of any permit or license issued by controlling agencies providing a required approval for the project will also be considered a controlling standard for the project.

Clearing And Grading - Vegetation will be cleared and the construction ROW graded to provide for safe and efficient operation of construction equipment and to provide space for temporary storage of spoil material and salvaged topsoil. In general, the width of the ROW clearings will be kept to a practical minimum to avoid undue disturbance. Brush clearing will be limited to trimming and/or crushing to avoid disturbance of root systems. All brush and other materials that are cleared will be windrowed along the ROW. Where necessary, all brush and other debris cleared will be disposed of in accordance with instructions from the jurisdictional agency or landowner and all applicable laws and regulations. Topsoil removed during the clearing and grading operations will be segregated from subsoils. At a minimum, the first 6-inches of surface soil would typically be separated. These topsoils will be preserved for subsequent restoration activities on the ROW.

Three approaches to topsoil removal are provided in this project. These include: 1) full ROW width topsoil removal; 2) trench and spoil area only topsoil removal and 3) blade width only topsoil removal. ROW section details of these topsoil removal methods are provided in the project Construction and Environmental Detail Drawings. The method of topsoil removal to be utilized on the project may vary from location to location. This will depend upon landowner desires, government agency stipulations, conditions encountered on the ground during construction, advisement of any soil & reclamation specialist employed or involved on the work, and the preferences and requirements of the contractor in

regard to his adopted plan for successful clearing, grading, restoration, reseeding and reclamation of the project.

Grading of the construction area will be performed in order to create a suitable work surface for construction vehicles and heavy equipment. On flat to mildly or moderately sloping terrain, a uniform work surface will be graded across the entire ROW. A bi-level work surface may be necessary in more sloped areas. ROW section details for side hill bi-level construction are shown in the project Construction and Environmental Detail Drawings. Side hill cuts will be kept to a minimum to ensure resource protection and a safe, stable surface for heavy equipment use.

When required by controlling agency or the landowner, construction activities will not be conducted during conditions when the soil on the ROW or access roads are too wet to adequately support construction equipment. In such instances and where construction equipment creates excessively deep ruts, construction activities will be discontinued until soil conditions improve.

All survey monuments located within the ROW will be protected during construction activities. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral survey corners, reference corners, witness points, U.S. Coastal and Geodetic Survey benchmarks and triangulation stations, military control monuments, and recognizable civil survey monuments. In the event of obliteration or disturbance of any of the above, the incident will be duly reported. Where such monuments are obliterated during construction, the services of a registered land surveyor will be employed to restore the monuments in accordance with established procedures. Each such survey would be duly recorded with the appropriate county and other jurisdictional agencies.

Trenching - Pipeline burial depths will be in conformance with the requirements of 49 CFR 195 Pipeline Safety Regulations. Occasionally, the ditch will be excavated to depths greater than the general values specified. Such instances include where the ditch will be excavated to pass beneath railroads, roads, streams, drainages and other obstructions.

As a minimum, the ditch will be excavated to a depth to allow a clearance of 24 inches between the project pipeline and other pipelines or underground facilities. Machine excavation will not be performed closer than 5 feet from any existing pipeline, communications cable or other such buried facility encountered in the ROW. Existing pipeline locations will be marked in the field and 48-hour prior notification given to the pipeline or other underground utility operator.

Construction methods employed to excavate a trench will vary depending on soils, terrain, and related factors. Self-propelled trenching machines will be used

where possible. Conventional mechanical backhoes will be used on steep slope areas, unstable soils, high water table, and where deep or wide trenches are required. Where rock or rock formations are encountered, tractor-mounted mechanical rippers or rock trenching equipment may be used to facilitate excavation. In areas where rippers or trenchers are not practical or sufficient, blasting may be employed. Strict safety precautions will be taken when blasting. Backhoes will then be used to clean the ditch after ripping or blasting.

Unless otherwise required and agreed upon, pipeline crossings of non-surfaced, gravel, lightly traveled, and rural roads will be made using open trench "cut and cover" methods with mechanical ditching machine or backhoe. Installation at these locations, including cleanup and restoration of road surfaces, will usually be completed within one day. Provisions will be made to detour or control passage of traffic during the construction.

Boring & Drilling – Not applicable.

Pipe installation - Pipe will be shipped directly from a manufacturer or supplier by rail and truck to offsite storage sites and then be hauled by truck to the pipeline ROW. Each individual joint of pipe will be unloaded by cranes or tractors equipped with side booms and slings, and strung parallel to the ditch. Sufficient pipe for road crossings will be stockpiled at staging areas near the crossing. Stringing operations will be coordinated with trenching and installation activities in order to properly manage the construction time at a particular tract of land. Gaps will be left at access points across the ditch to allow crossing of the ROW. As construction proceeds, some of the pipe and stringing equipment will be temporarily stored at approved staging and extra workspace areas along the ROW.

After the joints of pipe are strung along the ditch but before the joints are welded together, individual joints of the pipe will be bent to accommodate horizontal or vertical changes in direction. Such bends will be made utilizing an approved cold, smooth bending machine having a hydraulically operated shoe that makes the bend. Where the deflection of a bend exceeds the allowable design limits for field-bent pipe, shop fabricated pieces (induction or "hot bends") or trimmed segmentable forged fittings will be installed.

After the pipe joints are bent, the pipe is lined up end-to-end and clamped into position. The pipeline will then be welded in conformance with 49 CFR Part 195, Subpart D, "Construction" and API 1104, "Standard for Welding Pipelines and Related Facilities," latest edition. Welds will be visually inspected by a qualified inspector and will be subject to radiographic inspection in conformance with DOT requirements. A specialized contractor certified to perform radiographic

inspection will be employed to perform this work. Any defects will be repaired or removed as required under the specified regulations and standards.

Project specifications will require that the pipe be externally coated with fusion bonded epoxy coating prior to delivery. After welding, field joints will be coated with either a tape wrap or shrinkable sleeve wrap. Before the pipe is lowered into the ditch, the pipeline coating will be visually and electronically inspected and any detected faults or scratches will be repaired.

Backfilling - Once the pipe coating operation has been completed, the pipeline will be lowered into the ditch. Side-boom tractors will be used to simultaneously lift the pipe, position it over the ditch, and lower it in place. Inspection will be conducted to verify that minimum cover is provided, the trench bottom is free of rocks/debris/etc., external pipe coating is not damaged, and the pipe is properly fitted and installed into the ditch. In rocky areas, padding material or a rock shield will be used to protect the pipe.

Backfilling will begin after the pipeline has been successfully placed in the ditch and final inspection has been completed. Backfilling will be conducted using a bulldozer, rotary auger backfiller, or other suitable equipment. Backfill will generally consist of the material originally excavated. In some cases, backfill material from other areas (borrow material) may be needed. Backfill would be graded and compacted, where necessary for ground stability, by being tamped or walked in with a wheeled or track vehicle. The soils will be replaced in a sequence and density similar to pre-construction conditions. Subsoils will be backfilled first, followed by replacement of stockpiled topsoil. Once the excavation has been filled and compacted, the topsoil would typically be crowned in a berm, 12-inches-high or less, and tapered outward from the center and/or spread uniformly over the disturbed ROW. The material in the berm is intended to compensate for normal settling of backfilled materials. Any excess excavated materials or materials unfit for backfill will be properly disposed of in conformance with applicable laws or regulations, and landowner or jurisdictional agency requirements. Where possible, these surplus materials will be spread out over the ROW to avoid off-site disposal.

Where required by controlling agencies, landowners, other situations and good cause, controlled compacted backfill will be placed at road crossings and other such locations. Backfill material to be placed shall be inspected and determined suitable for use by a qualified person. The backfill shall be placed at a controlled water content range in level uniform layers not exceeding 8-inches compacted thickness. The resulting backfill density shall not be less than 90% maximum density (or higher if prescribed by permit, agency or landowner) as determined by an established AASHTO or ASTM procedure.

Hydrostatic Testing - The entire pipeline will be tested in compliance with 49 CFR Part 195 Pipeline Safety Regulations. This will be accomplished through hydrostatic testing. Prior to filling the pipeline for a hydrostatic test, each section of the pipeline will be cleaned by passing reinforced poly pigs through the interior of the line. Incremental segments of the pipeline will then be filled with water, pressurized, and held for the duration of the test. The length of each segment tested will depend on local topography. Typically, the hydrostatic tests of individual segments will be conducted in sequence and the test water will be transferred from one segment to another.

Hydrostatic test water intake and discharge will be done in conformance with all applicable local, state, and federal requirements. Performance of these operations shall avoid adverse impacts to aquatic, wildlife, and visual resources. The test water will be obtained from a surface water, an existing well (pending water appropriation permits), a municipal water source and a commercial provider. At discharge points, the release of water will be controlled to prevent erosion. Energy dissipating devices will be employed where needed. When required, discharged waters will be sampled, tested and filtered in accordance with applicable discharge permit requirements.

Upon completion of the hydrostatic testing, the pipeline segment will be dried using compressed dry air, pigs, spheres, or other accepted means. Once dried and fully ready for service, including tie-ins to terminal and online facilities, the pipeline will be purged of air and charged with natural gas liquids.

Cleanup and Restoration - Upon completion of backfilling, construction work will commence to clean up, restore, and re-vegetate the ROW. Efforts will have be taken during the prior work to minimize erosion, restore the natural ground contour, account for trench settling, re-establish plant growth, and allow natural surface drainage. As agreed with the landowner or controlling agencies, all completed construction areas and temporary access roads will be returned as nearly as possible to their original condition and service. All restoration and re-vegetation will be completed to the satisfaction of the landowners, controlling agencies and other recognized parties.

First, any trash, brush, surplus material, or other debris will be cleared from construction areas and disposed of in an appropriate manner. The ROW will then be graded and restored to nearly pre-construction grades. Final restoration of disturbed areas will be accomplished by whatever means are most suited for the particular soils, terrain, vegetation and climate at a specific site. In general, waterbars will be constructed to prevent erosion of unconsolidated soils and provide drainage away from the disturbed area and into existing washes or drainages. Where deemed appropriate, slash will be used to control erosion.

Where necessary, terracing or other erosion control techniques may be employed.

Reseeding will be accomplished using seed mix or plant species approved by the landowners or controlling agencies. Seedbed preparation and seeding operations will be conducted in accordance with accepted techniques for the particular area and task. In areas with difficult reclamation problems, restoration and re-vegetation will be considered a special management problem and will be resolved in coordination with the landowner and the respective authorities involved. Advice may be sought from specialty agencies or environmental consultants to fully determine the appropriate mitigation and reclamation measures needed.

Residential Areas And Private Property - The construction ROW will not be located within 50 feet of a place of residence or similar use. Where residential and private property is encountered, the following practices where reasonable, prudent and beneficial will be implemented:

- If the trench is left open overnight within 250 feet of a residence, place of business or similar activity, it will be fenced or barricaded to mitigate safety concerns.
- Owners of private roads along the route will be notified 24 hours in advance of planned road crossings.
- Private road crossings will be completed within three hours and roads will be restored to pre-construction conditions or better.
- Access to and from residences, place of business and similar areas will be maintained at all times unless express authorization to the contrary is obtained for the landowner, lessee or other authorized entity.
- Construction activities, except for hydrostatic testing, will only occur between 7 AM and 6 PM, six days a week (Monday through Saturday).
- No trench within 250 feet of a residence, place of business or similar area will be left open for more than three days.
- If blasting activities are required, matting will be used to prevent damage from flying debris. Landowners, lessees and others will be notified in advance to ensure that all persons, livestock and equipment are out of the danger zone. Where it is determined by a qualified person that there are still identifiable risks in proximity of the work area, blasting will not be used.
- In residential and similar areas, topsoil replacement (topsoil import) may be used as alternate to topsoil segregation.

Livestock Issues - Prior to construction, concerns and issues of landowners, lessees and controlling agencies in regard to pipeline construction and livestock

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 8- Primary Project Participants 9.07.04 (7)
Listing of company representative, company and individual acting as an agent for the company and construction company contacts. There are no federal and state agency contacts.

Williams Field Services Company, LLC- Authorized Representative
Mr. Mike Gettel
One Williams Center
P.O. Box 645, WRC 3-9
Tulsa, OK 74101-0645
Phone: 918-573-3268
Cell Phone: 918-606-5985
Email: Michael.gettel2@williams.com

DR Griffin & Associates, Inc.- Project Designer and Surveyor
Mr. Mike Lock, PE
D. R. Griffin & Associates, Inc.
Professional Engineers & Land Surveyors
1414 Elk Street, Suite 202
Rock Springs, WY 82901
Phone: 307-362-5028
Fax: 307-362-1056
Email: mlock@drg-wy.com

Pipeline Construction Company
The company has not been chosen. This information will be updated and submitted to Garfield County upon selection of the company.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President- PVCMI

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 9- Project Facilities 9.07.04 (8)

The Parachute Greasewood Express pipeline project facilities are noted in attached mapping prepared by DR Griffin & Associates in tab 2- Vicinity Map 9.07.04 (1).

Additionally, please find attached within this tab, detailed drawings for the Parachute NGL Storage Facility.

The following information is attached:

A. Parachute NGL Storage Facility

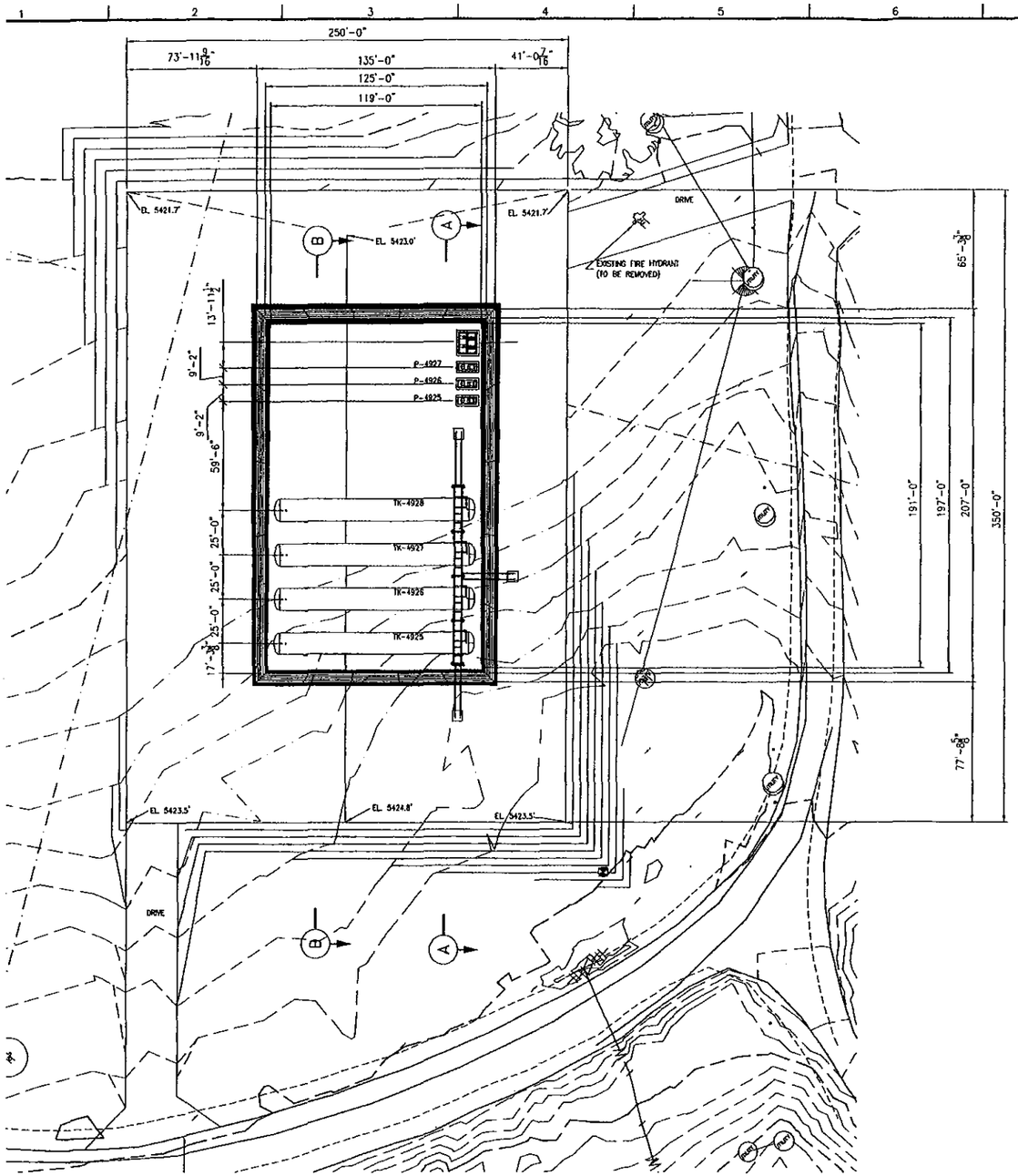
Drawing Number- US-106292-BA-06-600E dated 5/31/07.

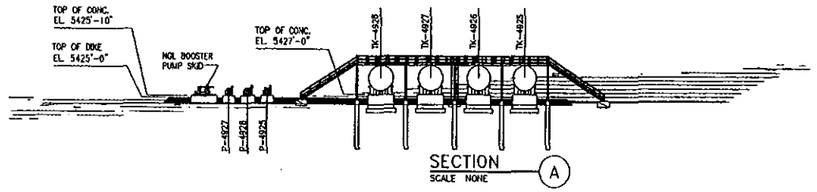
B. New Tank Site- Geotechnical Engineering Group, Inc. Job 2659 Geotechnical Investigation Report dated May 17, 2007.

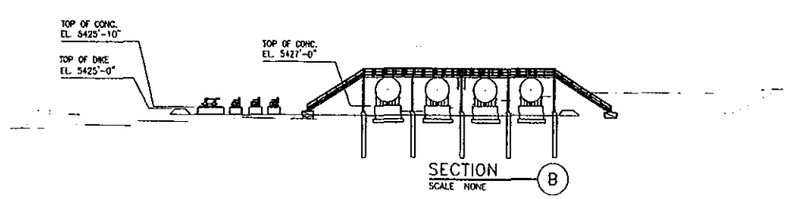
C. Williams Production RMT Co.- Spill Prevention Control and Countermeasures Plan, March 2007 revision. This document will be updated after construction of the Parachute NGL Storage Facility. Please find a letter dated 6/19/07 from Cordilleran Compliance Services at the front of this section noting the fact that liners are not required for the NGL storage facility as per Federal Regulations.

D. Construction and Permanent rights-of-way widths are detailed on an attachment to this letter. The surface agreements are attached in Tab 5- Evidence of surface owner notification and of surface agreements 9.07.04 (4). Additionally, the working space and spoil space are noted on the DR Griffin & Associates drawings in tab 2.
Additional details regarding these issues are noted in tab 22- Construction Management Plan.
Please contact me with any questions.
Sincerely,

Philip B. Vaughan
President
PVCMI







BID DOCUMENTS
FOR INFORMATION ONLY
5/31/2007

REFERENCE DRAWINGS		REVISIONS				
DWG NUMBER	DESCRIPTION	REV.	DESCRIPTION	DATE	BY	CK
		A	ISSUED FOR BID	04/9/07	AR	EH

TOLERANCES

CUTS	±1/8"
ANGLES	±1/2°
WELD ASS'Y.	±1/4"

Edited by: ebsmith
Jun 01, 2007 - 8:17am
File: 05-106292-BA-06-600E.dwg

THE HANOVER COMPANY
20602 E. 81st STREET
Broken Arrow, Oklahoma 74014
(918) 251-8571

CUSTOMER: WILLIAMS PRODUCTION RMT CO.
PARACHUTE CREEK GAS PLANT 3 EXPANSION
TITLE: NGL STORAGE TANK AREA
FOUNDATION LOCATION PLAN

DRAWN	DATE	APPROVED	SCALE	NO. REQ'D
L. SMITH	05/29/2007	JSA	1/32" = 1'-0"	

DRAWING NO. US-106292-BA-06-600E
SHT. NO.
REV. A

Geotechnical Engineering Group, Inc.

GEOTECHNICAL INVESTIGATION
Section 28, Township 6 South, Range 96 West, 6th Principal Meridian
New Tank Site
Garfield County, Colorado

Prepared For:

Williams Production RMT Company
P.O. Box 370
Parachute, CO 81635

Attention: Mr. Tom Fiori

Job No. 2,659

May 17, 2007

Geotechnical, Environmental and Materials Testing Consultants
Grand Junction - Montrose - Moab - Crested Butte
(970) 245-4078 • fax (970) 245-7115 • geotechnicalgroup.com
2308 Interstate Avenue, Grand Junction, Colorado 81505

TABLE OF CONTENTS

SCOPE

This report presents the results of a Geotechnical Investigation for the proposed new holding tank at near Starkey Gulch and Parachute Creek in Garfield County, Colorado. Our investigation was conducted to explore subsurface conditions and provide and foundation for the proposed construction. The report includes descriptions of subsoil and groundwater conditions found in 4 exploratory test borings, recommended foundation systems and allowable design soil pressures, and design and construction criteria for details influenced by the subsurface conditions. This investigation was performed in general conformance with our proposal No. 04-101, dated April 4, 2006.

The report was prepared from data developed during our field exploration, laboratory testing, engineering analysis and experience with similar conditions. A brief summary of our conclusions and recommendations follows. Detailed criteria are presented within the report.

SUMMARY OF CONCLUSIONS

1. Subsoils encountered in test boring TH-1 consisted of on site fill material underlain by sandy, clay with varying amounts of gravel. Subsoils encountered in test borings TH-2 and TH-3 consisted of onsite fill material underlain by interlayered sandy clay and sandy clay with varying amounts of gravel. Subsoils encountered in test boring TH-4 consisted interlayered sandy clay and sandy clay with varying amounts of gravel. Formational

material was not encountered to the maximum depth explored of 30 feet. Groundwater was encountered at 27 feet on the day of exploration.

2. We believe a deep foundation can provide a more positive foundation for the proposed construction. An alternative, with more potential risk of movement, of shallow foundation underlain by a depth of structural fill is also presented. A discussion including detailed design and construction criteria are included in the text of the report.

3. Surface drainage should be designed for rapid runoff of surface water away from the proposed construction.

SITE CONDITIONS

The subject site was located in the Southwest ¼ of Section 28, Township 6 South, Range 94 West, 6th Principal Meridian in Garfield County, Colorado. A project vicinity map is shown on Fig. 1. The site was south west of Starkey Gulch and Parachute creek confluence. The site generally slopes to the north east. The site had asphalt remnants and scattered gravel and had a low ground cover containing native and non-native grasses. Commercial industrial structures were north and east of the site. Vacant land was east and west of the site.

PROPOSED CONSTRUCTION

We understand proposed construction includes 5 holding tanks. Each tank will weigh 90,000 pounds and will be 12 to 14 feet in diameter by 60 feet in length. If proposed construction changes or is different from what is stated, we should be contacted to review actual construction and our recommendations.

SUBSURFACE CONDITIONS

Subsurface conditions at the site were investigated by observing and sampling four exploratory test borings. Locations of the exploratory test borings are shown on Fig. 2. Graphic logs describing the soils found in the exploratory test borings and field penetration resistance tests are presented on Figs. 3 through 7. Subsoils encountered in the exploratory test boring TH-1 consisted of about 7 feet of onsite fill material underlain by about 23 feet of sandy clay with varying amounts of gravel to the maximum depth explored 30 feet. Subsoils encountered in exploratory test borings TH-2 and TH-3 consisted of about 3 to 7½ feet of existing onsite fill underlain by about 22½ feet of interlayered sandy clay and sandy clay with varying amounts of gravel to the maximum depth explored of 30 feet. Subsoils encountered in exploratory test boring TH-4 consisted of interlayered sandy clay and sandy clay with varying amounts of gravel to the total depth explored of about 30 feet. The existing on site fill was loose to medium

stiff and moist. The sandy clay was very stiff to medium stiff, moist and brown. The sandy clay with varying amounts of gravel was very stiff to medium stiff, moist to wet and brown. Formational material was not encountered at the time of drilling to the maximum depths explored of 30 feet. The exploratory tst borings were terminated at a depth of 30 feet as requested by Williams Production RMT Company representatives. Groundwater was encountered in the test boring TH-1at 27 feet on the day of exploration.

Two gravelly, sandy clay samples tested had moisture contents 5.5 and 6.3 percent, liquid limits of 28, plasticity indexes of 14 and 15, and 60 to 63 percent passing the number 200 sieve (clay and silt sized particles). One gravelly, clayey sand sample tested had a moisture content of 6.3 percent, a liquid limit of 27, a plasticity index of 13 and had 41 percent passing a No.200 sieve. One clayey, sandy gravel sample tested had a moisture content of 4.6 percent, a liquid limit of 25, a plasticity index of 6 and had 22 percent passing a No.200 sieve. Two sandy clay samples tested had a moisture contents of 13.7 to 16.8 percent, dry densities of 110 and 111 pcf, and exhibited 0.2 percent consolidation and 0.1 percent swell when wetted under a confining pressure of 500 psf. Two sandy clay samples tested had moisture contents of 8.1 and 22.1 percent, dry densities of 95 and 109 pcf, liquid limits of 24 and 30, plasticity indexes of 9, and had 65 and 71 percent passing a No.200 sieve. One clayey, gravelly sand sample tested had a moisture content of 9 percent, a dry density of 98 pcf, a liquid limit of 26, a

plasticity index of 13 and had 27 percent passing a No.200 sieve. One sandy clay sample tested had a moisture content of 15.4 percent, a dry density of 106 pcf. One sandy clay sample tested had a moisture content of 15.7 percent, a dry density of 101 pcf, a liquid limit of 28, a plasticity index of 13, an internal angle of friction of 25 degrees and a cohesion of 220 psf. Two sandy clay samples (blended) tested had had a standard Proctor (ASTM D698) maximum dry density of 116.5 and optimum moisture content of 13.5 percent. Six samples were tested for water soluble sulfates. Theses samples had water soluble sulfates ranging from 69 to 13,000 ppm. The results of the laboratory testing are presented on Figs. 8 through 14 and summarized on Tables I and II.

SITE DEVELOPMENT

Site grading plans were not available at the time of this investigation. We anticipate some minor grading may be included in the site development. Subgrade below structural fill or any subgrade in areas of planned general site fill should be scarified 10-inches, moisture conditioned to within 2 percent of optimum moisture content and compacted to at least 95 percent of standard Proctor (ASTM D698) maximum dry density. Structural fill should be placed in 10-inch maximum loose lifts, moisture conditioned to within 2 percent of optimum moisture content and compacted to at least 95 percent of standard Proctor maximum dry density. On site soils are suitable

for reuse as structural fill. Imported structural fill, if any, should consist of a material devoid of organics and deleterious materials with a maximum particle size of 2-inches, a maximum of 15 percent passing the No. 200 sieve and a maximum liquid limit of 30. Additional recommendations may be required for foundation areas as noted in the **"FOUNDATIONS"** section of this report. Sample site grading specifications are included in Appendix A.

Existing fill was encountered in exploratory test borings TH-1 through TH-3 to a depth of about 3 to 7½ feet. The existing fill is not suitable for support of structures or structural components. Existing fill should be removed full depth and replaced with a well compacted structural fill in areas which will support structures, structural components.

We believe utility installation in the silty and sandy clays may be accomplished using conventional excavation equipment. Utility trenches should be sloped or shored to meet local, State and Federal safety regulations. Based on our investigation, we believe soils at this site may be classified as either Type B or Type C, based on OSHA standards. Excavation slopes specified by OSHA are dependent upon types of soils and groundwater conditions encountered. Contractors should identify the conditions encountered in the excavation and refer to OSHA standards to determine appropriate slopes.

We encountered groundwater at the time of our field study at a depth of about 27 feet below the ground surface. We anticipate typical development below-grade construction may be made without requiring dewatering. We anticipate groundwater levels may rise with seasonal and other varying conditions. As a result, there may be groundwater and soft soil concerns during construction, which were not identified by this investigation.

FOUNDATIONS

This investigation indicates subsurface conditions at foundation levels generally consist of sandy clay and sandy gravelly clay with low volume change potential. In our opinion, a foundation to better help mitigate risk of potential movement should be anchored below the zone of probable moisture variation and concentrate the weight of the structure. In our opinion, a driven pile foundation bedded in an underlying competent stratum most nearly satisfies these criteria. A competent bearing stratum was not identified in the exploratory test borings to the maximum depth explored of 30 feet. The exploratory test borings were terminated at a depth of 30 feet as requested by Williams Production RMT Company representative. Additional subsurface exploration would be necessary to identify a bearing stratum and provide design and construction recommendations for end bearing deep foundations.

We present design and construction criteria for friction piles and spread footings with recommendations to help reduce or mask the influence of soil volume changes for structures sensitive to movement and spread footing and reinforced mat foundations for structures where significant movement is acceptable. These criteria were developed from analysis of field and laboratory data and our experience. The additional requirements (if any) of the structural engineer should also be considered.

Friction Driven Piles

1. Pile material should be steel concrete filled, closed end, steel pipes (10¾ inch O.D., 0.25-inch thick walled or heavier). Pipe piles are typically used in this area. Tip reinforcement should be provided to reduce pile damage during hard driving. A maximum allowable service stress of 12,000 psi should not be exceeded. Pipe pile driven to achieve maximum working capacity of 60 to 80 kips each. These piles may result in friction piles, anticipated to be on the order of 110 to 120 feet in length, or they may be end bearing if a competent strata is encountered prior to friction capacity.

2. Pile driving equipment should be reinstalled on all driven piles and pile should be re-struck to verify capacities have been obtained. Re-striking should occur no sooner than 48 hours after original installation.

3. At the time of this investigation we did not identify a competent bearing strata to the maximum depth explored of 30 feet below existing ground surface.

4. Groups of piles placed closer than three diameters, center to center, should be evaluated to determine their reduced capacity.

5. The pile-driving hammer should be operated at the manufacturer's recommended stroke and speed when the "set" is measured.

6. The contractor should select a driving hammer and cushion combination which is capable of installing selected piles without overstressing the pile. The contractor should submit the pile driving plan and the pile hammer cushion combination to the structural engineer for evaluation of the driving stress in advance of the pile installation.

7. Exterior walls should be protected from freezing. We understand the Garfield County Building Department recommends coverage of at least 36 inches at an elevation up to 8,000 feet and at least 42 inches for elevations above 8,000 feet for frost protection.

8. A representative of our office should observe and keep records of penetration resistance, pile lengths and other factors that could affect the performance of the foundation, during driving.

Friction Drilled Pier Foundations

1. Friction Piers may be designed using a skin friction of 260 psf for pier surface area. Skin fiction should not be used for pier capacity for the upper portion of the pier to a depth of at least 3 pier diameters below the pier cap or the bottom of any adjacent excavation.

2. Piers should be minimum length of at least 35 feet. Specialty drilling equipment may be necessary to advance pier holes to minimum depth. We recommend a pier hole diameter of at least 30 inches.

3. Pier reinforcement and design should be provided by the structural engineer to resist tension in the event of swelling. Reinforcement should extend the full length of the piers and into grade beams and foundation walls. The structural engineer's design may require additional or alternative reinforcing and should be included in the foundation construction.

4. Foundation walls and grade beams should be well reinforced; the reinforcement should be designed by a qualified structural engineer.

5. Piers should be carefully cleaned prior to placement of concrete. Groundwater was not encountered at the time of this investigation to the depths investigated. Our experience indicates water may exist in the clay material. We believe problems associated with pier installation can be significantly reduced by using a "drill and pour" construction procedure; that is, placing concrete immediately after pier holes are drilled, cleaned and inspected. Pumping or tremie placement may be required for proper dewatering of the pier holes if water is encountered during drilling. Concrete should not be placed in any pier hole containing more than 3 inches water. Due to recent experience with improper installation, we recommend the use of a contractor with previous drilled pier installation experience.

6. Formation of mushrooms or enlargements at the top of piers should be avoided during pier drilling and subsequent construction operations. It may be necessary to case the top portion of the pier holes with a sono tube type casing to a depth of flaring of the pier holes to prevent mushrooms or enlargements at the top of piers.

7. Exterior walls should be protected from freezing. We understand the Garfield County Building Department recommends coverage of at least 36 inches at an elevation up to 8,000 feet and at least 42 inches for elevations above 8,000 feet for frost protection.

8. Installation of drilled piers should be observed by a representative of our firm to identify the proper bearing strata and confirm proper installation technique. Our representative should be called to visit the site at the time of the first pier excavation.

9. Minimum pier spacing should be 3 pier diameters for full development of individual pier capacity. Group capacity reduction for piers spaced closer than 3 pier diameters should be calculated by using the following equation. $\eta = 1 + \alpha/90^{\circ}\ (n-1)\ m + (m-1)/mn$ where m=number of rows, n=number of piles in a row, α=arc tan (d/s), s=spacing center to center of piles, d=pile diameter.

Spread Footing Foundations

1. Footing foundations bearing on 3 feet depth layer of well compacted structural fill can be design for a maximum soil bearing pressure of 2,200 psf. Loose soils should be completely removed from foundation bearing areas, prior to placing concrete.

2. The completed excavation should be over excavated 3 feet depth below footing bearing level. The resulting subgrade should be scarified 10-inches, moisture conditioned to within 2 percent of optimum moisture content and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D698). Our representative should be called to test subgrade compaction, prior to structural fill placement. A granular imported structural fill should consist of a maximum particle size of 2-inches, maximum of 30 percent passing the No. 200 sieve and a maximum liquid limit of 30. We recommend structural fill be placed in a maximum 10-inch thickness loose lifts and compacted to at least 95 percent of maximum dry density and within 2 percent of optimum moisture content (ASTM D698). The onsite soils, devoid of organic or deleterious material, moisture conditioned to between optimum moisture content and 3 percent over optimum moisture content and placed in thin lifts and compacted as discussed above, maybe re-used for well compacted structural fill. Structural fill should be tested every 1 foot depth of placement. If soft conditions are encountered in the open excavation then stabilization may be necessary. Our representative should be called to test compaction of subgrade and/or observe stabilization, prior to forming.

3. We recommend a minimum width of 4½ feet for continuous footings. Foundation walls should be well-reinforced top and bottom. We recommend reinforcement sufficient to span an unsupported distance of at least 12 feet. The structural engineer should design reinforcement.

4. Based on a design soil bearing pressure of 2,200 psf, a footing width of about 4½ feet and footings placed on a 3 feet thick layer of well compacted structural fill the estimated total settlement is about 1¼ inch. If wider footings are used we should be contacted to review the estimated settlement and provide additional recommendations where needed.

10. Exterior walls should be protected from freezing. We understand the Garfield County Building Department recommends coverage of at least 36 inches at an elevation up to 8,000 feet and at least 42 inches for elevations above 8,000 feet for frost protection.

11. The completed foundation excavation should be observed by our representative prior to placing forms, to verify the foundation bearing conditions, test compaction.

BELOW-GRADE CONSTRUCTION

No below-grade construction is anticipated at this site. Typically, foundation drains are not required for construction of this type. Crawl space areas should be sloped so that potential moisture will not collect in these areas, but flow out of the crawl space. Crawl space areas (where applicable) should also be well ventilated to help reduce humidity and potential musty odors. We can provide foundation drain details if requested.

CONCRETE

Six sandy clay and sandy gravelly clay samples (TH-1 through 4 at a depth of 1 to 8 feet, TH-1 at 14 feet, and TH-4 at 9 feet) tested had a water-soluble sulfate concentrations ranging from 69 to 13,000 ppm. Sulfate concentrations in this area are considered to have a negligible to very severe effect on concrete that is exposed to the soils. We recommend following the American Concrete Institute (ACI) guidelines for sulfate resistant cement. ACI recommends a Type V (sulfate resistant) cement plus

pozalan be used for concrete that is exposed to soils that have a very severe effect on concrete. In addition, the concrete should have a water cement ratio of 0.45.

SURFACE DRAINAGE

Performance of foundations and concrete flatwork is influenced by surface moisture conditions. Risk of wetting foundation soils can be reduced by carefully planned and maintained surface drainage. Surface drainage should be designed to provide rapid runoff of surface water away from the proposed structure. We recommend the following precautions be observed during construction and maintained at all time after the construction is completed.

1. The ground surface surrounding the structure should be sloped to drain away from the structure in all directions. We recommend a slope of at least 12 inches in the first 10 feet around the structure, where possible. In no case should the slope be less than 6 inches in the first 5 feet. The ground surface should be sloped so that water will not pond adjacent to the structure.

2. Backfill around foundation walls should be moistened and compacted.

3. Downspouts and drains should discharge well beyond the limits of all backfill. Splash blocks and downspout extenders should be provided at all discharge points.

4. Impervious plastic membranes should not be used to cover the ground surface immediately surrounding the structure. These membranes tend to trap moisture and prevent normal evaporation from occurring. Geotextile fabrics can be used to limit the weed growth and allow for evaporation.

CONSTRUCTION MONITORING

Geotechnical Engineering Group, Inc. should be retained to provide general review of construction plans for compliance with our recommendations. Geotechnical Engineering Group, Inc. should be retained to provide construction-monitoring services during all earthwork and foundation construction phases of the work. This is to observe the construction with respect to the geotechnical recommendations, to enable design changes in the event that subsurface conditions differ from those anticipated prior to start of construction and to give the owner a greater degree of confidence that the structures are constructed in accordance with the geotechnical recommendations.

LIMITATIONS

Four exploratory test borings were observed across the site. The exploratory test borings are representative of conditions encountered only at the exact test boring locations. Variations in the subsoil conditions not indicated by the test borings are always possible. Our representative should observe the open foundation excavations, observe proof roll and to test compaction of subgrade and structural fill, as applicable to confirm soils are as anticipated from the borings and foundations are prepared as recommended.

The scope of work performed is specific to the proposed construction and the client identified by this report. Any other use of the data, recommendations and design parameters (as applicable) provided within this report are not appropriate applications. Other proposed construction and/or reliance by other clients will require project specific review by this firm. Changes in site conditions can occur with time. Changes in standard of practice also occur with time. This report should not be relied upon after a period of three years from the date of this report and is subject to review by this firm in light of new information that may periodically become known.

We believe this investigation was conducted in a manner consistent with that level of care and skill ordinarily used by geotechnical engineers practicing in this area at this time. No other warranty, express or implied, is made. If we can be of further service in discussing the contents of this report or the analysis of the influence of the subsurface conditions on the design of the proposed construction, please call.

Sincerely,
GEOTECHNICAL ENGINEERING GROUP, INC.

Reviewed by:

Robert W. Anderson
Staff Engineer

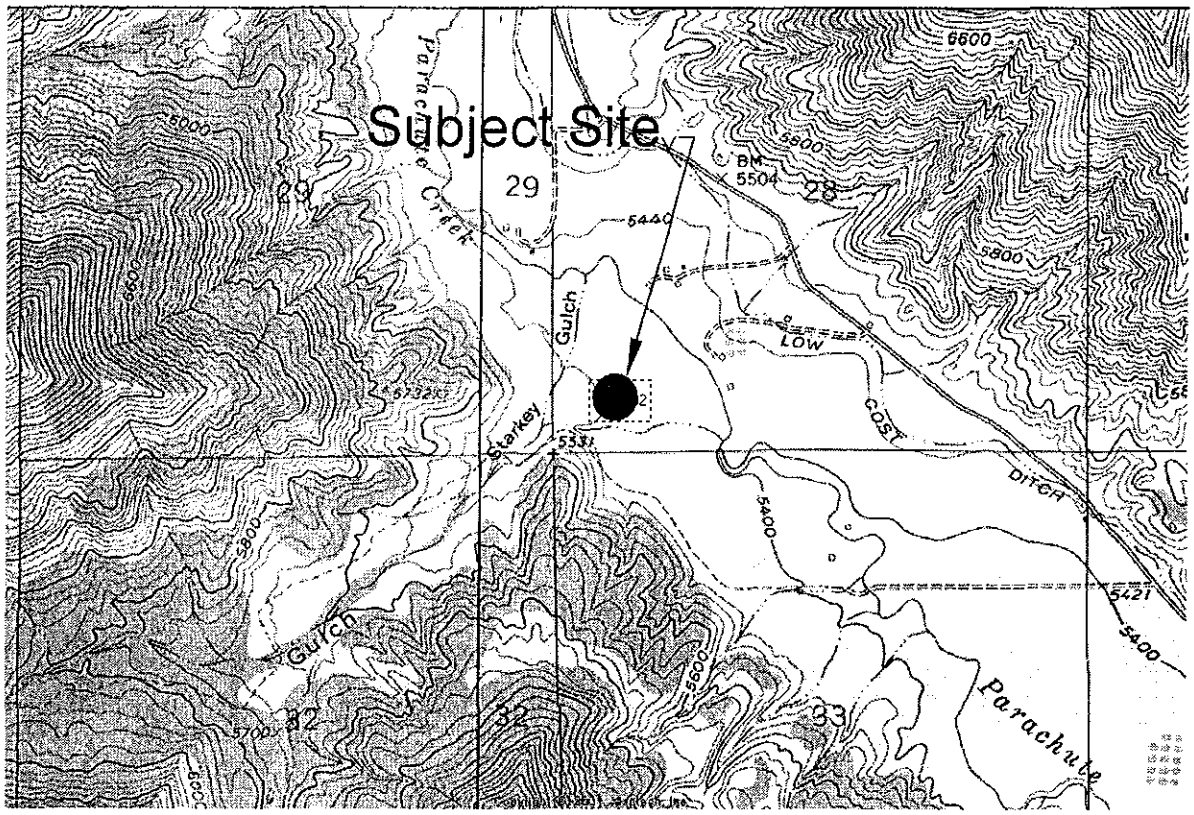
Norman W. Johnston, P.E.
Senior Engineer

COLORADO REGISTERED NORMAN W. JOHNSTON 22644 17 May 07 PROFESSIONAL ENGINEER

RWA:NWJ:mh
(3 copies sent)

Geotechnical Investigation
Williams III New Tank Site
SW 1/4 Section 28, Township 6S, Range 96W
6th Principal Meridian
Garfield County, Colorado

N
No Scale

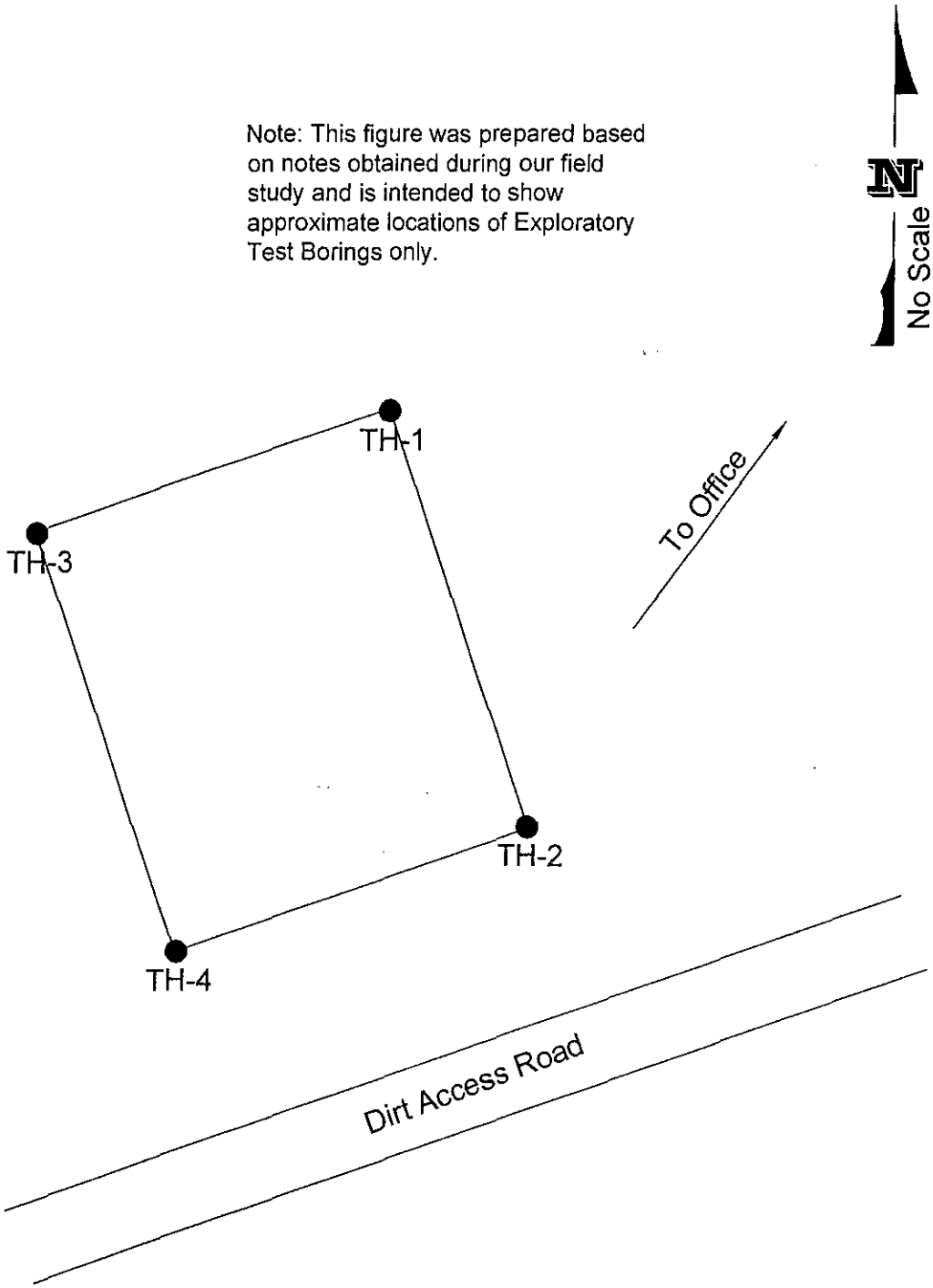


Job No. 2,659

Vicinity Map

Fig. 1

Note: This figure was prepared based on notes obtained during our field study and is intended to show approximate locations of Exploratory Test Borings only.



Legend

● Indicates approximate locations of Exploratory Test Borings.

Job No. 2,659 Location of Exploratory Borings Fig. 2

Geotechnical Engineering Group, Inc.

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Fill
	Clayey gravel
	Clay, Sandy
	Gravelly, clayey, sand
Misc. Symbols	
	Water table during drilling
	Water table 2 days after drilling

Notes:

1. These logs are subject to the interpretation by GEG of the soils encountered and limitations, conclusions, and recommendations in this report.

2. Results of tests conducted on samples recovered are reported in the report

Figure 3

Geotechnical Engineering Group, Inc.

LOG OF TEST BORING TH-1

PROJECT: Williams III New Tank Site — PROJECT NO.: 2659
CLIENT: Williams Production
LOCATION: See Fig 2 — ELEVATION: Unknown
DRILLER: WJ — LOGGED BY: GM
DEPTH TO WATER> INITIAL: ▽ 27 — AFTER 24 HOURS: ▽ 27
DATE: 3/22/2007 — DEPTH TO CAVING: ℄ None

Depth (feet)	Description	Graphic	Sample Type	Blow Counts	Notes
0					
	Clay, gravelly, moist, (Fill) Bulk sample taken at 1 to 8 feet				
5			Bulk CT	7/13	
	Clay, silty, gravelly, slightly sandy, medium stiff to stiff, moist to wet, brown, (CL/GC)				
10			CT	7/12	Soil related chemicals such as salts noted
15			CT	11/12	Soil related chemicals such as salts noted
20			CT	9/12	Soil related chemicals such as salts noted
25	▽				
30			CT	6/12	
	Bottom of boring when terminated: 30 ft.				
35					

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Geotechnical Engineering Group, Inc.

LOG OF TEST BORING TH-2

PROJECT: Williams III New Tank Site — PROJECT NO.: 2659
CLIENT: Williams Production
LOCATION: See Fig 2 — ELEVATION: Unknown
DRILLER: WJ — LOGGED BY: GM
DEPTH TO WATER> INITIAL: ▽ None Found — AFTER 24 HOURS: ▽ Backfilled
DATE: 3/22/2007 — DEPTH TO CAVING: ℄ None

Depth (feet)	Description	Graphic	Sample Type	Blow Counts	Notes
0	Gravel, sandy, moist, (Fill) Bulk sample taken at 1 to 8 feet		Bulk CT	8/12	
7.5	Clay, sandy, slightly silty, slightly gravelly, very stiff, moist, brown, (CL)		CT	30/12	
12	Clay, sandy, gravelly, slightly silty, stiff, moist, brown, (CL/GC)		CT	15/12	Soil related chemicals such as salts noted
17	Clay, silty, sandy, slightly gravelly, stiff, moist, brown, (CL)		CT	9/12	Soil related chemicals such as salts noted
			CT	13/12	Soil related chemicals such as salts noted
29	Clay, gravelly, slightly silty, slightly sandy, medium dense, moist, brown, (CL/GC)		CT	15/12	
30	Bottom of boring when terminated: 30 ft.				
35					

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Geotechnical Engineering Group, Inc.

LOG OF TEST BORING TH-3

PROJECT: Williams III New Tank Site — PROJECT NO.: 2659
CLIENT: Williams Production
LOCATION: See Fig 2 — ELEVATION: Unknown
DRILLER: WJ — LOGGED BY: GM
DEPTH TO WATER> INITIAL: ▼ None Found — AFTER 24 HOURS: ▼ Backfilled
DATE: 3/22/2007 — DEPTH TO CAVING: ℄ None

Depth (feet)	Description	Graphic	Sample Type	Blow Counts	Notes
0	Clay, gravelly, moist, (Fill) Bulk sample taken at 1 to 8 feet				
3	Clay, sandy, gravelly, slightly silty, very stiff, moist, brown, (CL/GC)		Bulk CT	31/12	Soil related chemicals such as salts noted
6	Clay, sandy, slightly silty, very stiff to medium stiff, moist, brown, (CL)		CT	23/12	Soil related chemicals such as salts noted
15			CT	9/12	Soil related chemicals such as salts noted
20			CT	8/12	
25			CT	6/12	
29					
30	Clay, gravelly, sandy, stiff, very moist, brown, (CL/GC)		CT	9/12	
	Bottom of boring when terminated: 30 ft.				
35					

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Geotechnical Engineering Group, Inc.

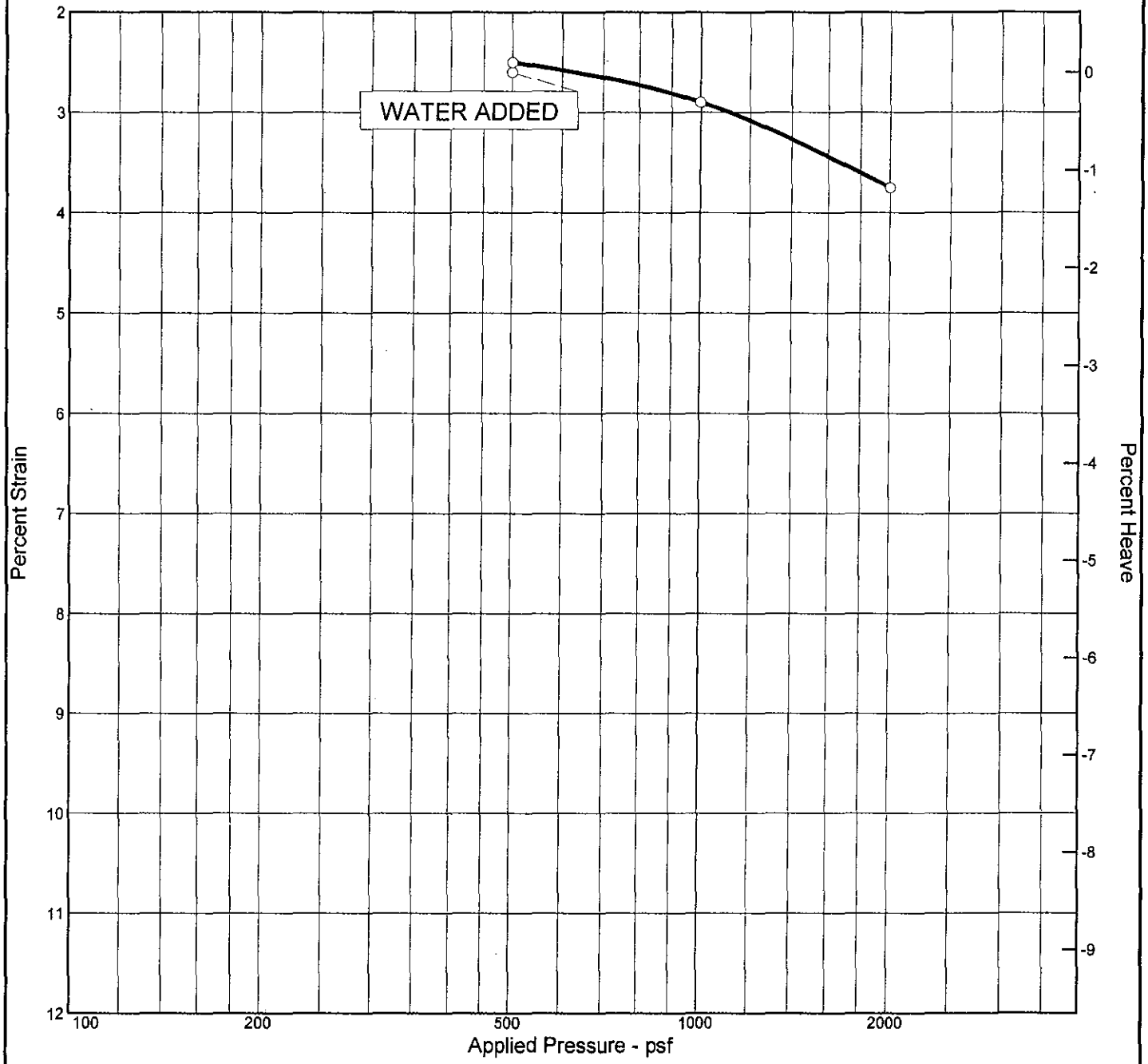
LOG OF TEST BORING TH-4

PROJECT: Williams III New Tank Site — PROJECT NO.: 2659
CLIENT: Williams Production
LOCATION: See Fig 2 — ELEVATION: Unknown
DRILLER: WJ — LOGGED BY: GM
DEPTH TO WATER> INITIAL: ▽ None Found — AFTER 24 HOURS: ▽ Backfilled
DATE: 3/22/2007 — DEPTH TO CAVING: C None

Depth (feet)	Description	Graphic	Sample Type	Blow Counts	Notes
0	Clay, silty, sandy, moist, brown, (CL) Bulk sample taken at 1 to 8 feet				
2	Clay, gravelly, stiff, (CL/GC)		Bulk CT	37/12	
6	Clay, sandy, slightly silty, slightly gravelly, very stiff to stiff, moist, (CL)		CT	19/12	Soil related chemicals such as salts noted
15			CT	22/12	Soil related chemicals such as salts noted
20			CT	10/12	
30			CT	11/9	
	Bottom of boring when terminated: 30 ft.				

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

SWELL / CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_r	Swell Press. (psf)	Heave %	e_o
Sat.	Moist.											
	16.8 %	111.2					1071			630	0.1	

MATERIAL DESCRIPTION	USCS	AASHTO
Clay, silty, gravelly, moist, brown		

Project No. 2659 **Client:** Williams Production

Project: Williams III New Tank Site

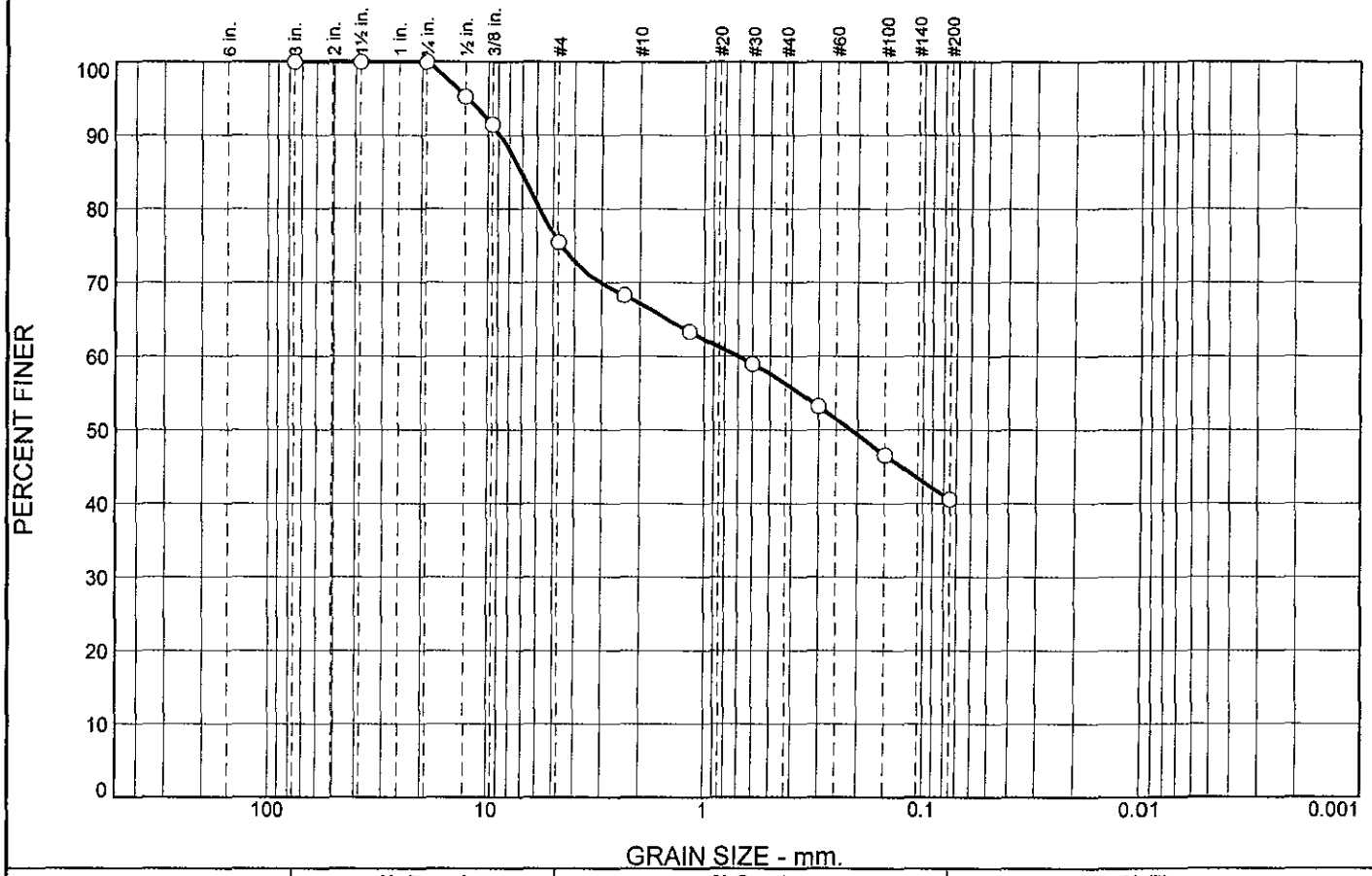
Source: TH-1 **Elev./Depth:** 9

Geotechnical Engineering Group, Inc.

Remarks:

Fig. 8

Gradation Test Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	24	9	11	15	41	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100		
1.5	100		
.75	100		
.5	95		
.375	91		
#4	76		
#8	68		
#16	63		
#30	59		
#50	53		
#100	47		
#200	41		

* (no specification provided)

Material Description

Bulk sample taken at 1 to 8 feet

Atterberg Limits (ASTM D 4318)

PL= 14 LL= 27 PI= 13

Classification

USCS= SC AASHTO= A-6(2)

Coefficients

D_{85}= 7.0853 D_{60}= 0.6969 D_{50}= 0.2141
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Date Tested: **Tested By:**

Remarks

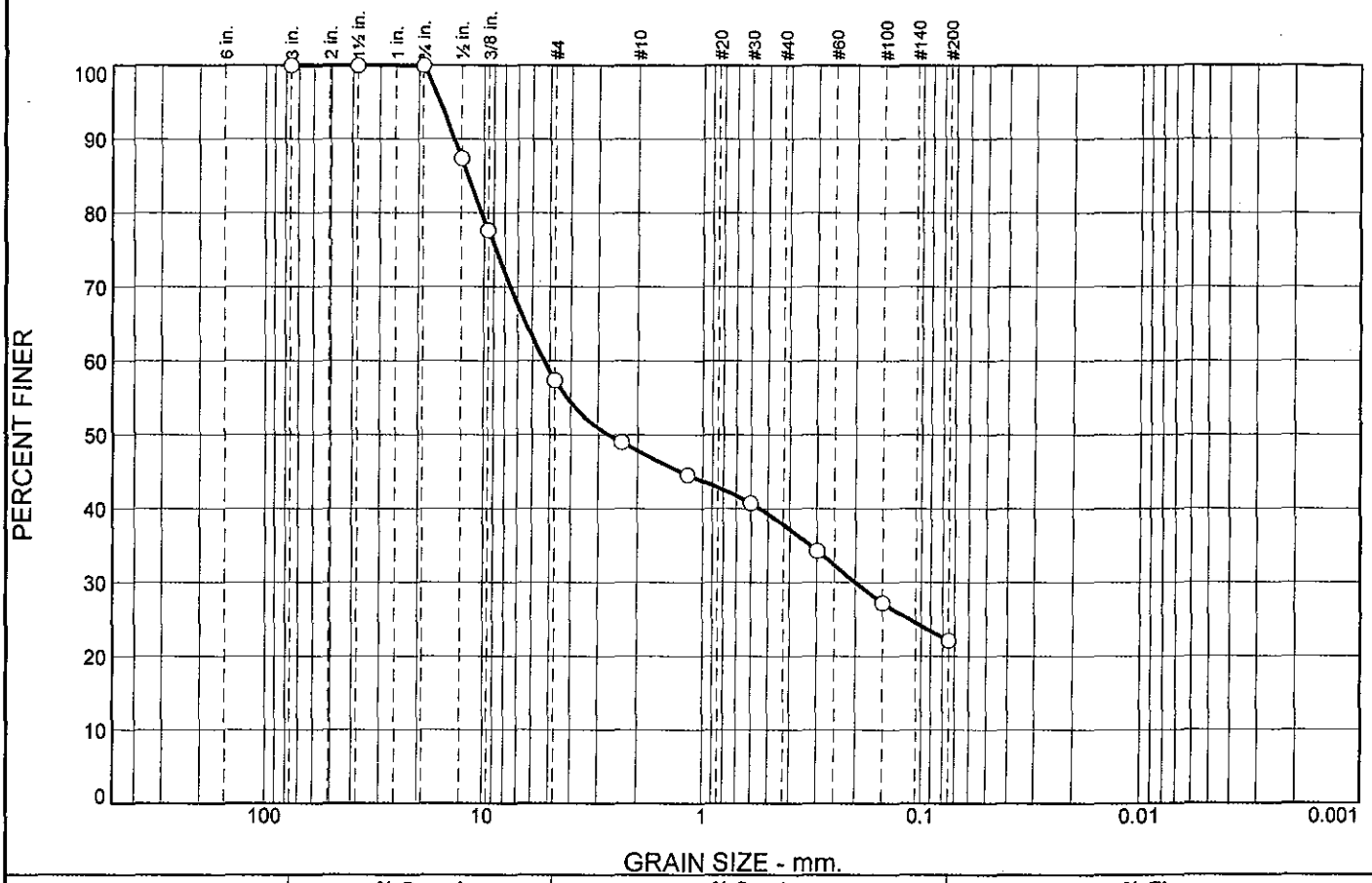
Sample No.: **Source of Sample:** TH-1 **Date Sampled:**
Location: **Elev./Depth:** 1-8
Checked By: **Title:**

Geotechnical Engineering Group, Inc.

Client: Williams Production
Project: Williams III New Tank Site

Project No: 2659 **Fig.** 10

Gradation Test Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	43	9	10	16	22	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100		
1.5	100		
.75	100		
.5	87		
.375	78		
#4	57		
#8	49		
#16	45		
#30	41		
#50	34		
#100	27		
#200	22		

* (no specification provided)

Material Description

Bulk sample taken at 1 to 8 feet

Atterberg Limits (ASTM D 4318)

PL= 19 LL= 25 PI= 6

Classification

USCS= GC-GM AASHTO= A-1-b

Coefficients

D_{85}= 11.8580 D_{60}= 5.3245 D_{50}= 2.6914
D_{30}= 0.1996 D_{15}= D_{10}=
C_u= C_c=

Date Tested: **Tested By:**

Remarks

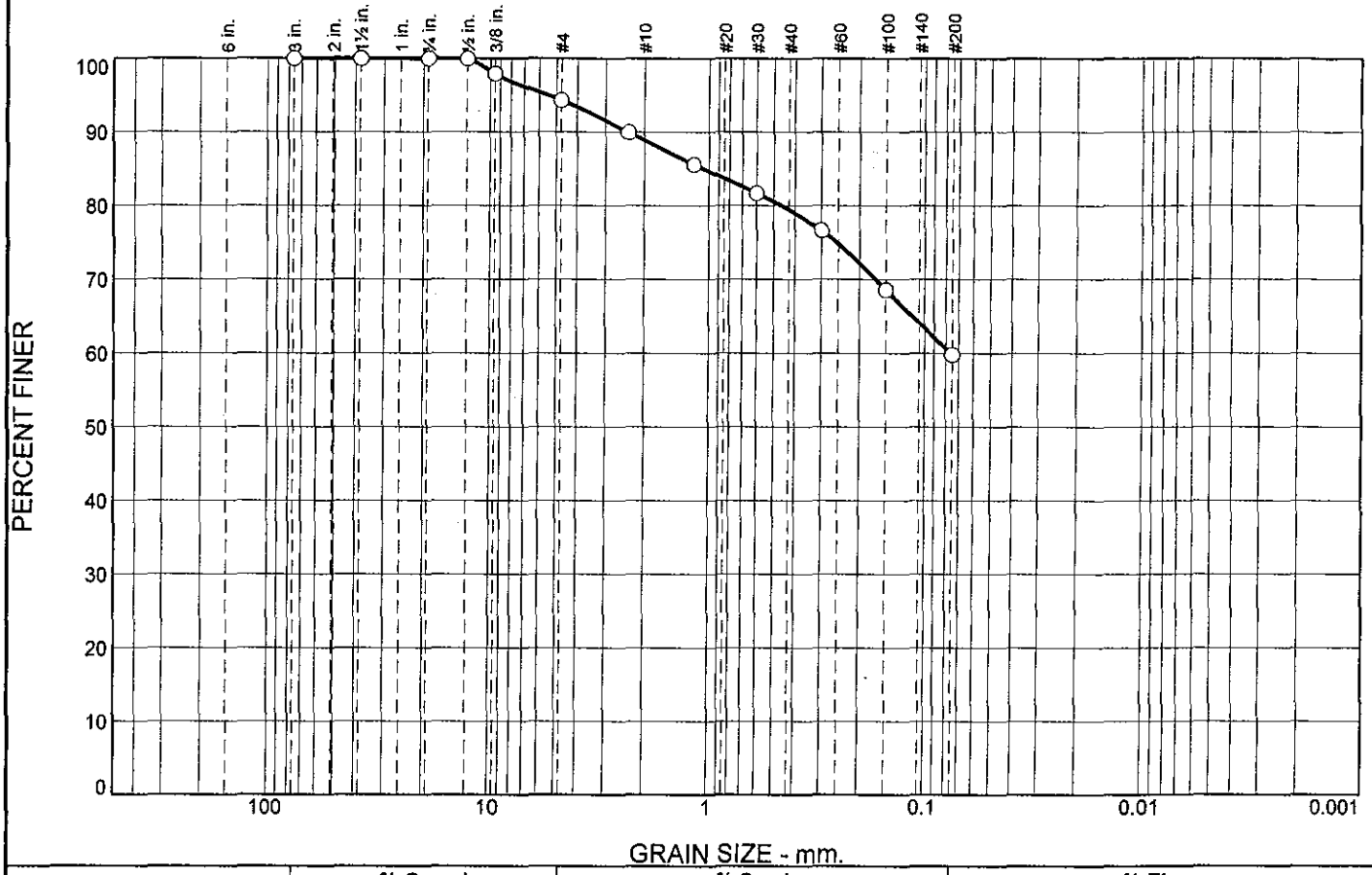
Sample No.: **Source of Sample:** TH-2 **Date Sampled:**
Location: **Elev./Depth:** 1-8
Checked By: **Title:**

Geotechnical Engineering Group, Inc.

Client: Williams Production
Project: Williams III New Tank Site

Project No: 2659 **Fig.** 11

Gradation Test Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	6	5	9	20	60	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100		
1.5	100		
.75	100		
.5	100		
.375	98		
#4	94		
#8	90		
#16	86		
#30	82		
#50	77		
#100	69		
#200	60		

* (no specification provided)

Material Description

Atterberg Limits (ASTM D 4318)

PL= 13 LL= 32 PI= 19

Classification

USCS= CL AASHTO= A-6(8)

Coefficients

D_{85}= 1.0594 D_{60}= 0.0761 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Date Tested: 3/29/2007 **Tested By:** MT

Remarks

Sample No.: **Source of Sample:** TH 3&4 **Date Sampled:**
Location: **Elev./Depth:** 1-8
Checked By: TM **Title:**

Geotechnical Engineering Group, Inc.

Client: Williams Production
Project: Williams III New Tank Site

Project No: 2659 **Fig.** 12

Moisture-Density Relationship Curve (Proctor)

Geotechnical Engineering Group, Inc.

Curve No.: 1

Project No.: 2659 **Date:** 4/2/2007

Project: Williams III New Tank Site

Source: TH 3&4 **Elev./Depth:** 1-8 **Sample No.**

Remarks:

MATERIAL DESCRIPTION

Description: Clay, sandy, gravelly, moist, brown

Classifications - **USCS:** CL **AASHTO:** A-6(8)

Nat. Moist. = 8.7 % **Sp.G. =**

Liquid Limit = 32 **Plasticity Index =** 19

% > 3/4 in. = 0.0 % **% < No.200 =** 60 %

TEST RESULTS
Maximum dry density = 116.5 pcf
Optimum moisture = 13.5 %

Test specification:
ASTM D 698-00a Method C Standard

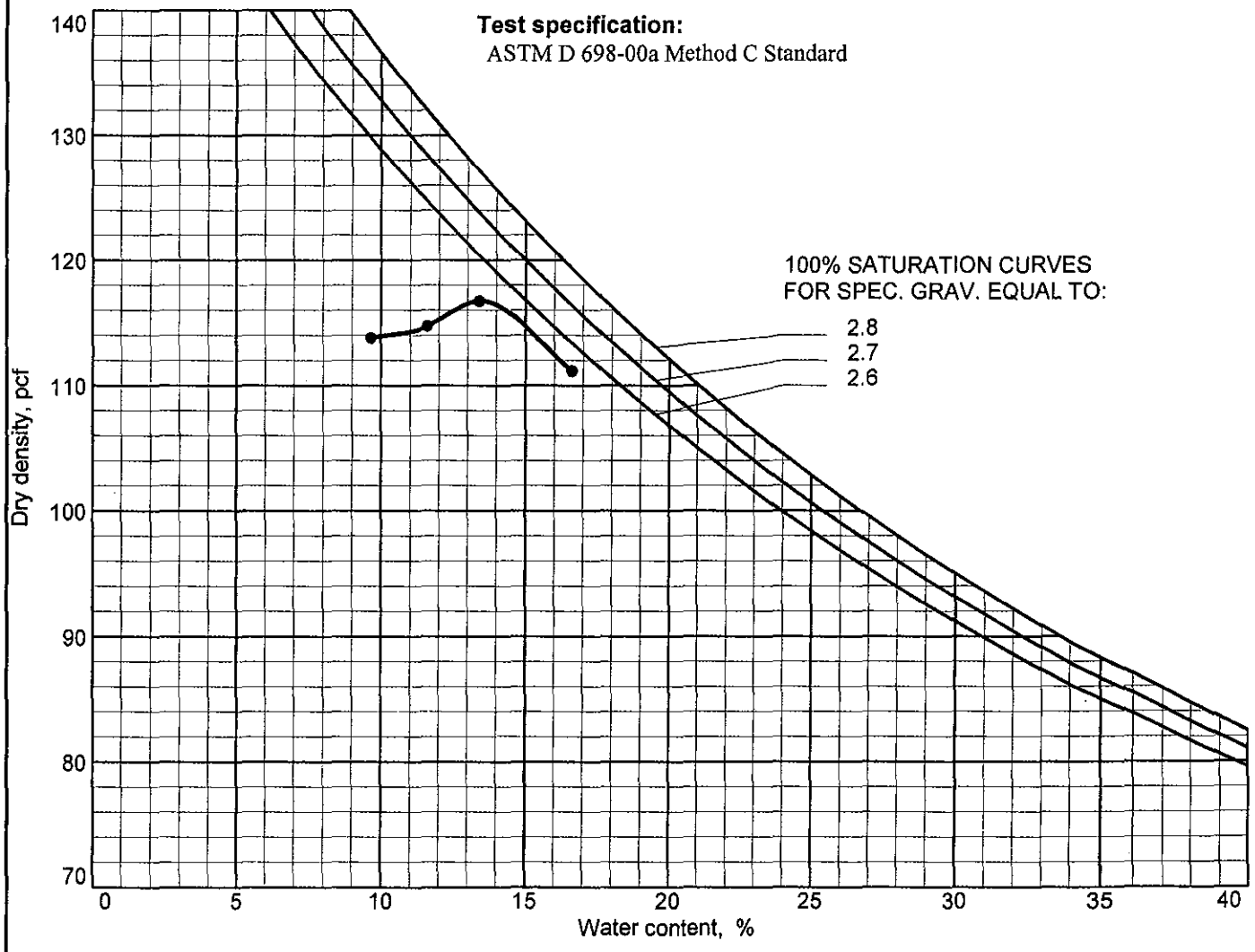
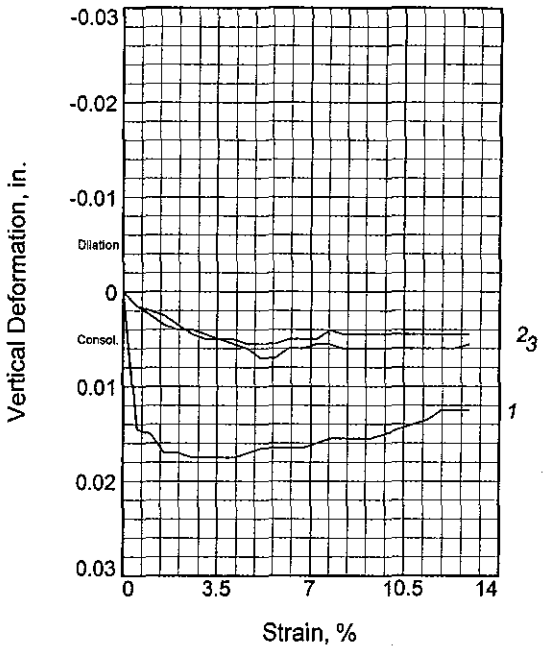
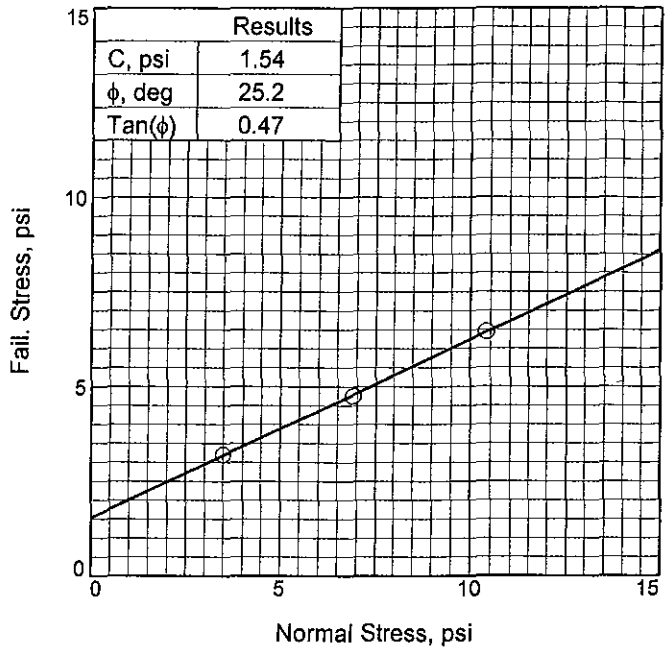
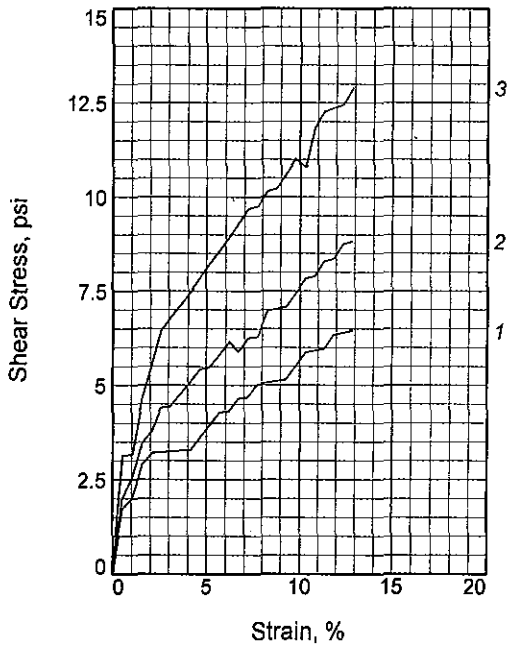


Fig. 13





Results	
C, psi	1.54
ϕ, deg	25.2
Tan(ϕ)	0.47



Sample No.		1	2	3
Initial	Water Content, %	15.7	15.7	15.7
	Dry Density, pcf	109.0	109.0	109.0
	Saturation, %	80.5	80.5	80.5
	Void Ratio	0.5172	0.5172	0.5172
	Diameter, in.	1.94	1.94	1.94
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	21.3	21.3	21.3
	Dry Density, pcf	109.0	109.0	109.0
	Saturation, %	109.2	109.2	109.2
	Void Ratio	0.5172	0.5172	0.5172
	Diameter, in.	1.94	1.94	1.94
	Height, in.	1.00	1.00	1.00
Normal Stress, psi		3.50	6.90	10.40
Fail. Stress, psi		3.21	4.76	6.46
Strain, %		2.1	3.6	2.6
Ult. Stress, psi				
Strain, %				
Strain rate, in./min.		0.63	0.63	0.63

Sample Type:
Description:

LL= 28 **PL=** 15 **PI=** 13
Assumed Specific Gravity= 2.65
Remarks:

Client: Williams Production

Project: Williams III New Tank Site

Source of Sample: TH-2 **Depth:** 19

Proj. No.: 2659 **Date Sampled:**

Geotechnical Engineering Group, Inc.

Fig. 14

Tested By: MT **Checked By:** TM

Geotechnical Engineering Group, Inc.

Job No. 2,659

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

Hole	Depth (feet)	Natural Moisture (%)	Dry Density (pcf)	Atterberg Limits		Swell / Consolidation		Direct Shear		Passing No. 200 Sieve (%)	Water Soluble Sulfates (ppm)	Soil Type
				Liquid Limit (%)	Plasticity Index (%)	Swell (%)	Confining Pressure (psf)	Internal Angle of Friction (Degrees)	Cohesion (psf)			
TH-1	1-8	6.3	-	27	13	-	-	-	-	41	110	Sand, Clayey, Gravel (SC)
	9	16.8	111	-	-	0.1	500	-	-	-	-	Clay, Sandy, Gravelly (CL)
	14	22.1	95	30	9	-	-	-	-	71	13,000	Clay, Sandy (CL)
TH-2	1-8	4.6	-	25	6	-	-	-	-	22	69	Gravel, Sandy, Clayey (GC)
	4	9.0	98	26	13	-	-	-	-	27	-	Gravel, Sandy, Clayey (GC)
	19	15.7	101	28	13	-	-	25	220	44	-	Sand, Clayey (SC)
TH-3	1-8	6.3	-	28	15	-	-	-	-	63	1,000	Clay, Sandy, Gravelly (CL)
	14	13.7	110	-	-	-0.2	500	-	-	-	-	Clay, Sandy (CL)

Geotechnical Engineering Group, Inc.

Job No. 2,659

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

Hole	Depth (feet)	Natural Moisture (%)	Dry Density (pcf)	Atterberg Limits		Swell / Consolidation		Direct Shear		Passing No. 200 Sieve (%)	Water Soluble Sulfates (ppm)	Soil Type
				Liquid Limit (%)	Plasticity Index (%)	Swell (%)	Confining Pressure (psf)	Internal Angle of Friction (Degrees)	Cohesion (psf)			
TH-4	1-8	5.5	-	28	14	-	-	-	-	60	1,000	Clay, Sandy, Gravelly (CL)
	9	8.1	109	24	9	-	-	-	-	65	11,000	Clay, Sandy (CL)
	19	15.4	106	-	-	-	-	-	-	-	-	Clay, Sandy (CL)

Geotechnical Engineering Group, Inc.

Job No. 2,659

TABLE II

SUMMARY OF LABORATORY TEST RESULTS

HOLE	DEPTH (FEET)	Atterberg Limits		PASSING NO. 200 SIEVE	Standard Proctor (ASTM D698)		CBR VALUE	WATER SOLUBLE SULFATES (ppm)	SOIL TYPE
		LIQUID LIMIT (%)	PLASTICITY INDEX (%)		MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)			
TH- 3 & 4	1-8	32	19	60	116.5	13.5	-	-	Clay, Sandy, Gravelly (CL)

APPENDIX A

SAMPLE SITE GRADING SPECIFICATIONS

SAMPLE SITE GRADING SPECIFICATIONS

New Holding Tank
Garfield County, Colorado
Job No. 2,659

(Note: Appendix A presents sample specifications. These sample specifications are not project specific. The sample specifications should be modified by the Architect, Civil engineer or Structural engineer as needed to reflect project specific requirements.)

1. DESCRIPTION

This item shall consist of the excavation, transportation, placement and compaction of materials from locations indicated on the plans, or staked by the Engineer, as necessary to achieve preliminary street and over lot elevations. These specifications shall also apply to compaction of excess cut materials that may be placed outside of the subdivision and/or filing boundaries.

2. GENERAL

The Soils Engineer shall be the Owner's representative. The Soils Engineer shall approve fill materials, method of placement, moisture contents and percent compaction, and shall give written approval of the completed fill.

3. CLEARING JOB SITE

The Contractor shall remove all trees, brush, and rubbish before excavation or fill placement is begun. The Contractor shall dispose of the cleared material to provide the Owner with a clean, neat appearing job site. Cleared material shall not be placed in areas to receive fill or where the material will support structures of any kind.

4. REMOVAL OF PREVIOUS FILL

The contractor shall expose fill subgrade entirely and remove all existing previous fill, organics and deleterious materials. These materials shall be completely removed from the proposed fill area. These materials shall be removed until the removal is as deemed satisfactory by the Soils Engineer.

5. SCARIFYING AREA TO BE FILLED

All topsoil and vegetable matter shall be removed from the ground surface upon which fill is to be placed. The surface shall then be plowed or scarified until the surface is free from ruts, hummocks or other uneven features, which would prevent uniform compaction by the equipment to be used.

6. COMPACTING AREA TO BE FILLED

After the foundation for the fill has been cleared and scarified, it shall be disked or bladed until it is free from large clods, brought to the proper moisture content (within 2 percent above or below optimum) and compacted to not less than 95 percent of maximum density as determined in accordance with ASTM D 698.

7. FILL MATERIALS

Fill soils shall be free from vegetable matter or other deleterious substances, and shall not contain rocks or lumps having a diameter greater than six (6) inches. Fill materials shall be obtained from cut areas shown on the plans or staked in the field by the Engineer.

On-site materials classifying as CL, CH, SC, SM, SW, SP, GP, GC and GM are acceptable. Concrete, asphalt, organic matter and other deleterious materials or debris shall not be used as fill.

8. MOISTURE CONTENT

Fill materials shall be moisture treated to within 2 percent below to 2 percent above optimum moisture content specified for soils classifying as CH. Non-expansive soils classifying as CL, SC, SM, SP, GP, GC and GM shall be moisture treated to within 2 ± percent of optimum moisture content as determined from Proctor compaction tests. Sufficient laboratory compaction tests shall be made to determine the optimum moisture content for thee various soils encountered in borrow areas.

The Contractor may be required to add moisture to the excavation materials in the borrow area if, in the opinion of the Soils Engineer, it is not possible to obtain uniform moisture content by adding water on the fill surface. The Contractor may be required to rake or disk the fill soils to provide uniform moisture content through the soils.

The application of water to embankment materials shall be made with any type of watering equipment approved by the Soils Engineer, which will give the desired results. Water jets from the spreader shall not be directed at the embankment with such force that fill materials are washed out.

Should too much water be added to any part of the fill, such that the material is too wet to permit the desired compaction from being obtained, rolling and all work on that section of the fill shall be delayed until the material has been allowed to dry to the required moisture content. The Contractor will be permitted to rework wet material in an approved manner to hasten its drying.

9. COMPACTION OF FILL AREAS

Selected fill material shall be placed and mixed in evenly spread layers. After each fill layer has been placed, it shall be uniformly compacted to not less than the specified percentage of maximum density. Expansive soils classifying as CL, CH, or SC shall be compacted to at least 95 percent of the maximum dry density as determined in accordance with ASTM D 698 (100 percent for fill deeper than 15 feet below final grade). At the option of the Soils Engineer, soils classifying as SW, SP, GP, GC or GM may be compacted to 90 percent of the maximum density as determined in accordance with ASTM D 1557 (95 percent for fill deeper than 15 feet below final grade). Fill materials shall be placed such that the thickness of loose material does not exceed 10 inches and the compacted lift thickness does not exceed 6 inches.

Compaction, as specified above, shall be obtained by the use of sheepsfoot rollers, multiple-wheel pneumatic-tired rollers, or other equipment approved by the Engineer for soils classifying as CL, CH, or SC. Granular fill shall be compacted using vibratory equipment or other equipment approved by the Soils Engineer. Compaction shall be accomplished while the fill material is at the specified moisture content. Compaction of each layer shall be continuous over the entire area. Compaction equipment shall make sufficient trips to insure that the required density is obtained.

10. COMPACTION OF SLOPES

Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compaction operations shall be continued until slopes are stable, but not too dense for planting, and there is no appreciable amount of loose soil on the slopes. Compaction of slopes may be done progressively in increments of three to five feet (3' to 5') in height or after the fill is brought to its total height. Permanent fill slopes shall not exceed 3:1 (horizontal to vertical).

11. DENSITY TESTS

Field density tests shall be made by the Soils Engineer at locations and depths of his choosing. Where sheepsfoot rollers are used, the soil may be disturbed to a depth of several inches. Density tests shall be taken in compacted material below the disturbed surface. When density tests indicate that the density or moisture content of any layer of fill or portion thereof is below that required, the particular layer or portion shall be reworked until the required density or moisture content has been achieved.

12. COMPLETED PRELIMINARY GRADES

All areas, both cut and fill, shall be finished to a level surface and shall meet the following limits of construction:

A. Overlot cut or fill areas shall be within plus or minus 2/10 of one foot.

B. Street grading shall be within plus or minus 1/10 of one foot.

The civil engineer, or duly authorized representative, shall check all cut and fill areas to observe that the work is in accordance with the above limits.

13. SUPERVISION AND CONSTRUCTION STAKING

Observation by the Soils Engineer shall be continuous during the placement of fill and compaction operations so that he can declare that the fill was placed in general conformance with specifications. All inspections necessary to test the placement of fill and observe compaction operations will be at the expense of the Owner. All construction staking will be provided by the Civil Engineer or his duly authorized representative. Initial and final grading staking shall be at the expense of the owner. The replacement of grade stakes through construction shall be at the expense of the contractor.

14. SEASONAL LIMITS

No fill material shall be placed, spread or rolled while it is frozen, thawing, or during unfavorable weather conditions. When work is interrupted by heavy precipitation, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed materials are as specified.

15. NOTICE REGARDING START OF GRADING

The contractor shall submit notification to the Soils Engineer and Owner advising them of the start of grading operations at least three (3) days in advance of the starting date. Notification shall also be submitted at least 3 days in advance of any resumption dates when grading operations have been stopped for any reason other than adverse weather conditions.

16. REPORTING OF FIELD DENSITY TESTS

Density tests made by the Soils Engineer, as specified under "Density Tests" above, shall be submitted progressively to the Owner. Dry density, moisture content, of each test taken and percentage compaction shall be reported for each test taken.

17. DECLARATION REGARDING COMPLETED FILL

The Soils Engineer shall provide a written declaration stating that the site was filled with acceptable materials, or was placed in general accordance with the specifications.

18. DECLARATION REGARDING COMPLETED GRADE ELEVATIONS

A registered Civil Engineer or licensed Land Surveyor shall provide a declaration stating that the site grading has been completed and resulting elevations are in general conformance with the accepted detailed development plan.

CORDILLERAN

826 21½ Road
Grand Junction, CO 81505
T: 970.263.7800
F: 970.263.7456

June 19, 2007

Williams Production RMT Company
4289 County Road 215
PO Box 370
Parachute, Colorado 81635
Attn: Mr. Eric Miller

RE: Parachute NGL Storage Area

Dear Mr. Miller:

Concerning the Parachute NGL storage facility and associated secondary containment proposed by Williams Production RMT Company; the intent of the Federal Spill Prevention Control and Countermeasure (SPCC) regulations is to prevent spilled or released oil from reaching navigable waters of the United States. While tank-specific or vessel-specific secondary containment (in the form of dikes, berms, or retaining walls) is one way to achieve this, it is not the only or required method. Furthermore, if a secondary containment option is chosen as a spill prevention measure, the containment structure or material must be shown to be "sufficiently impervious" to the stored material in order to prevent any spilled or released oil from being discharged from the location into or toward surface water or ground water resources.

Title 40 of the Code of Federal Regulations, Part 112.7, Paragraph (c) (40 CFR 112.7(c)) is the portion of the SPCC regulation that addresses secondary containment. There is no requirement for a containment system to be lined stated in this paragraph or elsewhere in the SPCC rules. A liner can be a quick and effective method to provide an impervious secondary containment, but a liner system is not required by law. The United States Environmental Protection Agency (enforcement agency for the SPCC regulations) gives the operator and the reviewing professional engineer flexibility in designing and constructing secondary containment to be sufficiently impervious to hold spilled oil materials until cleanup can occur, or in providing other means of spill/discharge prevention if such containment structures are impracticable.

If you have any questions or comments regarding this information, please do not hesitate to contact me.

Sincerely,
Cordilleran Compliance Services, Inc.

Dion Plsek, P.E.
Principal Engineer

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

PARACHUTE CREEK GAS PLANT
PHASE 1 PLANT AREA
PHASE 2 PLANT AREA
PHASE 3 PLANT AREA
GARFIELD COUNTY, COLORADO

PREPARED FOR:

WILLIAMS PRODUCTION RMT COMPANY
P.O. Box 370
Parachute, Colorado 81635

REVISION DATE:
March 2007

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Section **Page No.**

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FIGURES

APPENDICES

SECTION 1.0 MANAGEMENT COMMITMENT CERTIFICATION

Management approval has been extended at a level with authority to commit the necessary resources to implement this Spill Prevention, Control and Countermeasure (SPCC) plan. Pursuant to §112.7(d), this is the written commitment of Williams Production RMT Company (Williams) to provide the manpower, equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful to human health and the environment. A copy of this plan shall be maintained by the operator as described herein and will be made available to the EPA Regional Administrator for on-site review during normal working hours.

Authorized Management Representative:

Signature:_____

Name: Steve Soychak

Title: District Manager

Date:_____

SECTION 2.0 ENGINEERING CERTIFICATION

Pursuant to §112.3(d) and by means of this certification, I attest that:

- I am familiar with the requirements of the SPCC rule (40 CFR 112);
- The facility has been visited and examined by myself or my agent;
- This plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of the SPCC rule;
- Procedures for required inspections and testing have been established; and,
- This plan is adequate for the facility.

Signature of Professional Engineer

COLORADO REGISTERED MICHAEL PLSEK 36228 PROFESSIONAL ENGINEER

3/1/07
Date

36228
State Registration No.

Colorado
State

Note: The PE's certification does not relieve the owner/operator of the facility of the duty of fully implementing the SPCC plan in accordance with all applicable requirements.

SECTION 3.0 INTRODUCTION

The Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, authorized the establishment of procedures, methods, equipment and other requirements for the prevention and/or containment of discharges of oil and hazardous substances from vessels and onshore and offshore facilities. In partial response to this authorization, the U.S. Environmental Protection Agency (USEPA) issued Oil Pollution Prevention Regulations for Non-Transportation Related Onshore and Offshore Facilities on December 11, 1973 (effective on January 10, 1974). These regulations were published under title 40 of the Code of Federal Regulations (CFR), Part 112 and specifically outlined requirements for the preparation of Spill Prevention, Control and Countermeasure (SPCC) plans.

On July 17, 2002 the USEPA published modifications to the SPCC requirements in the Federal Register (68 FR, 47042-47152). This SPCC plan has been prepared in accordance with these revised regulations. The SPCC regulations and additional information can be found at: http://www.epa.gov/oilspill/spcc.htm.

The following sections of this plan are presented in the sequence of the SPCC rule, as required by the rule. The substantive requirements (§112.7 and §112.9) are addressed in Sections 6 and 8, respectively. Throughout this plan, where applicable, references to the appropriate subsections of 40 CFR Part 112 are provided, followed by an explanation of how the requirements have been addressed.

SECTION 4.0 GENERAL APPLICABILITY

The Oil Pollution Prevention Regulations (40 CFR Part 112) require preparation of an SPCC plan for facilities that have discharged or could reasonably be expected to discharge oil into or upon navigable waters of the United States or adjoining shorelines. Specifically, §112.1(d)(2)(ii) requires an SPCC plan to be developed for facilities where the aggregate storage capacity of oil is greater than 1,320 gallons (inclusive of containers with thresholds of 55-gallons or greater). Because the Parachute Creek Gas Plant near Parachute, Colorado has a collective potential maximum above ground storage capacity of approximately 387,000 gallons, as well as individual stored volumes up to 45,000 gallons each, Williams is required to develop, implement and maintain an SPCC plan for this facility.

This SPCC plan has been developed for the Parachute Creek Gas Plant in response to the regulations listed above. The purpose of this plan is to identify sources of oil at the Parachute Creek Gas Plant and outline procedures to prevent the release of oil to navigable waters of the United States.

A release of oil is considered a *discharge* under this plan only if the release is into or upon the navigable waters of the United States, adjoining shorelines, or waters contiguous with the navigable waters of the United States. This is apparent if a release impacts surface water quality by causing a film, sheen or discoloration of the water surface or adjoining shorelines, or causes a sludge or emulsion to be deposited beneath the surface of the adjoining shorelines. Impacts to groundwater also apply if the groundwater is contiguous with navigable waters of the United States (i.e., groundwater discharges to/contributes to the total volume of a surface water body that is itself contiguous with navigable waters of the United States).

Any facility that could, because of its location, be expected to cause substantial harm to the environment by discharging oil into or on navigable waters or adjoining shorelines is required to prepare and submit a facility response plan (FRP) to the USEPA Regional Administrator (RA) in accordance with 40 CFR Part 112.20. The Parachute Creek Gas Plant is not considered such a facility because it does not meet any of the substantial harm criteria specified in §112.20. These criteria, and the associated applicability determination regarding the Parachute Creek Gas Plant, are shown in **Appendix A**. This appendix is the *Certification of the Applicability of the Substantial Harm Criteria* required by §112.20 and must be maintained at the facility. Because submittal of an FRP is not required, except at the discretion of the RA, this SPCC plan provides information and procedures for responding to discharges.

SECTION 5.0 SPCC PLAN ADMINISTRATION: §112.3, §112.4, AND §112.5

5.1 Requirement to Prepare: §112.3

This SPCC plan was prepared to comply with the SPCC rule (40 CFR Part 112) that was amended and promulgated on July 17, 2002. In accordance with §112.3(a) and the recent compliance timeline extension announced by the EPA, this plan was completed prior to and will be fully implemented prior to July 1, 2009.

In accordance with §112.3(e)(1) and (2), a complete updated copy of the SPCC Plan and associated files will be maintained at the plant site, and at the Williams district office in Parachute, Colorado. During normal working hours at the facility, the plan will be available to authorized representatives of Local, State or Federal governing agencies for on-site review and a copy will be submitted to the EPA if requested.

5.2 Amendment by Regional Administrator: §112.4

In accordance with §112.4(a), whenever more than 1,000-gallons of oil have been *discharged* in a single incident or more than 42-gallons of oil have been *discharged* in each of two incidents over a 12-month period, Williams will submit a report to the EPA RA within 60 days (refer to the definition of a discharge previously provided in Section 4). The report must include the following:

- §112.4(a)(1): Name of the facility;
- §112.4(a)(2): Name of the operator;
- §112.4(a)(3): Location of the facility;
- §112.4(a)(4): Maximum storage or handling capacity of the facility and the normal daily throughput;
- §112.4(a)(5): Corrective action and countermeasures that have been taken, including a description of equipment repairs and replacements;
- §112.4(a)(6): An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- §112.4(a)(7): The cause of such discharge as described in 40 CFR 112.1(b), including a failure analysis of the system or subsystem in which the failure occurred;

- §112.4(a)(8): Additional preventive measures taken or planned to minimize the possibility of recurrence; and

- §112.4(a)(9): Such other information as the Regional Administrator may reasonably require pertinent to the SPCC Plan or discharge.

In accordance with 40 CFR 112.4(c), copies of the incident report will also be forwarded to the representative/case manager designated by the appropriate local or tribal agency. Should the RA subsequently propose by certified mail or personal delivery that this SPCC plan be amended, in accordance with §112.4(e) Williams will:

- Submit arguments and supporting information in response to the proposed amendments within 30 days; or

- Amend this SPCC plan within 30 days and implement the amended plan within six months, unless otherwise authorized by the RA.

As required by §112.4(c), technical amendments to the plan will be certified by a Professional Engineer.

5.3 SPCC Plan Amendment by Owner/Operator: §112.5

In accordance with §112.5(a), when there is a change in facility design, construction, operation, or maintenance that materially affects the facility's potential for a discharge, Williams will amend this SPCC plan within six months of the change and implement the amended plan within six months of its completion.

In accordance with §112.5(b), Williams will also review this plan at least once every five years from the date of the last review. As a result of the review, the plan will be amended within six months of the review if more effective prevention and control technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge. The amended plan will be implemented within six months of its completion. The designated person accountable for oil spill prevention at the facility (the Principal Environmental Specialist, see Section 6.1) will document completion of each five year review, sign a statement as to whether the plan will be amended, and record the results in **Appendix B**.

As required by §112.5(c), technical amendments that require the application of good engineering practice will be certified by a Professional Engineer. Any such amendments to this SPCC plan shall be noted on the Amendment Log included in **Appendix B** of this SPCC plan. Entries into the log will indicate a general description of the changes that were made to the facility, the corresponding changes that were made to the SPCC plan, including plan section and page numbers, and the name and signature of the person making the changes. A new certification page will be signed, sealed and inserted into this plan to complete the amendment process.

Non-technical changes include, but are not limited to, such items as: contact lists, more stringent requirements for stormwater discharge to comply with NPDES rules, phone numbers, product changes (if the new product is compatible with conditions in the existing tank and secondary containment materials), and any other change which do not materially affect the facility's potential to discharge oil. If Williams' personnel are unsure whether the amendment is technical or non-technical, the amendments should be reviewed and certified by a Professional Engineer.

SECTION 6.0 SPCC PLAN GENERAL REQUIREMENTS: §112.7

This section presents facility-specific details associated with the general requirements for SPCC plans outlined in §112.7. As previously indicated in Sections 1,2 and 3, this SPCC plan has been prepared in accordance with good engineering practice, with management approval at a level with authority to commit the necessary resources for full implementation, and in the sequence of the rule.

6.1 General Facility Information

Name and type of facility:

The Parachute Creek Gas Plant is a natural gas processing and compression facility, owned and operated by Williams Production RMT Company. The Parachute Creek Gas Plant is considered a production facility, as it is upstream of associated custody transfer points to transportation-related systems.

Location of facility:

The Parachute Creek Gas Plant is located in the northeast quarter of the northeast quarter of Section 33 in Township 6 South, Range 96 West in Garfield County, Colorado. See **Figure 1** for additional site location information. The town of Parachute, Colorado, which lies approximately 4 miles west southeast of the facility, is the nearest population center.

Owner name and address:

Williams Production RMT Company
1515 Arapahoe, Tower 3, Suite 1000
Denver, Colorado 80202
(303) 573-3900

Designated personnel accountable for spill prevention:

Regional/District Contact
Mr. Steve Soychak
District Manager
Williams Production RMT Co.
P.O. Box 370
Parachute, Colorado 81635
(970) 285-9377 office
(970) 216-0922 mobile

SPCC Contact
Mr. Michael Gardner
Senior Environmental Specialist
Williams Production RMT Co.
1058 County Road 215
Parachute, Colorado 81635
(970) 263-2760 office
(970) 640-1855 mobile

Has the facility experienced a reportable oil spill (discharge) event during the past 12 months?

No, the facility has not experienced a reportable oil spill event during the 12 months preceding the certification date of this SPCC plan.

6.2 General Facility Description

The Parachute Creek Gas Plant is a natural gas processing and compression facility, owned and operated by Williams Production RMT Company. The facility is located in western Colorado, in Garfield County, on private property. The area surrounding the facility is considered multiple-use land and area activities include oil and gas exploration and production. The location of the plant is depicted on **Figure 1**. Details of the facility and oil storage areas at the facility are shown on **Figures 2, 3 and 4.**

According to U.S. Geological Survey topographic mapping sources (Parachute, Colorado quadrangle), the site lies at an approximate elevations of 5,410 feet above mean sea level, with shallow relief in the immediate vicinity of the site. Information from the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) indicates the soils in the area of the Parachute Creek Gas Plant are of the Arvada-Torrifluents-Heldt complex, which is described as follows:

These soils are deep, well drained to somewhat poorly drained, nearly level to gently sloping soils on benches, terraces, alluvial fans, and flood plains.

Arvada soils are on benches, terraces and fans. They are deep, well drained, and alkali affected. The surface layer is loam, the subsurface is strongly alkaline silty clay loam, and the substratum is silty clay loam.

Torrifluvents are on flood plains and low terraces. They are deep and well drained to somewhat well poorly drained. They are sandy loam or loam stratified with sand, gravel, or cobbles.

Heldt soils are on alluvial fans. They are deep and well drained. The surface and subsoil are clay loam, and the substratum is clay.

Parachute Creek, a perennial stream, is located approximately 750 feet southwest and down gradient of the Parachute Creek Gas Plant. Parachute Creek flows southeast to its confluence with the Colorado River, approximately 3.8 miles southeast of the site. There is also an irrigation drainage ditch, which flows intermittently, approximately 150 feet north and up gradient of the site. All existing drainages in the vicinity of the facility discharge to Parachute Creek. Drainage within the site boundary is governed by surface topography. Downhill slope direction arrows on **Figures 2, 3 and 4** indicate the predicted general direction of storm water flow to the south and west.

The facility consists of metering equipment, dehydration, separation, and processing equipment, above ground storage tanks, and piping systems. Products related to the maintenance and operation of the facility are stored in above ground storage tanks. Natural gas liquids are occasionally taken from the facility via tank truck. The facility operates 24 hours per day and is continuously manned by operations personnel. An inventory of all storage tanks at the facility is provided in Section 6.5. Williams has determined that specific liquids stored at the facility are considered oils for the purpose of this SPCC plan. The plant is considered a production facility and is hence subject to the specific SPCC requirements of 40 CFR §112.9 for onshore production facilities.

6.3 SPCC Plan Conformance and Deviations: §112.7(a)(1) and (2)

This SPCC plan conforms with and does not deviate from the applicable requirements of CFR 40 §112.7, as detailed in the subsequent sections of this SPCC plan. The Parachute Creek Gas Plant is an onshore production facility and is therefore subject to §112.9.

6.4 Facility Layout: §112.7(a)(3)

Oil storage areas at the facility are identified on **Figures 2, 3 and 4**. There are no completely buried or bunkered tanks at the facility, or buried pipelines related to the handling of oil as defined by §112.2 of the SPCC regulations, other than lines leading from the separation equipment to storage tanks. Aboveground storage containers and oil-filled equipment applicable to this plan are listed below in Section 6.5

6.5 Oil Storage Capacity: §112.7(a)(3)(i)

A summary of the substance, containers and container capacities applicable to this plan is provided in the following table. Although oil-filled equipment are not considered containers as defined by §112.2, the preamble of the SPCC rule (67 FR, 47054-47055) indicates that applicability criteria such as oil storage capacity and potential for a discharge still pertain and the prevention of discharges from such equipment still falls within the scope of the SPCC rule. Consequently, the type of oil and capacity of the oil-filled equipment at the Parachute Creek Gas Plant are included in the summary.

SPCC-Regulated Storage Containers and Oil-Containing Equipment

PHASE 1			
Stored Material/ Description	**Type of Container/Equipment**	**Reference ID (See Figure 2)**	**Storage Capacity (Gallons)**
Lubricating Oil	Above ground storage tank	1	500
Used Oil	Above ground storage tank	3	3,360
Condensate	Above ground storage tank	6	12,600
NGL	Above ground storage vessel	7	45,000
NGL	Above ground storage vessel	8	45,000
Combustor Skid Drain	Above ground storage tank	13	3,360
Lubricating Oil	Above ground storage tank	14	500
Hot Oil Tank	Above ground storage tank	17	2,940
Hot Oil Heater	Above ground storage tank	18	4,200
Hot Oil Heater	Above ground storage tank	19	4,200
Lubricating Oil	Above ground storage tank	20	1,000
Lubricating Oil	Above ground storage tank	21	1,000
Lubricating Oil	Above ground storage tank	23	500
Lubricating Oil	Above ground storage tank	24	500
Lubricating Oil	Above ground storage tank	25	500
Unleaded Gasoline	Above ground storage tank	27	500
Off-Road Diesel	Above ground storage tank	28	500
Sump Tank	Above ground storage tank	29	4,200
Heater Sump Tank	Above ground storage tank	31	675
Vent Tank	Above ground storage tank	32	1,000
Produced Water	Above ground storage tank	34	16,800
Produced Water	Above ground storage tank	35	16,800
Produced Water	Above ground storage tank	36	16,800
Propane	Above ground storage vessel	37	1,500
Phase 1 Storage Capacity			183,935

PHASE 2			
Stored Material/ Description	**Type of Container/Equipment**	**Reference ID (See Figure 3)**	**Storage Capacity (Gallons)**
Lubricating Oil	Above ground storage tank	4	500
Lubricating Oil	Above ground storage tank	5	500
Lubricating Oil	Above ground storage tank	12	500
Lubricating Oil	Above ground storage tank	13	500
Lubricating Oil	Above ground storage tank	14	500
Lubricating Oil	Above ground storage tank	15	500
NGL	Above ground storage vessel	17	45,000
NGL	Above ground storage vessel	18	45,000
NGL	Above ground storage vessel	19	45,000
NGL	Above ground storage vessel	20	45,000
Propane	Above ground storage vessel	21	12,000
Used Oil	Above ground storage vessel	26	3,360
Sump Tank	Above ground storage vessel	27	675
Phase 2 Storage Capacity			199,035

PHASE 3			
Stored Material/ Description	**Type of Container/Equipment**	**Reference ID (See Figure 4)**	**Storage Capacity (Gallons)**
Diesel Fuel	Above ground storage tank	1	500
Diesel Fuel	Above ground storage tank	2	500
Unleaded Gasoline	Above ground storage tank	3	300
Flare K.O. Vessel	Above ground storage tank	5	2,730
Phase 3 Storage Capacity			4,030
Plant Overall Storage Capacity			387,000

6.6 Discharge Prevention Measures: §112.7(a)(3)(ii)

The Parachute Creek Gas Plant relies on a number of measures to aide in the prevention of a discharge. Descriptions of these measures are provided below.

- Routine maintenance of any oil-containing equipment is performed by trained personnel at the location of the equipment utilizing soaker pads and the available secondary containment structures and/or drip pans as warranted.

- Each storage tank or vessel has a system in place that has been designed and installed in accordance with good engineering practice to prevent discharges. These features may include: adequate containment volume to avoid overfill during normal operations, and; high level sensors and controls to stop liquid flow. All discharge features are inspected at regular intervals.

6.7 Discharge or Drainage Controls: §112.7(a)(3)(iii)

The products stored at the Parachute Creek Gas Plant (natural gas liquids, produced water, and lubricating oil) are noncorrosive materials and are compatible with the materials with which the storage containers and containment structures at the facility are constructed. The containment structures at the facility are designed to provide adequate protection against the discharge of oil. Secondary containment is provided for the atmospheric aboveground storage tanks. Secondary containment details are provided in Sections 6.14 and 6.19.

Containment capacity calculations and/or specifications are provided in **Appendix D**. Each secondary containment system, including the walls and floor of the respective system, is capable of containing oil and has been constructed so that any discharge from a primary containment system (such as a tank or pipe) will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs.

6.8 Countermeasures for Discharge Discovery, Response and Cleanup: §112.7(a)(3)(iv)

As part of routine facility procedures, visual exterior inspections of the oil storage containers and equipment are made several times per week, at a minimum, for signs of deterioration or leaks. Deficiencies noted from these examinations are entered on a check sheet and corrected in a timely manner. Inspection check sheets are kept in a logbook in the plant office. In addition to the regular checks, the oil storage equipment is inspected every month according to the written procedures outlined in Section 6.16 of this plan

In the event of a release, the facility has trained personnel and equipment available to contain and clean up minor volumes of oil. On-site equipment and materials include spill kits, shovels, and sorbent materials (booms, pads, etc.) that may be used to dike, contain and remove minor releases.

In the event of a larger release, specific response procedures have been developed (See **Appendix C**). As part of these procedures, external resources (contractors) have been identified to assist facility personnel. To ensure the commitment of these external resources, Williams Production RMT Company maintains a service agreement with each selected contractor. A list of approved contractors is kept at the plant site and at the Williams district office in Parachute, Colorado. At a minimum, contractors identified to assist in a spill response will have the capabilities to provide emergency response, industrial power vacuuming, tank and pipeline cleaning, equipment decontamination, excavation/earthmoving and waste transportation and disposal services.

6.9 Recovered Materials Disposal: §112.7(a)(3)(v)

Materials recovered during a spill event will be appropriately containerized or will be remediated on site in accordance with Colorado Oil and Gas Conservation Commission (COGCC) stipulations. Soils and other solids will be placed in 55-gallon drums or roll-off containers, or in other approved containers as warranted. Liquids will be placed in 55-gallon drums or will be collected in a tank truck using industrial power vacuuming. Recovered materials will be labeled, characterized and disposed/recycled in accordance with applicable federal, state and local regulations.

6.10 Contact List and Notification Phone Numbers: §112.7(a)(3)(vi)

The contact list for oil spill response activities is provided in **Appendix C**, as part of the Oil Spill Response Procedures developed for the Parachute Creek Gas Plant.

6.11 Reporting and Notification Procedures: §112.7(a)(4)

Reporting and notification requirements are outlined in the Oil Spill Response Procedures provided in **Appendix C**.

6.12 Oil Spill Response Procedures: §112.7(a)(5)

Oil Spill Response Procedures for the Parachute Creek Gas Plant are provided in **Appendix C**.

6.13 Discharge Analysis: §112.7(b)

Pursuant to §112.7(b), predictions of the direction, rate of flow, and total quantity of material that could be discharged at the facility, in the event of a breach or failure of the secondary containment structures, are summarized in the table below for oil storage containers or oil-filled equipment.

Potential Spill Prediction and Control

Source	Primary Failure Mechanism	Storage Capacity (Gallons)	Discharge Flow Direction	Required Containment Capacity[1] (Gallons)	Current Containment Capacity[2] (Gallons)
PHASE 1					
Storage tank #1	Leakage, overfilling	500	South, east	575	756
Storage tank #3	Leakage, overfilling	3,360	South, east	3,804	3,915
Storage tank #6	Leakage, overfilling	12,600	South, east	14,490	29,514
Storage vessel #7	Leakage, overfilling	45,000	South, east	51,750	122,356
Storage vessel #8	Leakage, overfilling	45,000	South, east	51,750	122,356
Storage tank #13	Leakage, overfilling	3,360	South, east	3,864	9,682
Storage tank #14	Leakage, overfilling	500	South, east	575	756
Storage tank #17	Leakage, overfilling	2,940	South, east	0	0
Storage tank #18	Leakage, overfilling	4,200	South, east	0	0
Storage tank #19	Leakage, overfilling	4,200	South, east	0	0
Storage tank #20	Leakage, overfilling	1,000	South, east	1,150	0
Storage tank #21	Leakage, overfilling	1,000	South, east	1,150	0
Storage tank #23	Leakage, overfilling	500	South, east	575	756
Storage tank #24	Leakage, overfilling	500	South, east	575	2,095
Storage tank #25	Leakage, overfilling	500	South, east	575	0
Storage tank #27	Leakage, overfilling	500	South, east	575	756
Storage tank #28	Leakage, overfilling	500	South, east	575	756
Storage tank #29	Leakage, overfilling	4,200	South, east	0	0
Storage tank #31	Leakage, overfilling	675	South, east	0	0
Storage tank #32	Leakage, overfilling	1,000	South, east	1,150	3,162
Storage tank #34	Leakage, overfilling	16,800	South, east	19,320	31,102
Storage tank #35	Leakage, overfilling	16,800	South, east	19,320	31,102
Storage tank #36	Leakage, overfilling	16,800	South, east	19,320	31,102
Storage vessel #37	Leakage, overfilling	1,500	South, east	1,725	2,545
PHASE 2					
Storage tank #4	Leakage, overfilling	500	South, east	575	628
Storage tank #5	Leakage, overfilling	500	South, east	575	756
Storage tank #12	Leakage, overfilling	500	South, east	575	4,279
Storage tank #13	Leakage, overfilling	500	South, east	575	4,279
Storage tank #14	Leakage, overfilling	500	South, east	575	4,279
Storage tank #15	Leakage, overfilling	500	South, east	575	4,279
Storage vessel #17	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #18	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #19	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #20	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #21	Leakage, overfilling	12,000	South, east	13,800	151,859
Storage tank #26	Leakage, overfilling	3,360	South, east	3,772	3,917

Storage tank #27	Leakage, overfilling	675	South, east	0	0
PHASE 3					
Storage tank #1	Leakage, overfilling	500	South, east	575	756
Storage tank #2	Leakage, overfilling	500	South, east	575	756
Storage tank #3	Leakage, overfilling	300	South, east	575	756
Storage tank #5	Leakage, overfilling	2,730	South, east	3,140	0

Notes:

1. The indicated capacities are sufficient volumes required to contain the storage capacity of the largest vessel in the specific containment plus at least 2.1 inches of freeboard to accommodate precipitation associated with a 24-hour 25-year storm event. (Source: NOAA Atlas 2)
2. Secondary containment deficiencies exist where the current containment capacity is listed as "0".

6.14 Spill Containment: §112.7(c)

Oil storage containers at the Parachute Creek Gas Plant are equipped with secondary containment as noted in this document. Although oil-filled equipment are not considered containers as defined by §112.2, the preamble of the SPCC rule indicates that the requirements of §112.7(c) still apply. Spill containment at the facility is described below:

- Secondary containment is typically provided for the lubricating oil, and condensate above ground storage tanks in the form of earthen dikes or steel-wall containers. Containment for the other oil-filled equipment and vessels and the loading area is provided as described below or in Section 6.19. Secondary containment deficiencies will be corrected by July 1, 2009.

- Containment structures are configured to contain the storage capacity of the largest tank within the containment area, plus at least 2.1 inches of freeboard to accommodate precipitation associated with a 24-hour 25-year storm event (Source: U.S. Department of Commerce National Oceanic and Atmospheric Administration Atlas 2, Volume II). The containment volume calculations associated with the secondary containment structures are presented in **Appendix D**.

6.15 Spill Containment Practicability: §112.7(d)

No discussions related to practicability are warranted because this SPCC plan either does not deviate from the requirements of §§112.7(c), 112.7(h)(1), 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.14(c), or, where it does deviate, the deviations are not practicability-caused issues.

6.16 Inspections, Tests and Records: §112.7(e)

Oil storage containers, oil-filled equipment and related containment structures at the Parachute Creek Gas Plant are visually examined several times per week, at a minimum, for signs of deterioration or leaks. These inspections are conducted as part of normal facility operations. Deficiencies noted from these examinations are entered on a check sheet and corrected in a timely manner. The equipment is also inspected every month according to the written procedure in **Appendix E**.

Signed and dated records of all inspections and other pertinent information, such as spills, removal and disposal of spill contaminated materials, replacement or repair of equipment, and training are maintained for a minimum of 3 years.

6.17 Personnel Training and Discharge Prevention Measures: §112.7(f)

Oil-handling personnel operating the facility are required to have training in the operation and maintenance of equipment to prevent the discharge of oil; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and the contents of the facility SPCC plan. They are under the direct supervision of the Principal Environmental Specialist, who is responsible for establishing performance and duty guidelines and is the designated person accountable for spill prevention at the facility. Regular safety meetings are held to discuss a variety of safety procedures and other pertinent job responsibility criteria. A written record of all training is maintained for 3 years.

At a minimum, training is conducted annually and whenever new spill regulations are promulgated, existing operating systems are modified, personnel responsibilities change, or the SPCC plan is amended. In addition, regular safety meetings will be used as a forum to reinforce understanding of SPCC procedures as necessary. An outline of the topics to be covered during SPCC training is presented in **Appendix F**. Attendance rosters and other training records will be maintained in the main office at the facility for a period of no less than three years.

6.18 Security: §112.7(g)

The Parachute Creek Gas Plant is a secure facility and is typically not subject to trespass or vandalism. The facility is fully fenced with lockable access gates. The facility is in operation and attended 24 hours per day. General security is controlled by operations personnel during regular duties. Flow valves are generally kept locked or sealed to preclude tampering. The lighting at the facility is adequate for nighttime operations and appropriate for this type of facility.

When a pipe that has potential for re-use is not in service, or it is in a standby service for an extended period of time, any associated valves are kept closed and locked and lines are sealed appropriately and marked as to their tie-in connection.

6.19 Facility Tank Car and Tank Truck Loading/Unloading: §112.7(h)

The Parachute Creek Gas Plant does not currently have tank car or tank truck unloading racks. Secondary containment for truck loading/unloading areas is discussed in Sections 6.6 and 6.7.

Proper loading procedures will be followed and wheel chocks used by tank truck drivers to prevent vehicles from departing or moving before completed disconnection of flexible or fixed oil transfer lines. All tank truck drivers are required to comply with DOT regulations in 49 CFR Part 177 and facility standard operating procedures. All drivers must be authorized and/or certified by Williams Production RMT Company.

If available, Williams operations personnel will remain with any delivery truck during filling operations to monitor the transfer; inspect outlets, connections and valves on the delivery tank truck before and after oil-filling operations; and make adjustments as necessary. The driver or an operations personnel member visually inspects all tank trucks before leaving the loading/unloading areas. The lowermost drain and all outlets of transport vehicles shall be inspected and, if necessary, make certain that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

6.20 Brittle Fracture Analysis: §112.7(i)

The Parachute Creek Gas Plant has no field-constructed aboveground oil-storage containers that apply to this plan and therefore this section of the regulation is not applicable.

6.21 Applicable Requirements: §112.7(j)

Sections 6 and 8 of this plan provide detailed discussions of conformance with the applicable requirements and other effective discharge prevention used at the facility.

SECTION 7.0 REQUIREMENTS FOR ONSHORE (NON-PRODUCTION) FACILITIES: §112.8

The Parachute Creek Gas Plant is not an onshore non-production facility. Consequently, the provisions in §112.8 do not apply.

SECTION 8.0 REQUIREMENTS FOR ONSHORE OIL PRODUCTION FACILITIES: §112.9

8.1 Oil Production Facility Drainage: §112.9(b)

Precipitation that may accumulate in any contained area is normally allowed to evaporate. No automatic pumps or ejector devices are present in any of the containment areas. If removal of any water accumulated in the containment areas is necessary, it will be conducted under the direct supervision of responsible personnel as described in this section.

Accumulated precipitation is removed, when necessary, from secondary containment areas using a vacuum truck, pump, or other appropriate method. Removed water is disposed of in accordance with applicable local, state, and federal regulations. Prior to removal of the water from any containment area, the responsible personnel visually inspect the water in the containment structure and note the appearance of the water in the facility logs. The name of the person draining the containment, as well as the date, time, and approximate quantity of water removed will also be recorded in the facility logs and kept on file with the SPCC documents for a period of at least three years. A secondary containment drainage log is included in **Appendix E**.

The drain systems at the Parachute Creek Gas Plant are of the 'enclosed' type. All process effluents are routed through drain lines to storage tanks. No process effluents, untreated or treated, are released off-site.

All field drainage systems (such as drainage ditches or road ditches) in the vicinity of the facility are inspected at regular intervals for the presence of accumulated oil that may have resulted from a small discharge. Any accumulated oil will be removed from these areas promptly upon discovery.

8.2 Oil Production Facility Bulk Storage Containers: §112.9(c)

The products stored at the Parachute Creek Gas Plant are compatible with the materials with which the storage containers and containment structures at the facility are constructed. Secondary containment is provided for several of the atmospheric above ground storage tanks. Specific secondary containment details are presented in Sections 6.14 and 6.19.

Oil storage containers at the Parachute Creek Gas Plant are equipped with secondary containment as noted in this document. Although oil-filled equipment are not considered containers as defined by §112.2, the preamble of the SPCC rule indicates that the requirements of §112.7(c) still apply. Spill containment at the facility is described in Section 6.14 and **Appendix D**.

Certain secondary containment structures at the facility are constructed with native soils or road construction-grade fill material. The composition of the native soil is considered sufficiently impervious to contain spilled oil until cleanup operations can commence.

Oil storage containers, oil-filled equipment and related containment structures at the Parachute Creek Gas Plant are visually examined several times per week, at a minimum, for signs of deterioration or leaks. These inspections are conducted as part of normal facility operations. Deficiencies noted from these examinations are entered on a check sheet and corrected in a timely manner. The equipment is also inspected every month according to the written procedure in **Appendix E**.

Each storage tank or vessel at the Parachute Creek Gas Plant has a system in place that has been designed and installed in accordance with good engineering practice to prevent discharges. These features may include adequate container volume to avoid overfill and high-level sensors and controls to stop liquid flow. All discharge prevention features are inspected at regular intervals.

8.3 Facility Transfer Operations, Oil Production Facility: §112.9(d)

All above ground valves and pipelines are routinely inspected for the general condition of flange joints, valve glands and bodies, drip pans, pipe supports, and other appurtenances. Integrity or leak testing is also performed at the time of any installation, modification, construction, relocation, or replacement of buried piping.

The following procedures and protocols are in place to maintain all flow lines in order to prevent discharges from flow lines:

- All buried piping at the facility is protected by coating or wrapping. Any buried equipment will be visually inspected for corrosion whenever exposed through excavation. Further inspection and repair will be conducted on the affected metal equipment if problems are identified to minimize the chance for a discharge from facility transfer equipment.
- When a pipe that has potential for re-use is not in service, or it is in a standby service for an extended period of time, any associated valves are kept closed and locked and lines are sealed appropriately and marked as to their tie-in connection.
- All pipe supports at the facility are designed to minimize abrasion and corrosion and to allow for expansion and contraction. Pipe supports are routinely inspected as part of the general facility inspections described in this SPCC plan.

SECTION 9.0 REQUIREMENTS FOR ONSHORE OIL DRILLING AND WORK OVER FACILITIES: §112.10

The Parachute Creek Gas Plant is not an onshore oil drilling or work over facility. Consequently, the provisions in §112.10 do not apply.

SECTION 10.0 REQUIREMENTS FOR OFFSHORE OIL DRILLING, PRODUCTION AND WORK OVER FACILITIES: §112.11

The Parachute Creek Gas Plant is not an offshore oil drilling, production or work over facility. Consequently, the provisions in §112.11 do not apply.

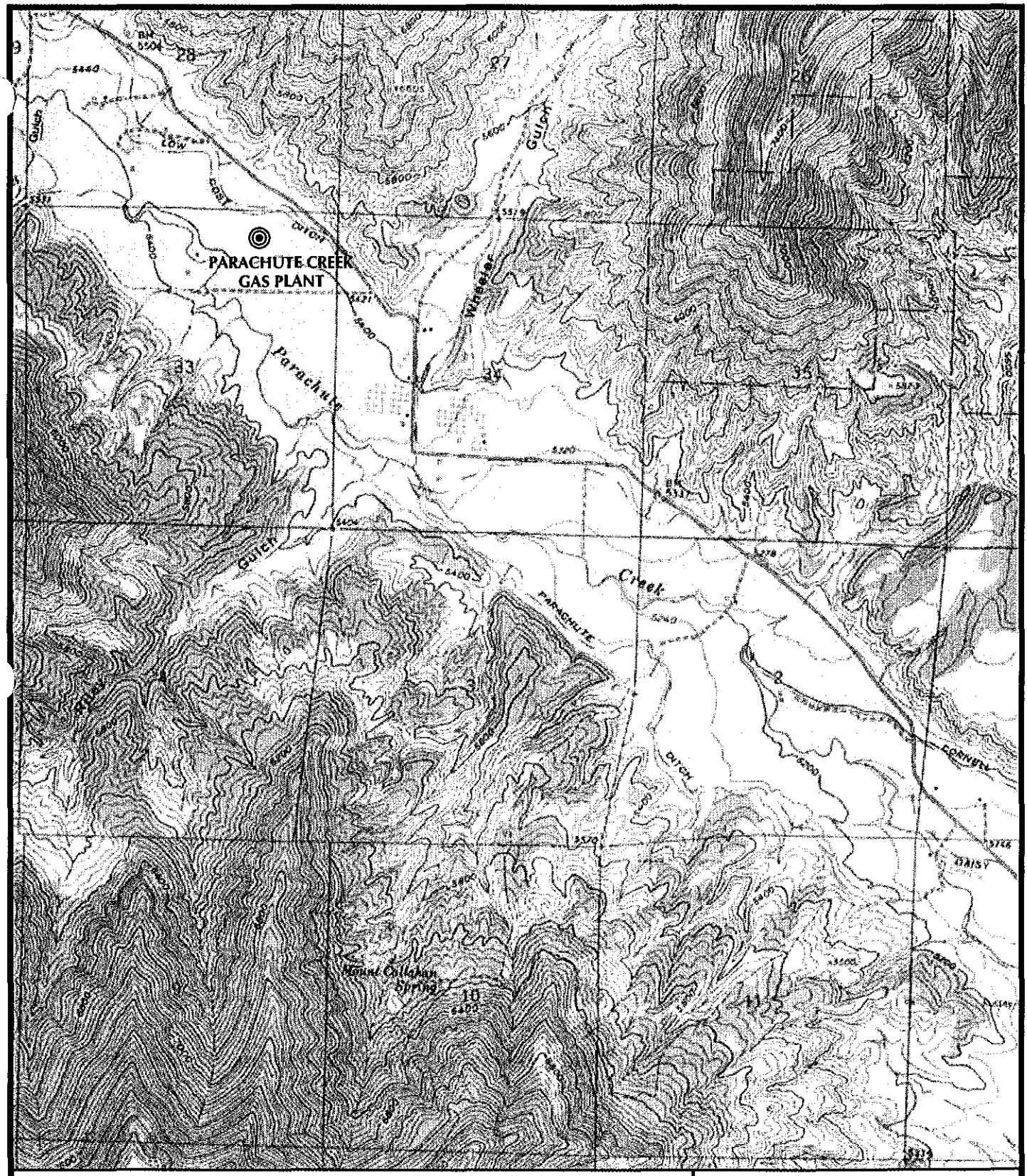
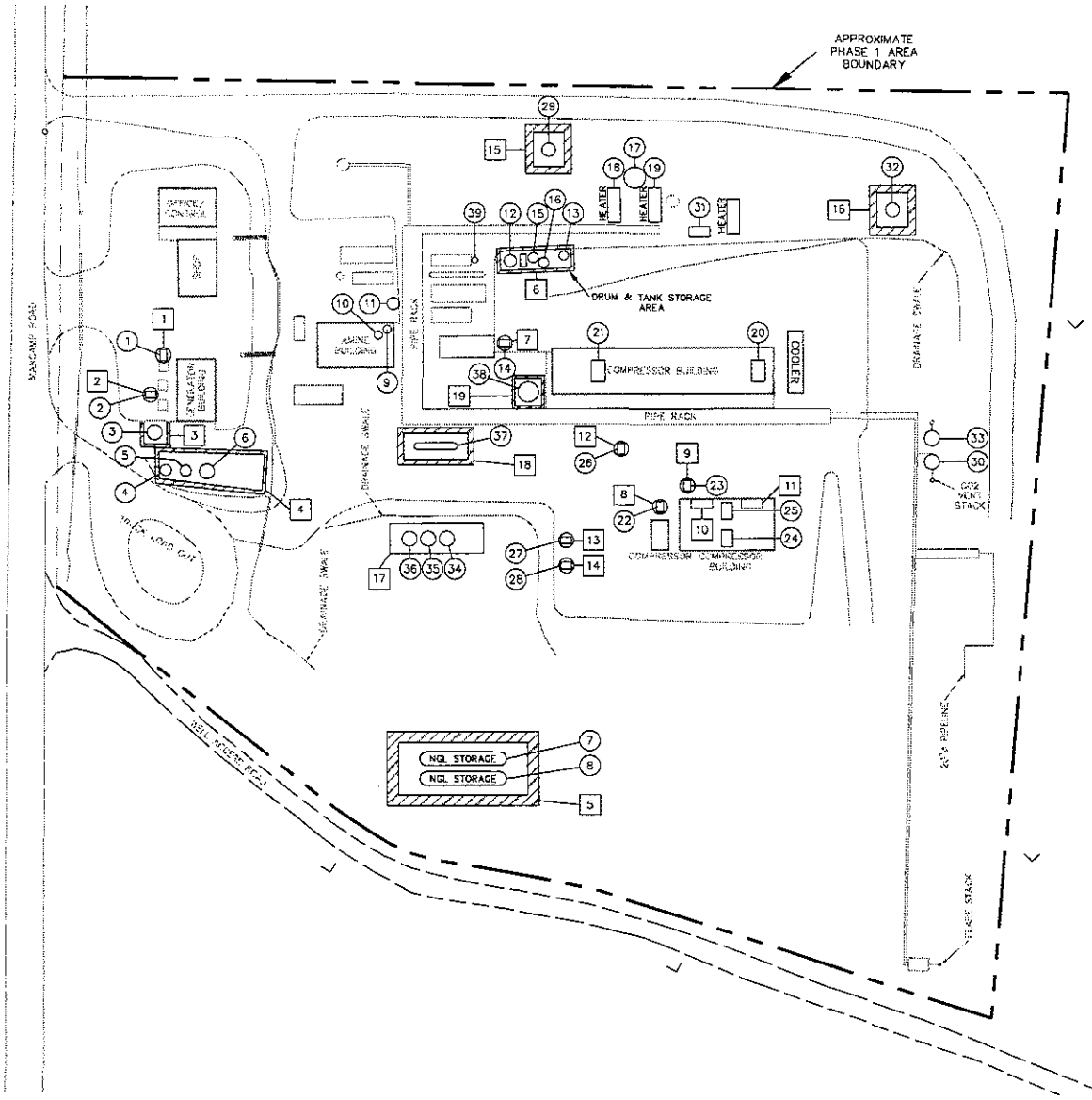


FIGURE 1
SITE LOCATION MAP
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	8/29/03
REVISION NUMBER:	001
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02067
SCALE:	1:24,000

CORDILLERAN

MAP SOURCE: 7.5 MINUTE U.S.G.S. TOPOGRAPHIC MAP (PARACHUTE QUADRANGLE)
SITE LEGAL LOCATION: NE NE, SECTION 33, TOWNSHIP 6 SOUTH, RANGE 96 WEST



LEGEND

- > = ESTIMATED DIRECTION OF DRAINAGE FLOW
- (1) = STORAGE TANK REFERENCE NUMBER
- [1] = SECONDARY CONTAINMENT REFERENCE NUMBER

50 0 50 100 150

APPROXIMATE SCALE IN FEET

N

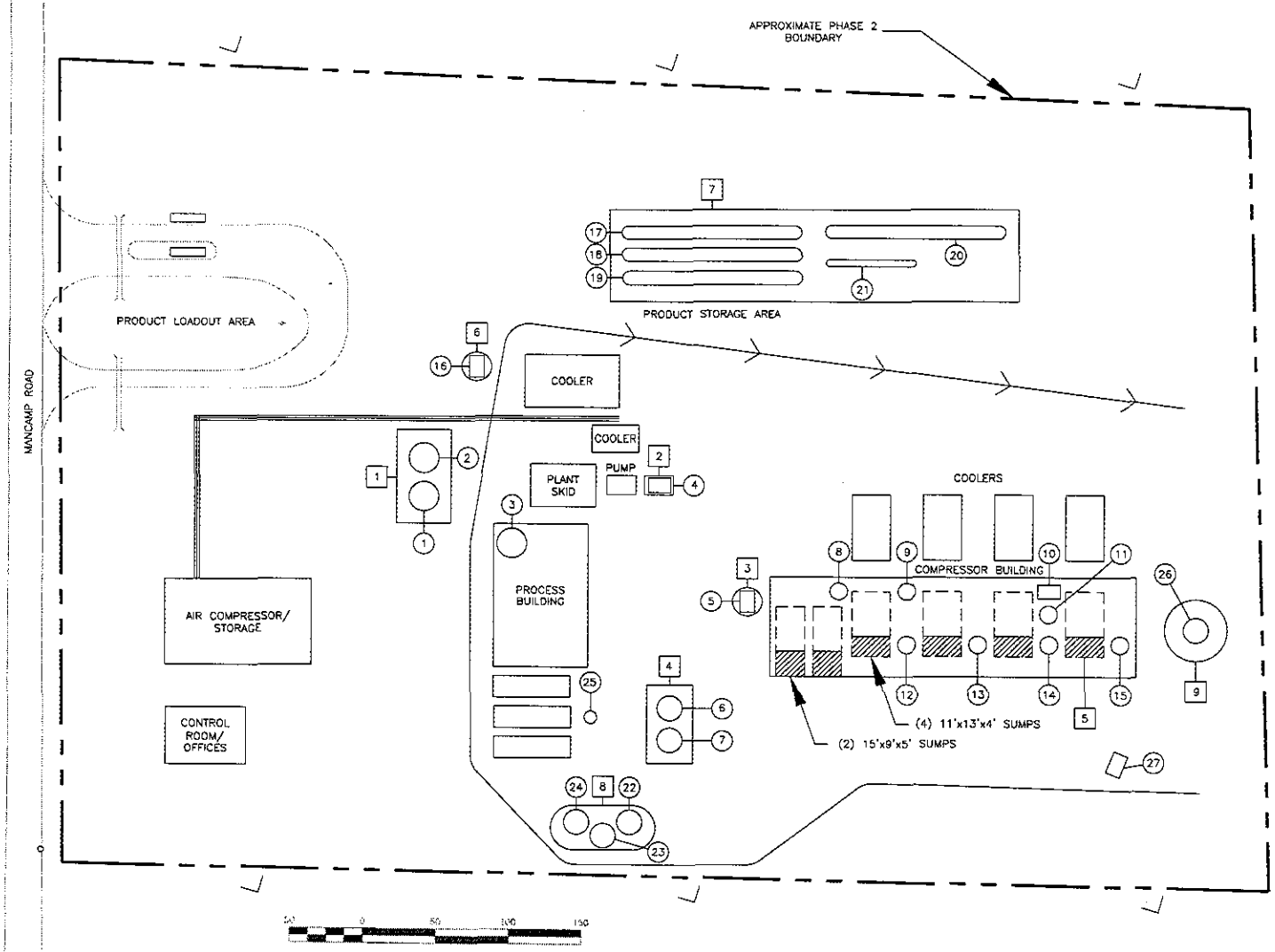
TRUE NORTH

PHASE 1 NORTH

FIGURE 2
SITE MAP PHASE I
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	3/1/07
REVISION NUMBER:	006
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02071
SCALE: AS NOTED	

CO[illegible]LLERAN



LEGEND

- > = ESTIMATED DIRECTION OF DRAINAGE FLOW
- (1) = STORAGE TANK REFERENCE NUMBER
- [1] = SECONDARY CONTAINMENT REFERENCE NUMBER

TRUE NORTH

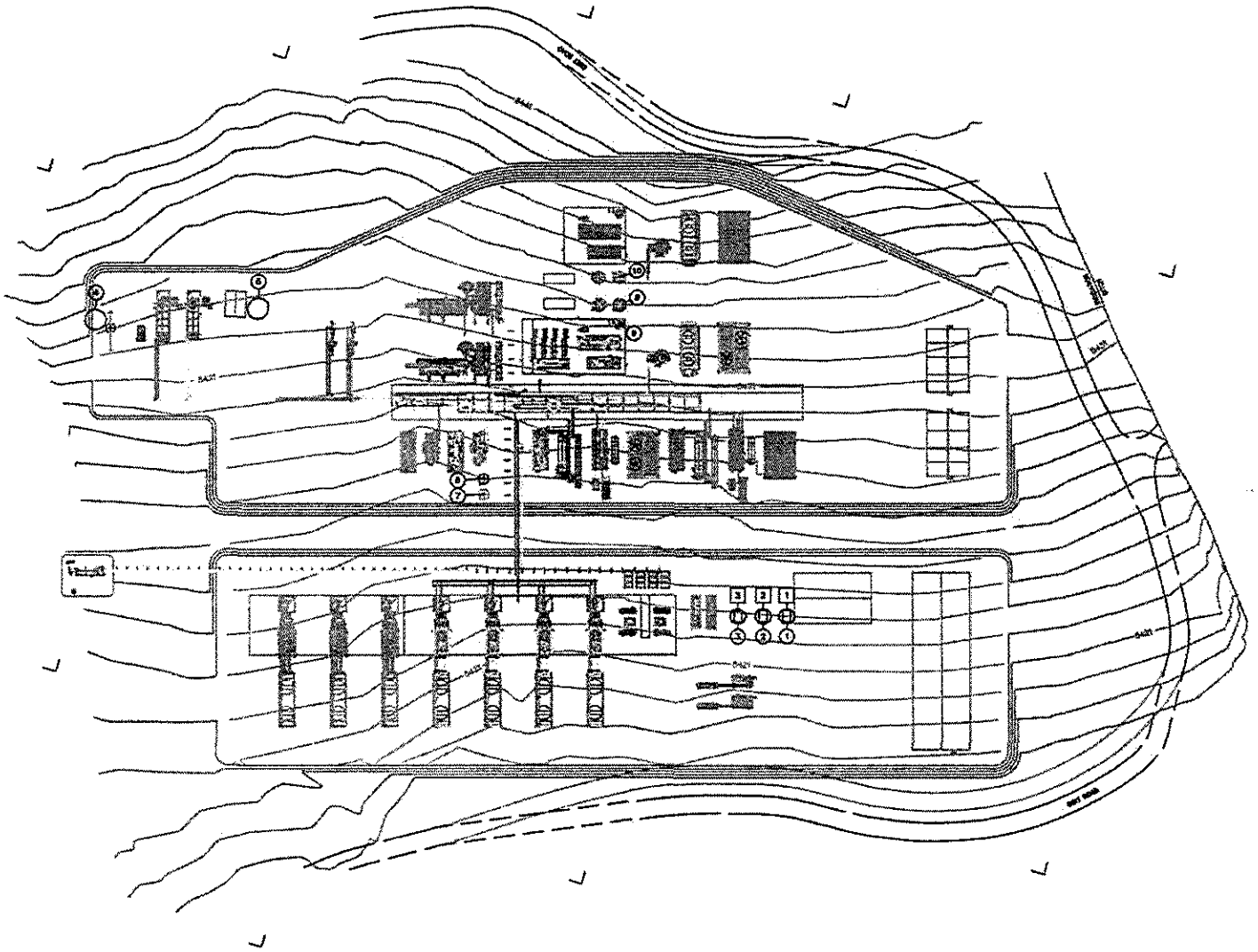
PHASE 2 NORTH

N

FIGURE 3
SITE MAP - PHASE 2
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	3/1/07
REVISION NUMBER:	002
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02071
SCALE: AS NOTED	

CORDILLERAN



LEGEND

- > = ESTIMATED DIRECTION OF DRAINAGE FLOW
- (1) = STORAGE TANK REFERENCE NUMBER
- [1] = SECONDARY CONTAINMENT REFERENCE NUMBER

TRUE NORTH

PHASE 2 NORTH

FIGURE 4
SITE MAP – PHASE 3
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	1/31/07
REVISION NUMBER:	001
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02071
SCALE:	NTS

CORDILLERAN

Appendix A

Certification of the Applicability of the Substantial Harm Criteria

Certification of the Applicability of the Substantial Harm Criteria

Facility Name: Parachute Creek Gas Plant

Facility Location: The Parachute Creek Gas Plant is located in the northeast quarter of the northeast quarter of Section 33 Township 6 South, Range 96 West in Garfield County, Colorado. See **Figure 1** for detailed location information.

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

   YES_____ NO ___X___

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?

   YES_____ NO ___X___

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix {Appendix C to 40 CFR 112} or a comparable formula[1]) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA"s "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" and the applicable Area Contingency Plan.

   YES_____ NO ___X___

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix {Appendix C to 40 CFR 112} or a comparable formula[1]) such that a discharge from the facility would shut down a public drinking water intake[2]?

   YES_____ NO ___X___

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

   YES_____ NO ___X___

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

_____ _____

Signature Title

_____ _____

Name (please type or print) Date

[1] If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

[2] For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

Appendix B

Five-Year Review Documentation

Five-Year Review Documentation

In accordance with §112.5(b), this SPCC plan been reviewed to determine if more effective prevention and control technology is available to significantly reduce the likelihood of a discharge.

Pursuant to §112.5(b) and by means of this certification, I attest that I have completed a review and evaluation of this SPCC plan for Williams, and as a result

_____Will

_____Will Not

amend the plan. A Professional Engineer has reviewed technical amendments to the plan and certified the revised document.

_____ _____

Signature, Authorized Facility Representative Date

_____

Name (Printed)

_____

Title

Five-Year Review Documentation

Original Date of Plan: August 2003

In an effort to document the five-year review process, the facility manager or his representative shall complete the information below:

Review Dates	Representative Or designee Name and Title	Signature	Plan Amended (Yes or No)
2/04	Dion Plsek, P.E.		Yes
3/05	Dion Plsek, P.E.		Yes
11/05	Dion Plsek, P.E.		Yes
10/13/06	Dion Plsek, P.E.		Yes
1/31/07	Dion Plsek, P.E.		Yes
3/1/07	Dion Plsek, P.E.		Yes

SPCC Plan Amendment Log

Date of Amendment	General Description of Change Made	Page Numbers of Changes Made	Name of Certifying PE	Name of Management Reviewer
2/04	Plan revised to match plant as-built conditions	Various	Dion Plsek, P.E.	Dave Cesark
3/05	Plan revised to meet new SPCC rule requirements and changes in storage equipment at plant.	Various	Dion Plsek, P.E.	Jerry Alberts
11/05	Document revised to include Phase 2 plant area.	Various	Dion Plsek, P.E.	Dave Cesark
10/13/06	Document revised to reflect changes in Phase 2 area storage structures and to include text and format changes.	Various	Dion Plsek, P.E.	Michael Gardner
1/31/07	Document revised to reflect changes in Phases 1 and 2 storage structures and to include preliminary Phase 3 storage information.	Various	Dion Plsek, P.E.	Michael Gardner
3/1/07	Update due to 2/07 site inspection. Updated SPCC compliance dates and Williams contact information. Changes made to storage tank and secondary containment information.	Cover, Pgs. 4, 5, 8, 11, 12, 15, Figs 2 & 3, App. C and App. D	Dion Plsek, P.E.	Michael Gardner

Appendix C

Oil Spill Response Procedures

Oil Spill Response Procedures

FACILITY NAME: PARACHUTE CREEK GAS PLANT

FACILITY ADDRESS: NE NE, SECTION 33 IN TOWNSHIP 6 SOUTH, RANGE 96 WEST IN GARFIELD COUNTY, COLORADO.

NEAR PARACHUTE, COLORADO

REFERENCE: SECTION 6.12 OF SPCC PLAN

WRITTEN PROCEDURES APPROVED BY:

Signature	Title
Name (please type or print)	Date

Oil Spill Response Procedures

1. Response Management Structure

The Spill Coordinator and Alternate Spill Coordinator(s) are responsible for implementing response procedures in the event of an oil spill or discharge emergency. These personnel have the authority to commit the resources necessary to carry out a response. However, all operating personnel at the Parachute Creek Gas Plant receive training to familiarize themselves with all aspects of the SPCC Plan, facility operations, the location and characteristics of materials handled at the facility, and the location of all records within the facility; and are responsible for proper implementation of response procedures should the Spill Coordinator or Alternate Spill Coordinator(s) be unavailable.

2. Initial Response

Releases at the Parachute Creek Gas Plant will be discovered through observations made during the course of normal work activities, inspections of work areas and equipment, monitoring devices, or by chance. Discovering a release is the first step in initiating a response. Upon discovery, the individual discovering a release should immediately upon discovery:

1. Assess the basic situation.
2. Stop the source of the release if safely possible using available resources (including spill kits).
3. Restrict ignition sources if the material is flammable.
4. Secure the area as off limits.
5. In the event that the incident poses an immediate threat of fire, explosion, or other impact to safety, health, or the environment, contact the local fire department at 911. DO NOT HANG UP after completing the report, let the dispatcher hang up first.
6. Report the release to the Spill Coordinator or an Alternate Spill Coordinator (see attached Oil Spill Incident Notification Phone Numbers).
7. The Spill Coordinator (or alternate) will determine whether the spill incident warrants evacuation of the facility. If so, the procedures outlined in the facility Emergency Action Plan will be followed.
8. The Spill Coordinator (or alternate) will determine whether the spill incident constitutes a discharge as defined in §112.1(b) of the SPCC regulations (see Section 3, below) and will notify appropriate federal, state, and local agencies of the spill/release incident if warranted.
9. If the spill involves a minor volume of oil, it can be cleaned up by facility personnel provided that 1) they are OSHA trained and have received their current refresher training; 2) appropriate material safety data sheets (MSDS sheets) are available for the material spilled; and 3) appropriate personal protective equipment (PPE) is available.

10. If the spill involves a significant volume of oil, or any of the three criteria listed in (9) above are not met, it should be cleaned up by a properly certified outside contractor (see attached Oil Spill Incident Notification Phone Numbers).

3. Oil Spill Emergency Reporting

If the release constitutes a *discharge* as defined in §112.1(b) of the SPCC regulations, it will be considered an Oil Spill Emergency. **A release of oil is considered a *discharge* under this Plan only if: the release is into or upon the navigable waters of the United States, adjoining shorelines, or waters contiguous with navigable waters of the United States.** This is apparent if a release impacts surface water quality by causing a film, sheen, or discoloration of the water surface, or upon water or adjoining shorelines, or causes a sludge or emulsion to be deposited beneath the surface of the adjoining shorelines. Impacts to groundwater also apply if the groundwater is contiguous with navigable waters of the United States (i.e., groundwater discharges to/contributes to the total volume of a surface water body that is itself contiguous with navigable waters of the United States).

In summary, if a release directly affects surface water or groundwater at the facility, it must be considered an Oil Spill Emergency. Federal and local authorities to be notified in the event of an Oil Spill Emergency are outlined below.

State of Colorado

In Colorado, condensate and E&P wastes are to be reported within 24 hours if the spill has entered waters of the state (any surface or groundwater) or entered navigable waters (any surface water) in sufficient quantities to cause a sheen on the water or stain on the shore. Spills less than 5 barrels which can be immediately contained and cleaned up do not need to be reported. Spills greater than 20 barrels must be reported with 24 hours.

All spills and releases of exploration and production waste or produced fluid exceeding five barrels, including those contained within unlined berms, shall be reported in writing on the Colorado Oil and Gas Conservation Commission (COGCC) Spill/Release Report Form 19 within 10 days of discovery of the spill. In addition, spills or releases that exceed twenty barrels of exploration and production waste or produced fluid shall be verbally reported to the COGCC within 24 hours of discovery. Spills or releases of any size that impact or threaten to impact any waters of the state, residence or occupied structure, livestock or public byway, shall be verbally reported to the COGCC as soon as practicable after discovery. See COGCC Rule 906 for more information. If the spill may reach waters of the State (which include surface water, ground water and dry gullies or storm sewers leading to surface water), it must also be reported immediately to the Colorado Department of Public Health and Environment.

Refined petroleum releases must be reported if they have entered navigable waters or if the quantity release exceeds 25 gallons.

Spills of hazardous materials must be reported if they impact navigable waters or their volume exceeds the reportable quantities in Table E1.

In general, verbal or telephone reports are to be made within 24 hours. The District Manager or Environmental Manager will notify regulatory agencies as appropriate. As a practical matter, an evaluation of the specifics of each spill and a determination of reporting requirements will be made. If there is any question about reporting requirements, Williams will over-report rather than under-report.

Written, follow up reports are to be sent within 10 days to:

- Colorado Oil and Gas Conservation Commission
  1120 Lincoln # 801
  Denver, Colorado 80203
  (Use COGCC Spill/Release Form)
- Bureau of Land Management - File an "Undesirable Event Form" with:
  Glenwood Springs Resource Area Office
  50629 Highways 6 and 24
  P.O. Box 1009
  Glenwood Springs, CO 81602

If the Local Emergency Planning Commission (LEPC) was notified of the spill (in the event of a hazardous substance release) a report should also be sent to:

Dale Hancock
Garfield County LEPC
109 8th Street, Suite 300
Glenwood Springs, Colorado 81601

United States Environmental Protection Agency (EPA)

An oil spill is reportable to the EPA if any of the following criteria are met:

A) Is the spill to navigable waters or adjoining shorelines?
B) Could Water Quality Standards be violated?
C) Could the spill cause a film, "sheen", or discoloration?
D) Could the spill cause a sludge or emulsion?
E) Do any of the reporting exemptions apply?
Exemptions include 1) Properly functioning vessel engines not deemed harmful, 2) Research and Development Releases (approved on a case by case basis), 3) NPDES Permitted Releases, and 4) Discharges Permitted Under the International Convention for the Prevention of Pollution from Ships (MARPOL)

If the answer to any question A through D above is "yes" and none of the exemptions apply then the release is reportable to the EPA.
To report an oil spill or hazardous substance release, call

- **the National Response Center: (800) 424-8802**

For information on EPA's Oil Spill Program, call the Oil Spill Program Information Line at (800) 424-9346.

- Region 8 EPA (CO, MT, ND, SD, UT, WY)
  999 18th Street, Suite 500
  Denver, Colorado 80202-2466 http://www.epa.gov./region08/
  Telephone: (303) 312-6312 email: r8eisc@epa.gov
  Fax: (303) 312-6339
  Toll Free: (800) 227-8917

4. Follow-up Activities

After the initial response, reporting, and notification associated with a spill incident, the Spill Coordinator (or alternate) will prepare a written report which includes following:

1. Time and date of the incident;
2. Source and exact location of the spill;
3. Material involved;
4. Cause of the incident;
5. Estimated spill volume;
6. Names of any waterways involved;
7. Description of all media impacted by the spill;
8. Description of damages or injuries caused by the spill;
9. Actions taken to stop, remove, and mitigate the effects of the material spilled
10. Names of individuals and organizations contacted (time, day, who received call, who called from Williams, and pertinent notes).
11. Who reported to the scene from Federal, State, and Local agencies (time, day, etc).

In addition, whenever more than 1,000-gallons of oil are discharged in a single incident or more than 42-gallons of oil have been discharged in each of two incidents over a 12-month period, Willliams will submit a report to the United States Environmental Protection Agency (USEPA) Regional Administrator (RA) as outlined in Section 5.2 of the SPCC Plan.

5. Sustained Actions

Where prolonged mitigation and recovery actions are required in response to a spill or release, the Spill Coordinator (or alternate) will manage the activities with any or all of the following, as warranted:

1. An outside contractor.
2. An environmental/engineering consultant.
3. Any outside vendor responsible for the incident.
4. The appropriate local, state, and federal agencies.

Most release incidents at the Parachute Creek Gas Plant are expected to be handled without implementing sustained actions.

Oil Spill Response Procedures

Notification Phone Numbers

EPA 24-Hour Spill Notification Number		303.293.1788
Department of Transportation National Response Center		800.424.8802
Colorado Department of Public Health & Environment (CDPHE)		303.692.3033
CDPHE 24-Hour Spill Hotline		877.518.5608
Colorado Oil & Gas Conservation Commission (COGCC)		303.894.2100
COGCC 24-Hour Hotline		303.860.1435
Colorado Division of Labor, Oil Inspection Section		303.620.4300
Colorado PUC Safety and Enforcement Section		800.888.0170
Colorado State Patrol Hazmat Service		970.242.7283
Hospitals (St. Mary's Hospital – Grand Junction)		970.244.2273
(Clagett Memorial – Rifle)		970.625.1510
*Garfield County Sheriff		970.625.1899
*Rifle Fire Protection District		970.625.1220
Parachute Fire Department		970.285.7630
U.S. Dept. of Interior, Bureau of Land Management, White River District Office		970.244.3000
Williams Production RMT Company Corporate Office		303.573.3900
Williams Production RMT Company Parachute Field Office		970.285.9377
Steven Soychak, District Manager	Office:	970.285.9377
	Mobile:	970.216.0922
Brad Moss, Production & Pipeline Superintendent	Office:	970.285.9377
	Mobile:	970.250.3683
Dave Cesark, Principal Environmental Specialist	Office:	970.683.2281
	Mobile:	970.260.8309
Rob Bleil, Senior Regulatory Specialist	Office:	970.263.2704
	Mobile:	970.210.2050
Michael Gardner, Senior Environmental Specialist	Office:	970.263.2760
	Mobile:	970.640.1855

* = this is a non-emergency number. Emergency calls should dial 911.

Spill/Release Information Form
Parachute Creek Gas Plant

Exact name, address, and location of the facility:

Date and time of the discharge:

Name, title and phone number of the person reporting the spill, the responsible party and the contact person:

Source of the discharge:

Type or description of material discharged:

Estimated total quantity of the discharge:

Estimated total quantity discharged as described in §112.1(b):

Names of individuals and/or organizations that have been contacted:

Bodies of water involved, the extent of actual and potential pollution or threat to surface water:

A chronology of all occurred events including: a complete description of circumstances causing the release or spill, actions taken and explanations:

A description of all impacted media:

An description of all damages or injuries caused by the discharge:

Actions being used to stop, remove, or mitigate the effects of the discharge, including disposal and treatment:

Other appropriate information for the particular spill or release:

Appendix D

Secondary Containment Information

SECONDARY CONTAINMENT INFORMATION
PARACHUTE CREEK GAS PLANT
WILLIAMS PRODUTION RMT COMPANY

PHASE 1												
				CONTAINMENT DIMENSIONS								
ID	Tank Contents/Description	Tank Volume (BBL)	Containment Number	Top Width (W1) (FT)	Bottom Width (W2) (FT)	Top Length (L1) (FT)	Bottom Length (L2) (FT)	Minimum Height (H) (FT)	Overall Secondary Containment Capacity (T) (FT³)	(GAL)	(BBL)	(%)
1	Lube oil	12	1	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
2	Glycol	12	2	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
3	Used oil	80	3	18.0	14.0	15.0	11.0	2.5	523	3,915	93	117
4	Raw water	210	4	80.0	74.0	33.0	27.0	2.0	4,623	34,586	823	392
5	Raw water	210	4	80.0	74.0	33.0	27.0	2.0	4,623	34,586	823	392
6	Condensate	300	4	80.0	74.0	33.0	27.0	2.0	4,623	34,586	823	274
7	NGL	1,071	5	104.0	94.0	60.0	50.0	3.0	16,356	122,356	2,913	272
8	NGL	1,071	5	104.0	94.0	60.0	50.0	3.0	16,356	122,356	2,913	272
9	Amine	40	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
10	Amine	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
11	Amine	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
12	Glycol	70	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	358
13	Combustor Skid Dr. Tank	80	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	313
14	Lube oil	12	7	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
15	Soap	12	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	2,089
16	Degreaser	12	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	2,089
17	Hot oil tank	70	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
18	Hot oil heater	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
19	Hot oil heater	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
20	Lube oil	24	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
21	Lube oil	24	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
22	Glycol	12	8	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
23	Lube oil	12	9	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
24	Lube oil	12	10	---[2]	---[2]	---[2]	---[2]	---[2]	280	2,095	50	416
25	Lube oil	12	11	---[2]	---[2]	---[2]	---[2]	---[2]	280	2,095	50	416
26	Ethylene Glycol	12	12	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
27	Unleaded Gasoline	12	13	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
28	Off-Road Diesel	12	14	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
29	Sump Tank	100	15	25.0	19.0	24.0	18.0	3.0	1,395	10,436	248	248
30	CO2 Vent Tank	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
31	Heater Sump Tank	16	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
32	CO2 Scrubber Tank	24	16	18.0	13.0	16.0	11.0	2.0	423	3,162	75	314
33	CO2 Vent Tank	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
34	Produced Water	400	17	24.0	24.0	74.0	74.0	2.5	4,440	33,216	791	198
35	Produced Water	400	17	24.0	24.0	74.0	74.0	2.5	4,440	33,216	791	198
36	Produced Water	400	17	24.0	24.0	74.0	74.0	2.5	4,440	33,216	791	198
37	Propane Vessel	36	18	12.0	8.0	36.0	32.0	1.0	340	2,545	61	168
38	Free Drain Tank	80	19	20.0	17.0	23.0	20.0	1.0	398	2,981	71	89
39	Glycol	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0

Calculation to compensate for multiple tanks in containment:

Largest tank dimensions		Adjusted Containment Capacity			
Volume (BBL)	Footprint area (FT²)	(GAL)	(BBL)	(%)	
300	339	29,514	703	234	<< For containment #4
100	113	9,682	231	231	<< For containment #6
400	113	31,102	741	185	<< For containment #17

Notes:
Total Containment Capacity (T) = (H/3)x[(W1xL1)+(W2xL2)+SQRT(W1xL1xW2xL2)]
W1 = Containment width at top.
W2 = Containment width at bottom.
L1 = Containment length at top.
L2 = Containment length at bottom.
H = Containment Height

BBL = Barrel(s)
GAL = Gallon(s)
FT³ = Cubic Feet
FT = Feet
1 FT³ = 7.481 Gallons
1 Barrel = 42 Gallons
1 Barrel = 5.6 Cubic Feet

1 = Circular stock tank (2' tall x 8' diameter) used for secondary containment.
2 = Sumps in compressor building floor (8' x 14' x 2.5' deep) used for secondary containment

SECONDARY CONTAINMENT INFORMATION
PARACHUTE CREEK GAS PLANT
WILLIAMS PRODUTION RMT COMPANY

PHASE 2

ID	Tank Contents/Description	Tank Volume (BBL)	Containment Number	CONTAINMENT DIMENSIONS Top Width (W1) (FT)	Bottom Width (W2) (FT)	Top Length (L1) (FT)	Bottom Length (L2) (FT)	Minimum Height (H) (FT)	Overall Secondary Containment Capacity (T) (FT^3)	(GAL)	(BBL)	(%)
1	Deionized Water	300	1	24.0	18.0	44.0	38.0	3.0	2,590	19,375	461	154
2	Amine	300	1	24.0	18.0	44.0	38.0	3.0	2,590	19,375	461	154
3	Amine Drain Tank	200	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
4	Lube oil	12	2	7.0	7.0	6.0	6.0	2.0	84	628	15	125
5	Lube oil	12	3	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
6	Therminol 50 (HMO)	80	4	22.0	18.0	25.0	21.0	1.5	692	5,177	123	154
7	Ethylene Glycol	80	4	22.0	18.0	25.0	21.0	1.5	692	5,177	123	154
8	Glycol	24	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	425
9	Glycol	25	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	408
10	Glycol	8	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	1,323
11	Glycol	7	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	1,435
12	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
13	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
14	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
15	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
16	Methanol	12	6	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
17	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
18	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
19	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
20	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
21	Propane	286	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	1,266
22	TEG	90	8	---[2]	---[2]	---[2]	---[2]	---[2]	1,355	10,135	241	268
23	Compressor Oil	210	8	---[2]	---[2]	---[2]	---[2]	---[2]	1,355	10,135	241	115
24	Glycol	90	8	---[2]	---[2]	---[2]	---[2]	---[2]	1,355	10,135	241	268
25	Glycol	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
26	Used Oil	80	---	---[3]	---[3]	---[3]	---[3]	1.7	524	3,917	93	117
27	Sump Tank	16	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0

Calculation to compensate for multiple tanks in containment:

Largest tank dimensions Volume (BBL)	Footprint area (FT^2)	Adjusted Containment Capacity (GAL)	(BBL)	(%)	
300	113	16,839	401	134	<< For containment #1
80	71	4,380	104	130	<< For containment #4
210	79	2,802	67	32	<< For containment #8

Notes:

Total Containment Capacity (T) = (H/3)x[(W1xL1)+(W2xL2)+SQRT(W1xL1xW2xL2)]

W1 = Containment width at top.

W2 = Containment width at bottom.

L1 = Containment length at top.

L2 = Containment length at bottom.

H = Containment Height

BBL = Barrel(s)

GAL = Gallon(s)

FT^3 = Cubic Feet

FT = Feet

1 FT^3 = 7.481 Gallons

1 Barrel = 42 Gallons

1 Barrel = 5.6 Cubic Feet

1 = Circular stock tank (2' tall x 8' diameter) used for secondary containment.

2 = Oblong steel vault containment.

3 = Circular steel vault (1.7' tall x 20' diameter) used for secondary containment.

SECONDARY CONTAINMENT INFORMATION
PARACHUTE CREEK GAS PLANT
WILLIAMS PRODUTION RMT COMPANY

PHASE 3												
				CONTAINMENT DIMENSIONS					Overall Secondary Containment Capacity (T)			
ID	Tank Contents/Description	Tank Volume (BBL)	Containment Number	Top Width (W1) (FT)	Bottom Width (W2) (FT)	Top Length (L1) (FT)	Bottom Length (L2) (FT)	Minimum Height (H) (FT)	(FT^3)	(GAL)	(BBL)	(%)
1	Diesel Fuel	12	1	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
2	Diesel Fuel	12	2	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
3	Unleaded Gasoline	7.1	3	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
4	CO2 Vent Tank	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
5	Flare Knockout Vessel?	65	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
6	Unk.	70	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
7	Unk.	70	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
8	Amine	90	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
9	Amine	300	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
10	Amine	300	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0

Notes:

Total Containment Capacity (T) = (H/3)x[(W1xL1)+(W2xL2)+SQRT(W1xL1xW2xL2)]

W1 = Containment width at top.

W2 = Containment width at bottom.

L1 = Containment length at top.

L2 = Containment length at bottom.

H = Containment Height

BBL = Barrel(s)

GAL = Gallon(s)

FT^3 = Cubic Feet

FT = Feet

1 FT^3 = 7.481 Gallons

1 Barrel = 42 Gallons

1 Barrel = 5.6 Cubic Feet

1 = Circular stock tank (2' tall x 8' diameter) used for secondary containment.

2 = Sumps in compressor building floor (8' x 14' x 2.5' deep) used for secondary containment

Appendix E

Inspection Procedures and Records

Inspection Procedures and Records

FACILITY NAME: PARACHUTE CREEK GAS PLANT

FACILITY ADDRESS: NE NE, SECTION 33 IN TOWNSHIP 6 SOUTH, RANGE 96 WEST IN GARFIELD COUNTY, COLORADO.

NEAR PARACHUTE, COLORADO

REFERENCE: SECTION 6.16 OF SPCC PLAN

WRITTEN PROCEDURES APPROVED BY:

Signature	Title
Name (please type or print)	Date

Inspection Procedures and Records

1. Responsibilities

These procedures establish the requirements for periodic inspections and tests for the oil storage vessels and oil-filled equipment listed at the Parachute Creek Gas Plant, to minimize the risk of a spill incident. The Principal Environmental Specialist is responsible for the implementation of these procedures. Specifically, the Principal Environmental Specialist is responsible for:

- Conducting the inspections;
- Producing documentation for deficiencies found during the inspections; and
- Making certain that remediation or repair work is properly prioritized and completed in a timely manner.

The Principal Environmental Specialist may designate another personnel member to complete the inspections. Designated personnel will have the authority to commit the resources necessary to carry out a response, if warranted. Operating personnel at the Parachute Creek Gas Plant receive training to familiarize themselves with all aspects of the SPCC Plan, facility operations, the location and characteristics of materials handled at the facility, and the location of pertinent records within the facility.

2. Procedures

The Principal Environmental Specialist (or designee) will conduct a monthly visual deficiency inspection of the oil storage vessels and oil-filled equipment identified in Section 6.5 of the SPCC Plan. The inspections will be documented using the attached inspection forms. The monthly inspection includes a visual examination of exterior surfaces for leaks and other deficiencies of the vessel, supports, connected piping and valves and secondary containment. It also includes visual inspection and monitoring of any leak detection system or other monitoring or warning systems (e.g., level indication/alarm or interstitial space monitoring). If any inspection reveals a leak or equipment deficiency outside of normal operating conditions, corrective action must be taken promptly to eliminate the leak or deficiency. Deficiencies noted during the inspection are recorded as a work order. The inspector will complete the following:

1. Visually inspect exterior surfaces of storage vessels and oil-filled equipment, along with associated pipes, valves and other appurtenances and identify any leaks, cracks, area of wear, external wall thinning, swelling, excessive corrosion or mechanical deficiency.
2. Visually inspect vessel/equipment supports and containment structures for excessive settlement, apparent structural weakness, cracks or other deficiency that would allow the secondary containment to leak.

3. Inspect and monitor existing leak detection systems (for example, observation ports on double-bottom tanks), cathodic protection equipment and other warning systems such as alarms and level gauges.

If, during the monthly inspection, the inspector observes a spill of oil from any of the equipment the inspector shall immediately initiate the oil spill response procedures outlined in **Appendix C** of this SPCC Plan.

Inspection Procedures and Records
Secondary Containment Drainage Log

Date and Time of Drainage	Containment Area Drained (ID# or description)	Appearance (visual, odor, etc.) Note: Do not discharge water containing any contaminant and/or free oil or an oil sheen.	Approximate Quantity Removed (Gals)	Method of Removal and Disposal

Appendix F

Training Procedures and Records

Training Procedures and Records
Spill Prevention Training Outline

FACILITY NAME: PARACHUTE CREEK GAS PLANT

FACILITY ADDRESS: NE NE, SECTION 33 IN TOWNSHIP 6 SOUTH, RANGE 96 WEST IN GARFIELD COUNTY, COLORADO.

NEAR PARACHUTE, COLORADO

REFERENCE: SECTION 6.17 OF SPCC PLAN

WRITTEN PROCEDURES APPROVED BY:

Signature

Title

Name (please type or print)

Date

Training Procedures and Records
Topics to be Covered in SPCC Training

1. Introduction/Training Roster

2. Facility Layout

3. General Facility Operations

4. Location of Oil Storage Areas
    a. Above Ground Storage Tanks
    b. Compressors/Separators/Scrubbers
    c. Lubricating Oil Containers

5. Facility SPCC Plan
    a. Physical Location of Plan
    b. Introduce/Review Contents of SPCC Plan
        i. General SPCC Requirements (§112.7)
        ii. Specific Requirements for Onshore Production Facilities (§112.9)

6. Operation of Oil-Filled Equipment and Containment Equipment
    a. Above Ground Storage Tanks
        i. Fill Procedures
    b. Compressors/Separators/Scrubbers
        i. Maintenance Procedures
    c. Lubricating Oil Containers
        i. Handling Procedures

7. Oil Spill/Discharge Response Procedures
    a. Appendix C of SPCC Plan

8. Known Oil Spill/Discharge Incidents at Facility in Past 12 Months

9. Applicable Rules and Regulations
    a. Federal Regulations
        i. 40 CFR 110: Discharge of Oil
        ii. 40 CFR 112: Oil Pollution Prevention
    b. State Regulations (CDPHE)
    c. Local (Garfield County LEPC)

Training Procedures and Records
Oil Discharge Prevention Briefings (Training) Roster

INSTRUCTOR:	DATE:

EMPLOYEE	TITLE	SIGNATURE

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

PARACHUTE CREEK GAS PLANT
PHASE 1 PLANT AREA
PHASE 2 PLANT AREA
PHASE 3 PLANT AREA
GARFIELD COUNTY, COLORADO

PREPARED FOR:

WILLIAMS PRODUCTION RMT COMPANY
P.O. Box 370
Parachute, Colorado 81635

REVISION DATE:
March 2007

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APPENDICES

SECTION 1.0 MANAGEMENT COMMITMENT CERTIFICATION

Management approval has been extended at a level with authority to commit the necessary resources to implement this Spill Prevention, Control and Countermeasure (SPCC) plan. Pursuant to §112.7(d), this is the written commitment of Williams Production RMT Company (Williams) to provide the manpower, equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful to human health and the environment. A copy of this plan shall be maintained by the operator as described herein and will be made available to the EPA Regional Administrator for on-site review during normal working hours.

Authorized Management Representative:

Signature:_____

Name: Steve Soychak

Title: District Manager

Date:_____

SECTION 2.0 ENGINEERING CERTIFICATION

Pursuant to §112.3(d) and by means of this certification, I attest that:

- I am familiar with the requirements of the SPCC rule (40 CFR 112);
- The facility has been visited and examined by myself or my agent;
- This plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of the SPCC rule;
- Procedures for required inspections and testing have been established; and,
- This plan is adequate for the facility.

Signature of Professional Engineer

3/1/07
Date

36229
State Registration No.

Colorado
State

Note: The PE's certification does not relieve the owner/operator of the facility of the duty of fully implementing the SPCC plan in accordance with all applicable requirements.

SECTION 3.0 INTRODUCTION

The Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, authorized the establishment of procedures, methods, equipment and other requirements for the prevention and/or containment of discharges of oil and hazardous substances from vessels and onshore and offshore facilities. In partial response to this authorization, the U.S. Environmental Protection Agency (USEPA) issued Oil Pollution Prevention Regulations for Non-Transportation Related Onshore and Offshore Facilities on December 11, 1973 (effective on January 10, 1974). These regulations were published under title 40 of the Code of Federal Regulations (CFR), Part 112 and specifically outlined requirements for the preparation of Spill Prevention, Control and Countermeasure (SPCC) plans.

On July 17, 2002 the USEPA published modifications to the SPCC requirements in the Federal Register (68 FR, 47042-47152). This SPCC plan has been prepared in accordance with these revised regulations. The SPCC regulations and additional information can be found at: http://www.epa.gov/oilspill/spcc.htm.

The following sections of this plan are presented in the sequence of the SPCC rule, as required by the rule. The substantive requirements (§112.7 and §112.9) are addressed in Sections 6 and 8, respectively. Throughout this plan, where applicable, references to the appropriate subsections of 40 CFR Part 112 are provided, followed by an explanation of how the requirements have been addressed.

SECTION 4.0 GENERAL APPLICABILITY

The Oil Pollution Prevention Regulations (40 CFR Part 112) require preparation of an SPCC plan for facilities that have discharged or could reasonably be expected to discharge oil into or upon navigable waters of the United States or adjoining shorelines. Specifically, §112.1(d)(2)(ii) requires an SPCC plan to be developed for facilities where the aggregate storage capacity of oil is greater than 1,320 gallons (inclusive of containers with thresholds of 55-gallons or greater). Because the Parachute Creek Gas Plant near Parachute, Colorado has a collective potential maximum above ground storage capacity of approximately 387,000 gallons, as well as individual stored volumes up to 45,000 gallons each, Williams is required to develop, implement and maintain an SPCC plan for this facility.

This SPCC plan has been developed for the Parachute Creek Gas Plant in response to the regulations listed above. The purpose of this plan is to identify sources of oil at the Parachute Creek Gas Plant and outline procedures to prevent the release of oil to navigable waters of the United States.

A release of oil is considered a *discharge* under this plan only if the release is into or upon the navigable waters of the United States, adjoining shorelines, or waters contiguous with the navigable waters of the United States. This is apparent if a release impacts surface water quality by causing a film, sheen or discoloration of the water surface or adjoining shorelines, or causes a sludge or emulsion to be deposited beneath the surface of the adjoining shorelines. Impacts to groundwater also apply if the groundwater is contiguous with navigable waters of the United States (i.e., groundwater discharges to/contributes to the total volume of a surface water body that is itself contiguous with navigable waters of the United States).

Any facility that could, because of its location, be expected to cause substantial harm to the environment by discharging oil into or on navigable waters or adjoining shorelines is required to prepare and submit a facility response plan (FRP) to the USEPA Regional Administrator (RA) in accordance with 40 CFR Part 112.20. The Parachute Creek Gas Plant is not considered such a facility because it does not meet any of the substantial harm criteria specified in §112.20. These criteria, and the associated applicability determination regarding the Parachute Creek Gas Plant, are shown in **Appendix A**. This appendix is the *Certification of the Applicability of the Substantial Harm Criteria* required by §112.20 and must be maintained at the facility. Because submittal of an FRP is not required, except at the discretion of the RA, this SPCC plan provides information and procedures for responding to discharges.

SECTION 5.0 SPCC PLAN ADMINISTRATION: §112.3, §112.4, AND §112.5

5.1 Requirement to Prepare: §112.3

This SPCC plan was prepared to comply with the SPCC rule (40 CFR Part 112) that was amended and promulgated on July 17, 2002. In accordance with §112.3(a) and the recent compliance timeline extension announced by the EPA, this plan was completed prior to and will be fully implemented prior to July 1, 2009.

In accordance with §112.3(e)(1) and (2), a complete updated copy of the SPCC Plan and associated files will be maintained at the plant site, and at the Williams district office in Parachute, Colorado. During normal working hours at the facility, the plan will be available to authorized representatives of Local, State or Federal governing agencies for on-site review and a copy will be submitted to the EPA if requested.

5.2 Amendment by Regional Administrator: §112.4

In accordance with §112.4(a), whenever more than 1,000-gallons of oil have been *discharged* in a single incident or more than 42-gallons of oil have been *discharged* in each of two incidents over a 12-month period, Williams will submit a report to the EPA RA within 60 days (refer to the definition of a discharge previously provided in Section 4). The report must include the following:

- §112.4(a)(1): Name of the facility;
- §112.4(a)(2): Name of the operator;
- §112.4(a)(3): Location of the facility;
- §112.4(a)(4): Maximum storage or handling capacity of the facility and the normal daily throughput;
- §112.4(a)(5): Corrective action and countermeasures that have been taken, including a description of equipment repairs and replacements;
- §112.4(a)(6): An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- §112.4(a)(7): The cause of such discharge as described in 40 CFR 112.1(b), including a failure analysis of the system or subsystem in which the failure occurred;

- §112.4(a)(8): Additional preventive measures taken or planned to minimize the possibility of recurrence; and

- §112.4(a)(9): Such other information as the Regional Administrator may reasonably require pertinent to the SPCC Plan or discharge.

In accordance with 40 CFR 112.4(c), copies of the incident report will also be forwarded to the representative/case manager designated by the appropriate local or tribal agency. Should the RA subsequently propose by certified mail or personal delivery that this SPCC plan be amended, in accordance with §112.4(e) Williams will:

- Submit arguments and supporting information in response to the proposed amendments within 30 days; or

- Amend this SPCC plan within 30 days and implement the amended plan within six months, unless otherwise authorized by the RA.

As required by §112.4(c), technical amendments to the plan will be certified by a Professional Engineer.

5.3 SPCC Plan Amendment by Owner/Operator: §112.5

In accordance with §112.5(a), when there is a change in facility design, construction, operation, or maintenance that materially affects the facility's potential for a discharge, Williams will amend this SPCC plan within six months of the change and implement the amended plan within six months of its completion.

In accordance with §112.5(b), Williams will also review this plan at least once every five years from the date of the last review. As a result of the review, the plan will be amended within six months of the review if more effective prevention and control technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge. The amended plan will be implemented within six months of its completion. The designated person accountable for oil spill prevention at the facility (the Principal Environmental Specialist, see Section 6.1) will document completion of each five year review, sign a statement as to whether the plan will be amended, and record the results in **Appendix B**.

As required by §112.5(c), technical amendments that require the application of good engineering practice will be certified by a Professional Engineer. Any such amendments to this SPCC plan shall be noted on the Amendment Log included in **Appendix B** of this SPCC plan. Entries into the log will indicate a general description of the changes that were made to the facility, the corresponding changes that were made to the SPCC plan, including plan section and page numbers, and the name and signature of the person making the changes. A new certification page will be signed, sealed and inserted into this plan to complete the amendment process.

Non-technical changes include, but are not limited to, such items as: contact lists, more stringent requirements for stormwater discharge to comply with NPDES rules, phone numbers, product changes (if the new product is compatible with conditions in the existing tank and secondary containment materials), and any other change which do not materially affect the facility's potential to discharge oil. If Williams' personnel are unsure whether the amendment is technical or non-technical, the amendments should be reviewed and certified by a Professional Engineer.

SECTION 6.0 SPCC PLAN GENERAL REQUIREMENTS: §112.7

This section presents facility-specific details associated with the general requirements for SPCC plans outlined in §112.7. As previously indicated in Sections 1,2 and 3, this SPCC plan has been prepared in accordance with good engineering practice, with management approval at a level with authority to commit the necessary resources for full implementation, and in the sequence of the rule.

6.1 General Facility Information

Name and type of facility:

The Parachute Creek Gas Plant is a natural gas processing and compression facility, owned and operated by Williams Production RMT Company. The Parachute Creek Gas Plant is considered a production facility, as it is upstream of associated custody transfer points to transportation-related systems.

Location of facility:

The Parachute Creek Gas Plant is located in the northeast quarter of the northeast quarter of Section 33 in Township 6 South, Range 96 West in Garfield County, Colorado. See **Figure 1** for additional site location information. The town of Parachute, Colorado, which lies approximately 4 miles west southeast of the facility, is the nearest population center.

Owner name and address:

Williams Production RMT Company
1515 Arapahoe, Tower 3, Suite 1000
Denver, Colorado 80202
(303) 573-3900

Designated personnel accountable for spill prevention:

Regional/District Contact
Mr. Steve Soychak
District Manager
Williams Production RMT Co.
P.O. Box 370
Parachute, Colorado 81635
(970) 285-9377 office
(970) 216-0922 mobile

SPCC Contact
Mr. Michael Gardner
Senior Environmental Specialist
Williams Production RMT Co.
1058 County Road 215
Parachute, Colorado 81635
(970) 263-2760 office
(970) 640-1855 mobile

Has the facility experienced a reportable oil spill (discharge) event during the past 12 months?

No, the facility has not experienced a reportable oil spill event during the 12 months preceding the certification date of this SPCC plan.

6.2 General Facility Description

The Parachute Creek Gas Plant is a natural gas processing and compression facility, owned and operated by Williams Production RMT Company. The facility is located in western Colorado, in Garfield County, on private property. The area surrounding the facility is considered multiple-use land and area activities include oil and gas exploration and production. The location of the plant is depicted on **Figure 1**. Details of the facility and oil storage areas at the facility are shown on **Figures 2, 3 and 4**.

According to U.S. Geological Survey topographic mapping sources (Parachute, Colorado quadrangle), the site lies at an approximate elevations of 5,410 feet above mean sea level, with shallow relief in the immediate vicinity of the site. Information from the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) indicates the soils in the area of the Parachute Creek Gas Plant are of the Arvada-Torrifluents-Heldt complex, which is described as follows:

These soils are deep, well drained to somewhat poorly drained, nearly level to gently sloping soils on benches, terraces, alluvial fans, and flood plains.

Arvada soils are on benches, terraces and fans. They are deep, well drained, and alkali affected. The surface layer is loam, the subsurface is strongly alkaline silty clay loam, and the substratum is silty clay loam.

Torrifluvents are on flood plains and low terraces. They are deep and well drained to somewhat well poorly drained. They are sandy loam or loam stratified with sand, gravel, or cobbles.

Heldt soils are on alluvial fans. They are deep and well drained. The surface and subsoil are clay loam, and the substratum is clay.

Parachute Creek, a perennial stream, is located approximately 750 feet southwest and down gradient of the Parachute Creek Gas Plant. Parachute Creek flows southeast to its confluence with the Colorado River, approximately 3.8 miles southeast of the site. There is also an irrigation drainage ditch, which flows intermittently, approximately 150 feet north and up gradient of the site. All existing drainages in the vicinity of the facility discharge to Parachute Creek. Drainage within the site boundary is governed by surface topography. Downhill slope direction arrows on **Figures 2, 3 and 4** indicate the predicted general direction of storm water flow to the south and west.

The facility consists of metering equipment, dehydration, separation, and processing equipment, above ground storage tanks, and piping systems. Products related to the maintenance and operation of the facility are stored in above ground storage tanks. Natural gas liquids are occasionally taken from the facility via tank truck. The facility operates 24 hours per day and is continuously manned by operations personnel. An inventory of all storage tanks at the facility is provided in Section 6.5. Williams has determined that specific liquids stored at the facility are considered oils for the purpose of this SPCC plan. The plant is considered a production facility and is hence subject to the specific SPCC requirements of 40 CFR §112.9 for onshore production facilities.

6.3 SPCC Plan Conformance and Deviations: §112.7(a)(1) and (2)

This SPCC plan conforms with and does not deviate from the applicable requirements of CFR 40 §112.7, as detailed in the subsequent sections of this SPCC plan. The Parachute Creek Gas Plant is an onshore production facility and is therefore subject to §112.9.

6.4 Facility Layout: §112.7(a)(3)

Oil storage areas at the facility are identified on **Figures 2, 3 and 4**. There are no completely buried or bunkered tanks at the facility, or buried pipelines related to the handling of oil as defined by §112.2 of the SPCC regulations, other than lines leading from the separation equipment to storage tanks. Aboveground storage containers and oil-filled equipment applicable to this plan are listed below in Section 6.5

6.5 Oil Storage Capacity: §112.7(a)(3)(i)

A summary of the substance, containers and container capacities applicable to this plan is provided in the following table. Although oil-filled equipment are not considered containers as defined by §112.2, the preamble of the SPCC rule (67 FR, 47054-47055) indicates that applicability criteria such as oil storage capacity and potential for a discharge still pertain and the prevention of discharges from such equipment still falls within the scope of the SPCC rule. Consequently, the type of oil and capacity of the oil-filled equipment at the Parachute Creek Gas Plant are included in the summary.

SPCC-Regulated Storage Containers and Oil-Containing Equipment

PHASE 1			
Stored Material/ Description	**Type of Container/Equipment**	**Reference ID (See Figure 2)**	**Storage Capacity (Gallons)**
Lubricating Oil	Above ground storage tank	1	500
Used Oil	Above ground storage tank	3	3,360
Condensate	Above ground storage tank	6	12,600
NGL	Above ground storage vessel	7	45,000
NGL	Above ground storage vessel	8	45,000
Combustor Skid Drain	Above ground storage tank	13	3,360
Lubricating Oil	Above ground storage tank	14	500
Hot Oil Tank	Above ground storage tank	17	2,940
Hot Oil Heater	Above ground storage tank	18	4,200
Hot Oil Heater	Above ground storage tank	19	4,200
Lubricating Oil	Above ground storage tank	20	1,000
Lubricating Oil	Above ground storage tank	21	1,000
Lubricating Oil	Above ground storage tank	23	500
Lubricating Oil	Above ground storage tank	24	500
Lubricating Oil	Above ground storage tank	25	500
Unleaded Gasoline	Above ground storage tank	27	500
Off-Road Diesel	Above ground storage tank	28	500
Sump Tank	Above ground storage tank	29	4,200
Heater Sump Tank	Above ground storage tank	31	675
Vent Tank	Above ground storage tank	32	1,000
Produced Water	Above ground storage tank	34	16,800
Produced Water	Above ground storage tank	35	16,800
Produced Water	Above ground storage tank	36	16,800
Propane	Above ground storage vessel	37	1,500
Phase 1 Storage Capacity			183,935

PHASE 2			
Stored Material/ Description	**Type of Container/Equipment**	**Reference ID (See Figure 3)**	**Storage Capacity (Gallons)**
Lubricating Oil	Above ground storage tank	4	500
Lubricating Oil	Above ground storage tank	5	500
Lubricating Oil	Above ground storage tank	12	500
Lubricating Oil	Above ground storage tank	13	500
Lubricating Oil	Above ground storage tank	14	500
Lubricating Oil	Above ground storage tank	15	500
NGL	Above ground storage vessel	17	45,000
NGL	Above ground storage vessel	18	45,000
NGL	Above ground storage vessel	19	45,000
NGL	Above ground storage vessel	20	45,000
Propane	Above ground storage vessel	21	12,000
Used Oil	Above ground storage vessel	26	3,360
Sump Tank	Above ground storage vessel	27	675
Phase 2 Storage Capacity			199,035

PHASE 3			
Stored Material/ Description	**Type of Container/Equipment**	**Reference ID (See Figure 4)**	**Storage Capacity (Gallons)**
Diesel Fuel	Above ground storage tank	1	500
Diesel Fuel	Above ground storage tank	2	500
Unleaded Gasoline	Above ground storage tank	3	300
Flare K.O. Vessel	Above ground storage tank	5	2,730
Phase 3 Storage Capacity			4,030
Plant Overall Storage Capacity			387,000

6.6 Discharge Prevention Measures: §112.7(a)(3)(ii)

The Parachute Creek Gas Plant relies on a number of measures to aide in the prevention of a discharge. Descriptions of these measures are provided below.

- Routine maintenance of any oil-containing equipment is performed by trained personnel at the location of the equipment utilizing soaker pads and the available secondary containment structures and/or drip pans as warranted.

- Each storage tank or vessel has a system in place that has been designed and installed in accordance with good engineering practice to prevent discharges. These features may include: adequate containment volume to avoid overfill during normal operations, and; high level sensors and controls to stop liquid flow. All discharge features are inspected at regular intervals.

6.7 Discharge or Drainage Controls: §112.7(a)(3)(iii)

The products stored at the Parachute Creek Gas Plant (natural gas liquids, produced water, and lubricating oil) are noncorrosive materials and are compatible with the materials with which the storage containers and containment structures at the facility are constructed. The containment structures at the facility are designed to provide adequate protection against the discharge of oil. Secondary containment is provided for the atmospheric aboveground storage tanks. Secondary containment details are provided in Sections 6.14 and 6.19.

Containment capacity calculations and/or specifications are provided in **Appendix D**. Each secondary containment system, including the walls and floor of the respective system, is capable of containing oil and has been constructed so that any discharge from a primary containment system (such as a tank or pipe) will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs.

6.8 Countermeasures for Discharge Discovery, Response and Cleanup: §112.7(a)(3)(iv)

As part of routine facility procedures, visual exterior inspections of the oil storage containers and equipment are made several times per week, at a minimum, for signs of deterioration or leaks. Deficiencies noted from these examinations are entered on a check sheet and corrected in a timely manner. Inspection check sheets are kept in a logbook in the plant office. In addition to the regular checks, the oil storage equipment is inspected every month according to the written procedures outlined in Section 6.16 of this plan

In the event of a release, the facility has trained personnel and equipment available to contain and clean up minor volumes of oil. On-site equipment and materials include spill kits, shovels, and sorbent materials (booms, pads, etc.) that may be used to dike, contain and remove minor releases.

In the event of a larger release, specific response procedures have been developed (See **Appendix C**). As part of these procedures, external resources (contractors) have been identified to assist facility personnel. To ensure the commitment of these external resources, Williams Production RMT Company maintains a service agreement with each selected contractor. A list of approved contractors is kept at the plant site and at the Williams district office in Parachute, Colorado. At a minimum, contractors identified to assist in a spill response will have the capabilities to provide emergency response, industrial power vacuuming, tank and pipeline cleaning, equipment decontamination, excavation/earthmoving and waste transportation and disposal services.

6.9 Recovered Materials Disposal: §112.7(a)(3)(v)

Materials recovered during a spill event will be appropriately containerized or will be remediated on site in accordance with Colorado Oil and Gas Conservation Commission (COGCC) stipulations. Soils and other solids will be placed in 55-gallon drums or roll-off containers, or in other approved containers as warranted. Liquids will be placed in 55-gallon drums or will be collected in a tank truck using industrial power vacuuming. Recovered materials will be labeled, characterized and disposed/recycled in accordance with applicable federal, state and local regulations.

6.10 Contact List and Notification Phone Numbers: §112.7(a)(3)(vi)

The contact list for oil spill response activities is provided in **Appendix C**, as part of the Oil Spill Response Procedures developed for the Parachute Creek Gas Plant.

6.11 Reporting and Notification Procedures: §112.7(a)(4)

Reporting and notification requirements are outlined in the Oil Spill Response Procedures provided in **Appendix C**.

6.12 Oil Spill Response Procedures: §112.7(a)(5)

Oil Spill Response Procedures for the Parachute Creek Gas Plant are provided in **Appendix C**.

6.13 Discharge Analysis: §112.7(b)

Pursuant to §112.7(b), predictions of the direction, rate of flow, and total quantity of material that could be discharged at the facility, in the event of a breach or failure of the secondary containment structures, are summarized in the table below for oil storage containers or oil-filled equipment.

Potential Spill Prediction and Control

Source	Primary Failure Mechanism	Storage Capacity (Gallons)	Discharge Flow Direction	Required Containment Capacity[1] (Gallons)	Current Containment Capacity[2] (Gallons)
PHASE 1					
Storage tank #1	Leakage, overfilling	500	South, east	575	756
Storage tank #3	Leakage, overfilling	3,360	South, east	3,804	3,915
Storage tank #6	Leakage, overfilling	12,600	South, east	14,490	29,514
Storage vessel #7	Leakage, overfilling	45,000	South, east	51,750	122,356
Storage vessel #8	Leakage, overfilling	45,000	South, east	51,750	122,356
Storage tank #13	Leakage, overfilling	3,360	South, east	3,864	9,682
Storage tank #14	Leakage, overfilling	500	South, east	575	756
Storage tank #17	Leakage, overfilling	2,940	South, east	0	0
Storage tank #18	Leakage, overfilling	4,200	South, east	0	0
Storage tank #19	Leakage, overfilling	4,200	South, east	0	0
Storage tank #20	Leakage, overfilling	1,000	South, east	1,150	0
Storage tank #21	Leakage, overfilling	1,000	South, east	1,150	0
Storage tank #23	Leakage, overfilling	500	South, east	575	756
Storage tank #24	Leakage, overfilling	500	South, east	575	2,095
Storage tank #25	Leakage, overfilling	500	South, east	575	0
Storage tank #27	Leakage, overfilling	500	South, east	575	756
Storage tank #28	Leakage, overfilling	500	South, east	575	756
Storage tank #29	Leakage, overfilling	4,200	South, east	0	0
Storage tank #31	Leakage, overfilling	675	South, east	0	0
Storage tank #32	Leakage, overfilling	1,000	South, east	1,150	3,162
Storage tank #34	Leakage, overfilling	16,800	South, east	19,320	31,102
Storage tank #35	Leakage, overfilling	16,800	South, east	19,320	31,102
Storage tank #36	Leakage, overfilling	16,800	South, east	19,320	31,102
Storage vessel #37	Leakage, overfilling	1,500	South, east	1,725	2,545
PHASE 2					
Storage tank #4	Leakage, overfilling	500	South, east	575	628
Storage tank #5	Leakage, overfilling	500	South, east	575	756
Storage tank #12	Leakage, overfilling	500	South, east	575	4,279
Storage tank #13	Leakage, overfilling	500	South, east	575	4,279
Storage tank #14	Leakage, overfilling	500	South, east	575	4,279
Storage tank #15	Leakage, overfilling	500	South, east	575	4,279
Storage vessel #17	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #18	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #19	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #20	Leakage, overfilling	45,000	South, east	51,750	151,859
Storage vessel #21	Leakage, overfilling	12,000	South, east	13,800	151,859
Storage tank #26	Leakage, overfilling	3,360	South, east	3,772	3,917

Storage tank #27	Leakage, overfilling	675	South, east	0	0
PHASE 3					
Storage tank #1	Leakage, overfilling	500	South, east	575	756
Storage tank #2	Leakage, overfilling	500	South, east	575	756
Storage tank #3	Leakage, overfilling	300	South, east	575	756
Storage tank #5	Leakage, overfilling	2,730	South, east	3,140	0

Notes:

1. The indicated capacities are sufficient volumes required to contain the storage capacity of the largest vessel in the specific containment plus at least 2.1 inches of freeboard to accommodate precipitation associated with a 24-hour 25-year storm event. (Source: NOAA Atlas 2)
2. Secondary containment deficiencies exist where the current containment capacity is listed as "0".

6.14 Spill Containment: §112.7(c)

Oil storage containers at the Parachute Creek Gas Plant are equipped with secondary containment as noted in this document. Although oil-filled equipment are not considered containers as defined by §112.2, the preamble of the SPCC rule indicates that the requirements of §112.7(c) still apply. Spill containment at the facility is described below:

- Secondary containment is typically provided for the lubricating oil, and condensate above ground storage tanks in the form of earthen dikes or steel-wall containers. Containment for the other oil-filled equipment and vessels and the loading area is provided as described below or in Section 6.19. Secondary containment deficiencies will be corrected by July 1, 2009.

- Containment structures are configured to contain the storage capacity of the largest tank within the containment area, plus at least 2.1 inches of freeboard to accommodate precipitation associated with a 24-hour 25-year storm event (Source: U.S. Department of Commerce National Oceanic and Atmospheric Administration Atlas 2, Volume II). The containment volume calculations associated with the secondary containment structures are presented in **Appendix D**.

6.15 Spill Containment Practicability: §112.7(d)

No discussions related to practicability are warranted because this SPCC plan either does not deviate from the requirements of §§112.7(c), 112.7(h)(1), 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.14(c), or, where it does deviate, the deviations are not practicability-caused issues.

6.16 Inspections, Tests and Records: §112.7(e)

Oil storage containers, oil-filled equipment and related containment structures at the Parachute Creek Gas Plant are visually examined several times per week, at a minimum, for signs of deterioration or leaks. These inspections are conducted as part of normal facility operations. Deficiencies noted from these examinations are entered on a check sheet and corrected in a timely manner. The equipment is also inspected every month according to the written procedure in **Appendix E**.

Signed and dated records of all inspections and other pertinent information, such as spills, removal and disposal of spill contaminated materials, replacement or repair of equipment, and training are maintained for a minimum of 3 years.

6.17 Personnel Training and Discharge Prevention Measures: §112.7(f)

Oil-handling personnel operating the facility are required to have training in the operation and maintenance of equipment to prevent the discharge of oil; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and the contents of the facility SPCC plan. They are under the direct supervision of the Principal Environmental Specialist, who is responsible for establishing performance and duty guidelines and is the designated person accountable for spill prevention at the facility. Regular safety meetings are held to discuss a variety of safety procedures and other pertinent job responsibility criteria. A written record of all training is maintained for 3 years.

At a minimum, training is conducted annually and whenever new spill regulations are promulgated, existing operating systems are modified, personnel responsibilities change, or the SPCC plan is amended. In addition, regular safety meetings will be used as a forum to reinforce understanding of SPCC procedures as necessary. An outline of the topics to be covered during SPCC training is presented in **Appendix F**. Attendance rosters and other training records will be maintained in the main office at the facility for a period of no less than three years.

6.18 Security: §112.7(g)

The Parachute Creek Gas Plant is a secure facility and is typically not subject to trespass or vandalism. The facility is fully fenced with lockable access gates. The facility is in operation and attended 24 hours per day. General security is controlled by operations personnel during regular duties. Flow valves are generally kept locked or sealed to preclude tampering. The lighting at the facility is adequate for nighttime operations and appropriate for this type of facility.

When a pipe that has potential for re-use is not in service, or it is in a standby service for an extended period of time, any associated valves are kept closed and locked and lines are sealed appropriately and marked as to their tie-in connection.

6.19 Facility Tank Car and Tank Truck Loading/Unloading: §112.7(h)

The Parachute Creek Gas Plant does not currently have tank car or tank truck unloading racks. Secondary containment for truck loading/unloading areas is discussed in Sections 6.6 and 6.7.

Proper loading procedures will be followed and wheel chocks used by tank truck drivers to prevent vehicles from departing or moving before completed disconnection of flexible or fixed oil transfer lines. All tank truck drivers are required to comply with DOT regulations in 49 CFR Part 177 and facility standard operating procedures. All drivers must be authorized and/or certified by Williams Production RMT Company.

If available, Williams operations personnel will remain with any delivery truck during filling operations to monitor the transfer; inspect outlets, connections and valves on the delivery tank truck before and after oil-filling operations; and make adjustments as necessary. The driver or an operations personnel member visually inspects all tank trucks before leaving the loading/unloading areas. The lowermost drain and all outlets of transport vehicles shall be inspected and, if necessary, make certain that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

6.20 Brittle Fracture Analysis: §112.7(i)

The Parachute Creek Gas Plant has no field-constructed aboveground oil-storage containers that apply to this plan and therefore this section of the regulation is not applicable.

6.21 Applicable Requirements: §112.7(j)

Sections 6 and 8 of this plan provide detailed discussions of conformance with the applicable requirements and other effective discharge prevention used at the facility.

SECTION 7.0 REQUIREMENTS FOR ONSHORE (NON-PRODUCTION) FACILITIES: §112.8

The Parachute Creek Gas Plant is not an onshore non-production facility. Consequently, the provisions in §112.8 do not apply.

SECTION 8.0 REQUIREMENTS FOR ONSHORE OIL PRODUCTION FACILITIES: §112.9

8.1 Oil Production Facility Drainage: §112.9(b)

Precipitation that may accumulate in any contained area is normally allowed to evaporate. No automatic pumps or ejector devices are present in any of the containment areas. If removal of any water accumulated in the containment areas is necessary, it will be conducted under the direct supervision of responsible personnel as described in this section.

Accumulated precipitation is removed, when necessary, from secondary containment areas using a vacuum truck, pump, or other appropriate method. Removed water is disposed of in accordance with applicable local, state, and federal regulations. Prior to removal of the water from any containment area, the responsible personnel visually inspect the water in the containment structure and note the appearance of the water in the facility logs. The name of the person draining the containment, as well as the date, time, and approximate quantity of water removed will also be recorded in the facility logs and kept on file with the SPCC documents for a period of at least three years. A secondary containment drainage log is included in **Appendix E**.

The drain systems at the Parachute Creek Gas Plant are of the 'enclosed' type. All process effluents are routed through drain lines to storage tanks. No process effluents, untreated or treated, are released off-site.

All field drainage systems (such as drainage ditches or road ditches) in the vicinity of the facility are inspected at regular intervals for the presence of accumulated oil that may have resulted from a small discharge. Any accumulated oil will be removed from these areas promptly upon discovery.

8.2 Oil Production Facility Bulk Storage Containers: §112.9(c)

The products stored at the Parachute Creek Gas Plant are compatible with the materials with which the storage containers and containment structures at the facility are constructed. Secondary containment is provided for several of the atmospheric above ground storage tanks. Specific secondary containment details are presented in Sections 6.14 and 6.19.

Oil storage containers at the Parachute Creek Gas Plant are equipped with secondary containment as noted in this document. Although oil-filled equipment are not considered containers as defined by §112.2, the preamble of the SPCC rule indicates that the requirements of §112.7(c) still apply. Spill containment at the facility is described in Section 6.14 and **Appendix D**.

Certain secondary containment structures at the facility are constructed with native soils or road construction-grade fill material. The composition of the native soil is considered sufficiently impervious to contain spilled oil until cleanup operations can commence.

Oil storage containers, oil-filled equipment and related containment structures at the Parachute Creek Gas Plant are visually examined several times per week, at a minimum, for signs of deterioration or leaks. These inspections are conducted as part of normal facility operations. Deficiencies noted from these examinations are entered on a check sheet and corrected in a timely manner. The equipment is also inspected every month according to the written procedure in **Appendix E**.

Each storage tank or vessel at the Parachute Creek Gas Plant has a system in place that has been designed and installed in accordance with good engineering practice to prevent discharges. These features may include adequate container volume to avoid overfill and high-level sensors and controls to stop liquid flow. All discharge prevention features are inspected at regular intervals.

8.3 Facility Transfer Operations, Oil Production Facility: §112.9(d)

All above ground valves and pipelines are routinely inspected for the general condition of flange joints, valve glands and bodies, drip pans, pipe supports, and other appurtenances. Integrity or leak testing is also performed at the time of any installation, modification, construction, relocation, or replacement of buried piping.

The following procedures and protocols are in place to maintain all flow lines in order to prevent discharges from flow lines:

- All buried piping at the facility is protected by coating or wrapping. Any buried equipment will be visually inspected for corrosion whenever exposed through excavation. Further inspection and repair will be conducted on the affected metal equipment if problems are identified to minimize the chance for a discharge from facility transfer equipment.
- When a pipe that has potential for re-use is not in service, or it is in a standby service for an extended period of time, any associated valves are kept closed and locked and lines are sealed appropriately and marked as to their tie-in connection.
- All pipe supports at the facility are designed to minimize abrasion and corrosion and to allow for expansion and contraction. Pipe supports are routinely inspected as part of the general facility inspections described in this SPCC plan.

SECTION 9.0 REQUIREMENTS FOR ONSHORE OIL DRILLING AND WORK OVER FACILITIES: §112.10

The Parachute Creek Gas Plant is not an onshore oil drilling or work over facility. Consequently, the provisions in §112.10 do not apply.

SECTION 10.0 REQUIREMENTS FOR OFFSHORE OIL DRILLING, PRODUCTION AND WORK OVER FACILITIES: §112.11

The Parachute Creek Gas Plant is not an offshore oil drilling, production or work over facility. Consequently, the provisions in §112.11 do not apply.

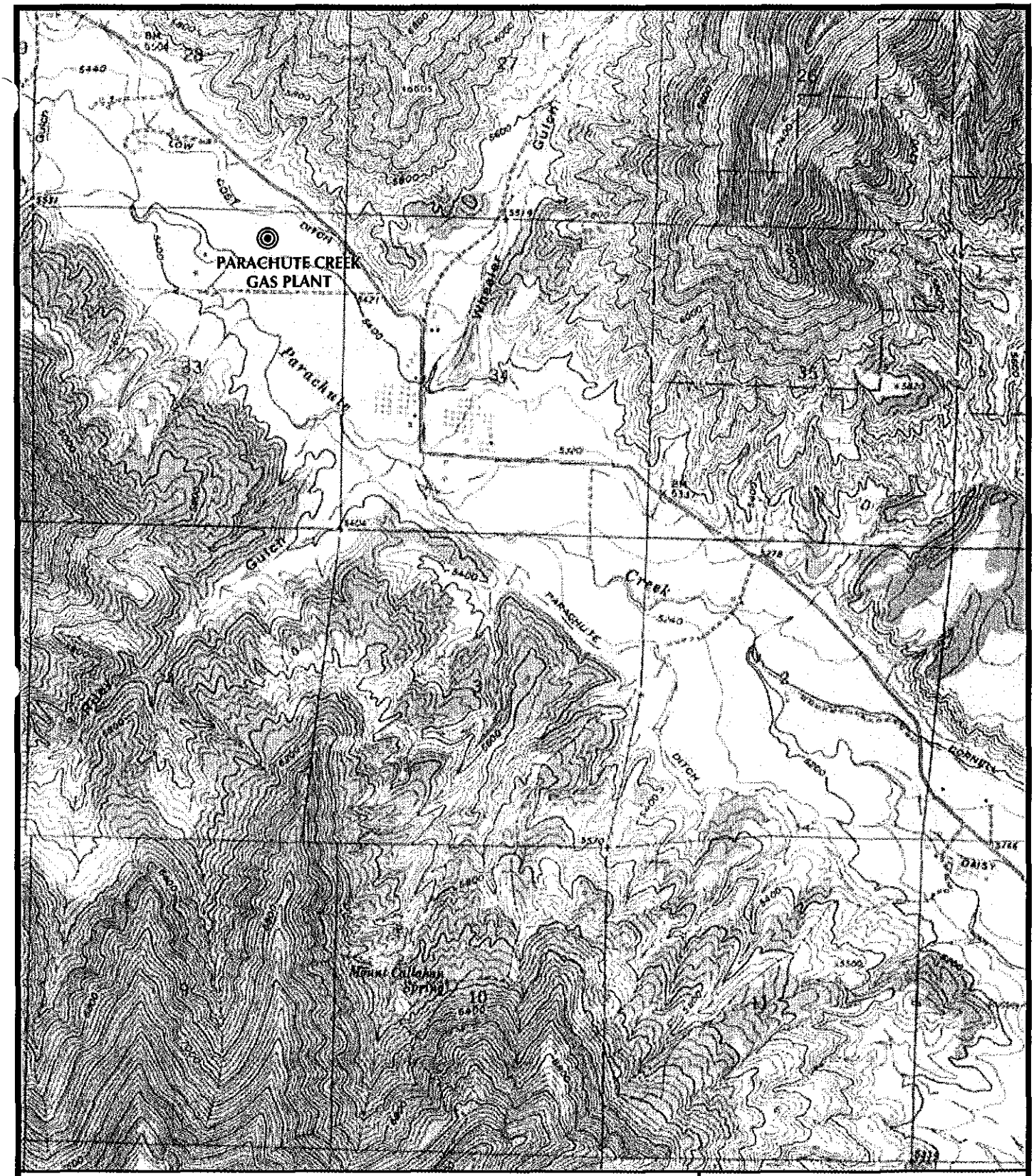
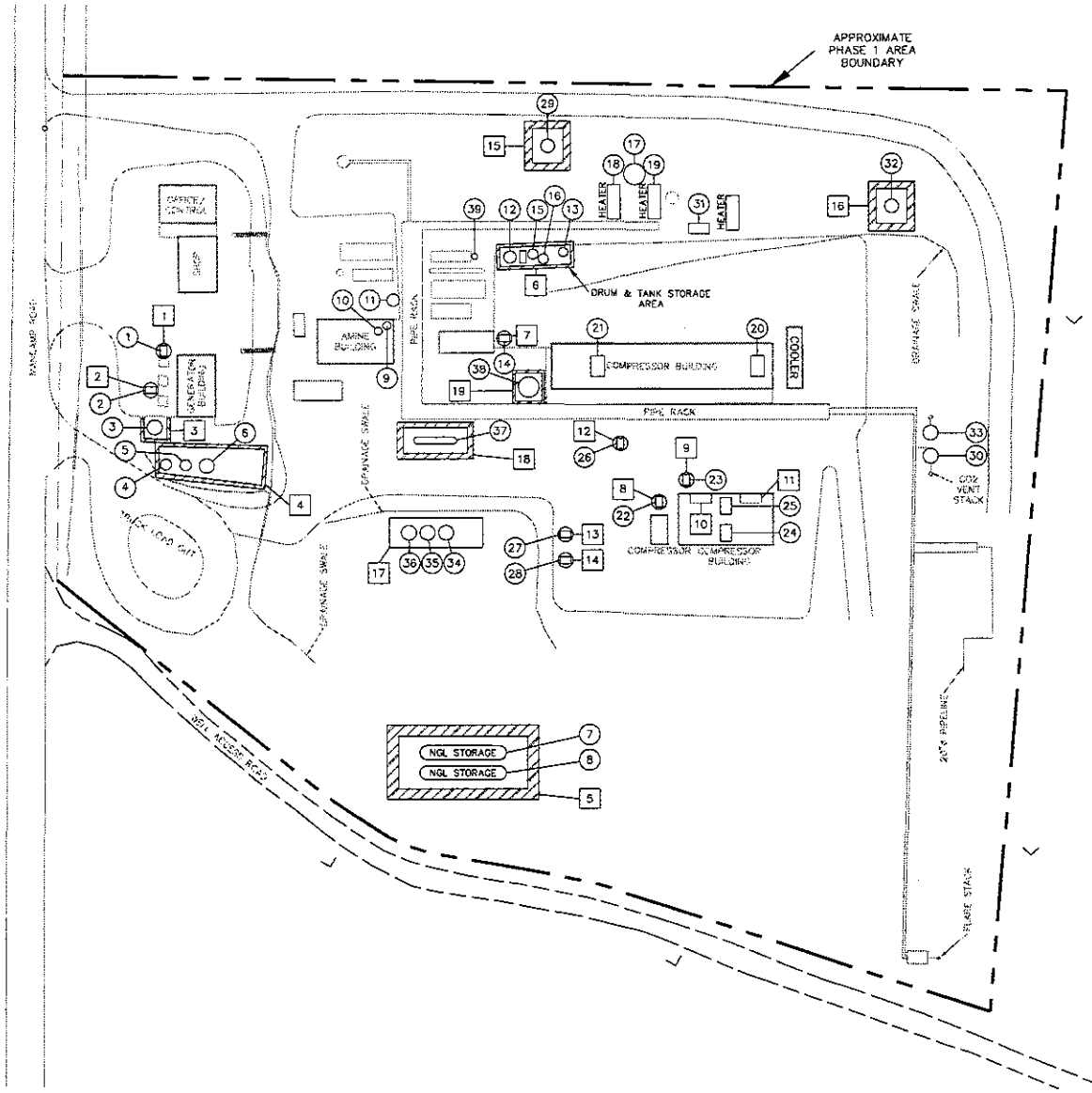


FIGURE 1
SITE LOCATION MAP
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	8/29/03
REVISION NUMBER:	001
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02067
SCALE:	1:24,000

CORDILLERAN

MAP SOURCE: 7.5 MINUTE U.S.G.S. TOPOGRAPHIC MAP (PARACHUTE QUADRANGLE)
SITE LEGAL LOCATION: NE NE, SECTION 33, TOWNSHIP 6 SOUTH, RANGE 96 WEST



LEGEND

- > = ESTIMATED DIRECTION OF DRAINAGE FLOW
- (1) = STORAGE TANK REFERENCE NUMBER
- [1] = SECONDARY CONTAINMENT REFERENCE NUMBER

50 0 50 100 150

APPROXIMATE SCALE IN FEET

TRUE NORTH

PHASE 1 NORTH

FIGURE 2
SITE MAP PHASE I
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	3/1/07
REVISION NUMBER:	006
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02071
SCALE: AS NOTED	

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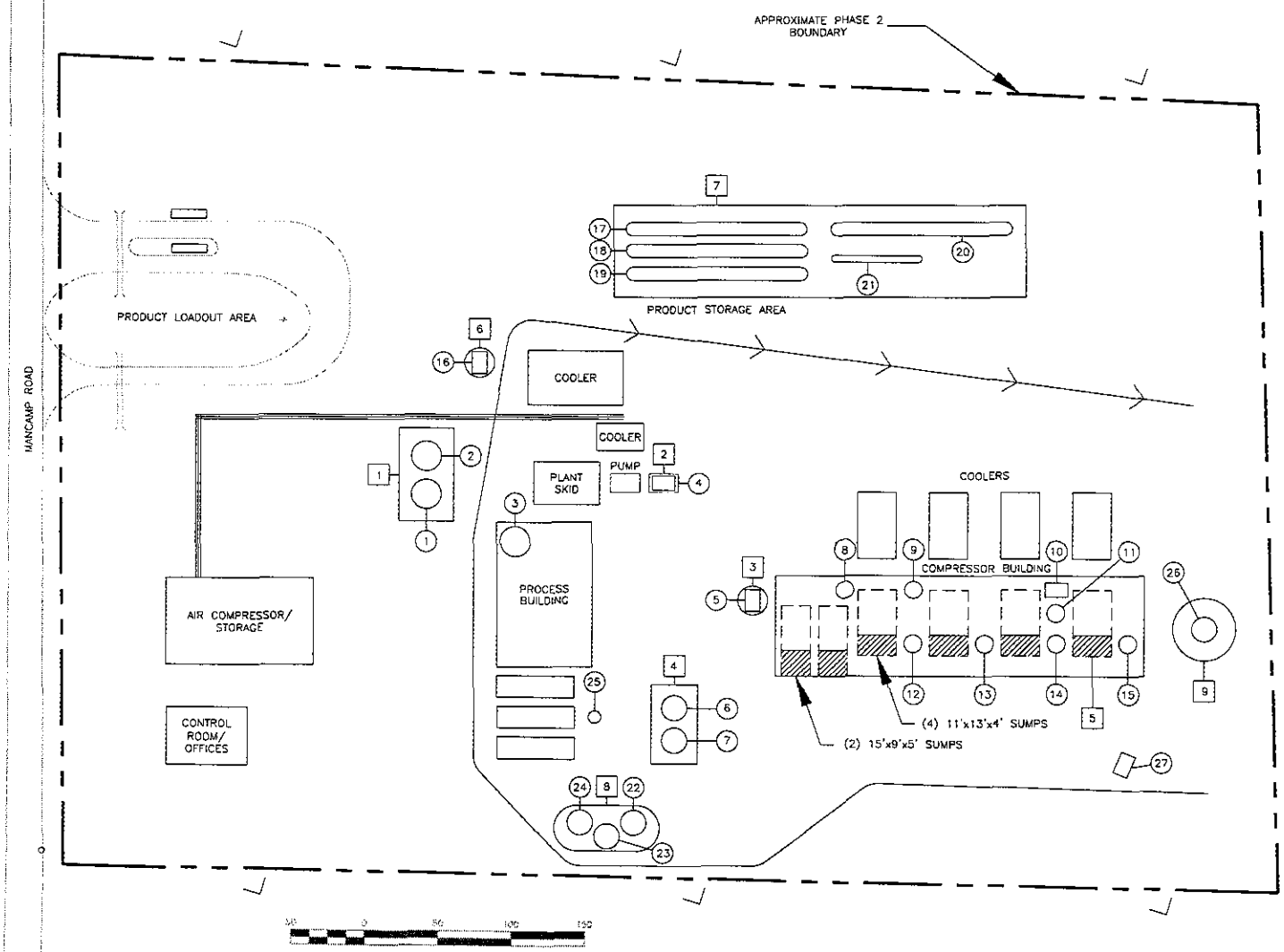


LEGEND

- > = ESTIMATED DIRECTION OF DRAINAGE FLOW
- (1) = STORAGE TANK REFERENCE NUMBER
- [1] = SECONDARY CONTAINMENT REFERENCE NUMBER

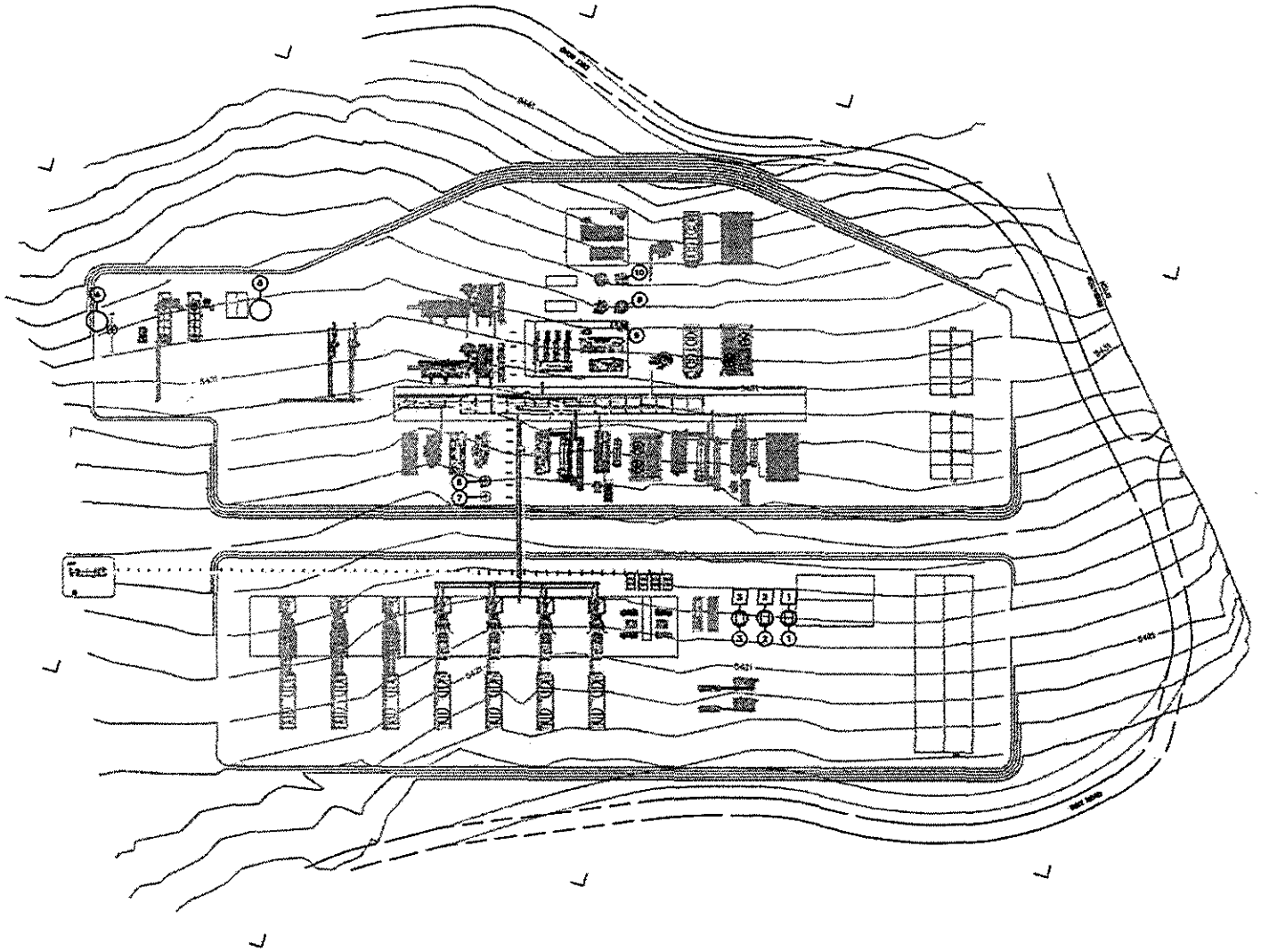
TRUE NORTH

PHASE 2 NORTH

FIGURE 3
SITE MAP - PHASE 2
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	3/1/07
REVISION NUMBER:	002
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02071
SCALE: AS NOTED	

CORDILLERAN



LEGEND

- > = ESTIMATED DIRECTION OF DRAINAGE FLOW
- (1) = STORAGE TANK REFERENCE NUMBER
- [1] = SECONDARY CONTAINMENT REFERENCE NUMBER

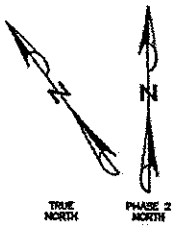


FIGURE 4
SITE MAP – PHASE 3
WILLIAMS PRODUCTION RMT COMPANY
PARACHUTE CREEK GAS PLANT
GARFIELD COUNTY, COLORADO

REVISION DATE:	1/31/07
REVISION NUMBER:	001
DRAWN BY:	DMP
APPROVED BY:	DMP
PROJECT #	EG02071
SCALE:	NTS

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Appendix A

Certification of the Applicability of the Substantial Harm Criteria

Certification of the Applicability of the Substantial Harm Criteria

Facility Name: Parachute Creek Gas Plant

Facility Location: The Parachute Creek Gas Plant is located in the northeast quarter of the northeast quarter of Section 33 Township 6 South, Range 96 West in Garfield County, Colorado. See **Figure 1** for detailed location information.

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

   YES_____ NO ___X___

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?

   YES_____ NO ___X___

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix {Appendix C to 40 CFR 112} or a comparable formula[1]) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA"s "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" and the applicable Area Contingency Plan.

   YES_____ NO ___X___

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix {Appendix C to 40 CFR 112} or a comparable formula[1]) such that a discharge from the facility would shut down a public drinking water intake[2]?

   YES_____ NO ___X___

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

   YES_____ NO ___X___

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

_____ _____

Signature Title

_____ _____

Name (please type or print) Date

[1] If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

[2] For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

Appendix B

Five-Year Review Documentation

Five-Year Review Documentation

In accordance with §112.5(b), this SPCC plan been reviewed to determine if more effective prevention and control technology is available to significantly reduce the likelihood of a discharge.

Pursuant to §112.5(b) and by means of this certification, I attest that I have completed a review and evaluation of this SPCC plan for Williams, and as a result

_____Will

_____Will Not

amend the plan. A Professional Engineer has reviewed technical amendments to the plan and certified the revised document.

_____ _____

Signature, Authorized Facility Representative Date

_____

Name (Printed)

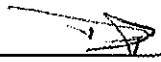
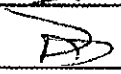
_____

Title

Five-Year Review Documentation

Original Date of Plan: August 2003

In an effort to document the five-year review process, the facility manager or his representative shall complete the information below:

Review Dates	Representative Or designee Name and Title	Signature	Plan Amended (Yes or No)
2/04	Dion Plsek, P.E.		Yes
3/05	Dion Plsek, P.E.		Yes
11/05	Dion Plsek, P.E.		Yes
10/13/06	Dion Plsek, P.E.		Yes
1/31/07	Dion Plsek, P.E.		Yes
3/1/07	Dion Plsek, P.E.		Yes

SPCC Plan Amendment Log

Date of Amendment	General Description of Change Made	Page Numbers of Changes Made	Name of Certifying PE	Name of Management Reviewer
2/04	Plan revised to match plant as-built conditions	Various	Dion Plsek, P.E.	Dave Cesark
3/05	Plan revised to meet new SPCC rule requirements and changes in storage equipment at plant.	Various	Dion Plsek, P.E.	Jerry Alberts
11/05	Document revised to include Phase 2 plant area.	Various	Dion Plsek, P.E.	Dave Cesark
10/13/06	Document revised to reflect changes in Phase 2 area storage structures and to include text and format changes.	Various	Dion Plsek, P.E.	Michael Gardner
1/31/07	Document revised to reflect changes in Phases 1 and 2 storage structures and to include preliminary Phase 3 storage information.	Various	Dion Plsek, P.E.	Michael Gardner
3/1/07	Update due to 2/07 site inspection. Updated SPCC compliance dates and Williams contact information. Changes made to storage tank and secondary containment information.	Cover, Pgs. 4, 5, 8, 11, 12, 15, Figs 2 & 3, App. C and App. D	Dion Plsek, P.E.	Michael Gardner

Appendix C

Oil Spill Response Procedures

Oil Spill Response Procedures

FACILITY NAME: PARACHUTE CREEK GAS PLANT

FACILITY ADDRESS: NE NE, SECTION 33 IN TOWNSHIP 6 SOUTH, RANGE 96 WEST IN GARFIELD COUNTY, COLORADO.

NEAR PARACHUTE, COLORADO

REFERENCE: SECTION 6.12 OF SPCC PLAN

WRITTEN PROCEDURES APPROVED BY:

Signature	Title
Name (please type or print)	Date

Oil Spill Response Procedures

1. Response Management Structure

The Spill Coordinator and Alternate Spill Coordinator(s) are responsible for implementing response procedures in the event of an oil spill or discharge emergency. These personnel have the authority to commit the resources necessary to carry out a response. However, all operating personnel at the Parachute Creek Gas Plant receive training to familiarize themselves with all aspects of the SPCC Plan, facility operations, the location and characteristics of materials handled at the facility, and the location of all records within the facility; and are responsible for proper implementation of response procedures should the Spill Coordinator or Alternate Spill Coordinator(s) be unavailable.

2. Initial Response

Releases at the Parachute Creek Gas Plant will be discovered through observations made during the course of normal work activities, inspections of work areas and equipment, monitoring devices, or by chance. Discovering a release is the first step in initiating a response. Upon discovery, the individual discovering a release should immediately upon discovery:

1. Assess the basic situation.
2. Stop the source of the release if safely possible using available resources (including spill kits).
3. Restrict ignition sources if the material is flammable.
4. Secure the area as off limits.
5. In the event that the incident poses an immediate threat of fire, explosion, or other impact to safety, health, or the environment, contact the local fire department at 911. DO NOT HANG UP after completing the report, let the dispatcher hang up first.
6. Report the release to the Spill Coordinator or an Alternate Spill Coordinator (see attached Oil Spill Incident Notification Phone Numbers).
7. The Spill Coordinator (or alternate) will determine whether the spill incident warrants evacuation of the facility. If so, the procedures outlined in the facility Emergency Action Plan will be followed.
8. The Spill Coordinator (or alternate) will determine whether the spill incident constitutes a discharge as defined in §112.1(b) of the SPCC regulations (see Section 3, below) and will notify appropriate federal, state, and local agencies of the spill/release incident if warranted.
9. If the spill involves a minor volume of oil, it can be cleaned up by facility personnel provided that 1) they are OSHA trained and have received their current refresher training; 2) appropriate material safety data sheets (MSDS sheets) are available for the material spilled; and 3) appropriate personal protective equipment (PPE) is available.

10. If the spill involves a significant volume of oil, or any of the three criteria listed in (9) above are not met, it should be cleaned up by a properly certified outside contractor (see attached Oil Spill Incident Notification Phone Numbers).

3. Oil Spill Emergency Reporting

If the release constitutes a *discharge* as defined in §112.1(b) of the SPCC regulations, it will be considered an Oil Spill Emergency. **A release of oil is considered a *discharge* under this Plan only if: the release is into or upon the navigable waters of the United States, adjoining shorelines, or waters contiguous with navigable waters of the United States.** This is apparent if a release impacts surface water quality by causing a film, sheen, or discoloration of the water surface, or upon water or adjoining shorelines, or causes a sludge or emulsion to be deposited beneath the surface of the adjoining shorelines. Impacts to groundwater also apply if the groundwater is contiguous with navigable waters of the United States (i.e., groundwater discharges to/contributes to the total volume of a surface water body that is itself contiguous with navigable waters of the United States).

In summary, if a release directly affects surface water or groundwater at the facility, it must be considered an Oil Spill Emergency. Federal and local authorities to be notified in the event of an Oil Spill Emergency are outlined below.

State of Colorado

In Colorado, condensate and E&P wastes are to be reported within 24 hours if the spill has entered waters of the state (any surface or groundwater) or entered navigable waters (any surface water) in sufficient quantities to cause a sheen on the water or stain on the shore. Spills less than 5 barrels which can be immediately contained and cleaned up do not need to be reported. Spills greater than 20 barrels must be reported with 24 hours.

All spills and releases of exploration and production waste or produced fluid exceeding five barrels, including those contained within unlined berms, shall be reported in writing on the Colorado Oil and Gas Conservation Commission (COGCC) Spill/Release Report Form 19 within 10 days of discovery of the spill. In addition, spills or releases that exceed twenty barrels of exploration and production waste or produced fluid shall be verbally reported to the COGCC within 24 hours of discovery. Spills or releases of any size that impact or threaten to impact any waters of the state, residence or occupied structure, livestock or public byway, shall be verbally reported to the COGCC as soon as practicable after discovery. See COGCC Rule 906 for more information. If the spill may reach waters of the State (which include surface water, ground water and dry gullies or storm sewers leading to surface water), it must also be reported immediately to the Colorado Department of Public Health and Environment.

Refined petroleum releases must be reported if they have entered navigable waters or if the quantity release exceeds 25 gallons.

Spills of hazardous materials must be reported if they impact navigable waters or their volume exceeds the reportable quantities in Table E1.

In general, verbal or telephone reports are to be made within 24 hours. The District Manager or Environmental Manager will notify regulatory agencies as appropriate. As a practical matter, an evaluation of the specifics of each spill and a determination of reporting requirements will be made. If there is any question about reporting requirements, Williams will over-report rather than under-report.

Written, follow up reports are to be sent within 10 days to:

- Colorado Oil and Gas Conservation Commission
  1120 Lincoln # 801
  Denver, Colorado 80203
  (Use COGCC Spill/Release Form)
- Bureau of Land Management - File an "Undesirable Event Form" with:
  Glenwood Springs Resource Area Office
  50629 Highways 6 and 24
  P.O. Box 1009
  Glenwood Springs, CO 81602

If the Local Emergency Planning Commission (LEPC) was notified of the spill (in the event of a hazardous substance release) a report should also be sent to:

Dale Hancock
Garfield County LEPC
109 8th Street, Suite 300
Glenwood Springs, Colorado 81601

United States Environmental Protection Agency (EPA)

An oil spill is reportable to the EPA if any of the following criteria are met:

A) Is the spill to navigable waters or adjoining shorelines?
B) Could Water Quality Standards be violated?
C) Could the spill cause a film, "sheen", or discoloration?
D) Could the spill cause a sludge or emulsion?
E) Do any of the reporting exemptions apply?
Exemptions include 1) Properly functioning vessel engines not deemed harmful, 2) Research and Development Releases (approved on a case by case basis), 3) NPDES Permitted Releases, and 4) Discharges Permitted Under the International Convention for the Prevention of Pollution from Ships (MARPOL)

If the answer to any question A through D above is "yes" and none of the exemptions apply then the release is reportable to the EPA.
To report an oil spill or hazardous substance release, call

- **the National Response Center: (800) 424-8802**

For information on EPA's Oil Spill Program, call the Oil Spill Program Information Line at (800) 424-9346.

- Region 8 EPA (CO, MT, ND, SD, UT, WY)
  999 18th Street, Suite 500
  Denver, Colorado 80202-2466 http://www.epa.gov./region08/
  Telephone: (303) 312-6312 email: r8eisc@epa.gov
  Fax: (303) 312-6339
  Toll Free: (800) 227-8917

4. Follow-up Activities

After the initial response, reporting, and notification associated with a spill incident, the Spill Coordinator (or alternate) will prepare a written report which includes following:

1. Time and date of the incident;
2. Source and exact location of the spill;
3. Material involved;
4. Cause of the incident;
5. Estimated spill volume;
6. Names of any waterways involved;
7. Description of all media impacted by the spill;
8. Description of damages or injuries caused by the spill;
9. Actions taken to stop, remove, and mitigate the effects of the material spilled
10. Names of individuals and organizations contacted (time, day, who received call, who called from Williams, and pertinent notes).
11. Who reported to the scene from Federal, State, and Local agencies (time, day, etc).

In addition, whenever more than 1,000-gallons of oil are discharged in a single incident or more than 42-gallons of oil have been discharged in each of two incidents over a 12-month period, Willliams will submit a report to the United States Environmental Protection Agency (USEPA) Regional Administrator (RA) as outlined in Section 5.2 of the SPCC Plan.

5. Sustained Actions

Where prolonged mitigation and recovery actions are required in response to a spill or release, the Spill Coordinator (or alternate) will manage the activities with any or all of the following, as warranted:

1. An outside contractor.
2. An environmental/engineering consultant.
3. Any outside vendor responsible for the incident.
4. The appropriate local, state, and federal agencies.

Most release incidents at the Parachute Creek Gas Plant are expected to be handled without implementing sustained actions.

Oil Spill Response Procedures

Notification Phone Numbers

EPA 24-Hour Spill Notification Number		303.293.1788
Department of Transportation National Response Center		800.424.8802
Colorado Department of Public Health & Environment (CDPHE)		303.692.3033
CDPHE 24-Hour Spill Hotline		877.518.5608
Colorado Oil & Gas Conservation Commission (COGCC)		303.894.2100
COGCC 24-Hour Hotline		303.860.1435
Colorado Division of Labor, Oil Inspection Section		303.620.4300
Colorado PUC Safety and Enforcement Section		800.888.0170
Colorado State Patrol Hazmat Service		970.242.7283
Hospitals (St. Mary's Hospital – Grand Junction)		970.244.2273
(Clagett Memorial – Rifle)		970.625.1510
*Garfield County Sheriff		970.625.1899
*Rifle Fire Protection District		970.625.1220
Parachute Fire Department		970.285.7630
U.S. Dept. of Interior, Bureau of Land Management, White River District Office		970.244.3000
Williams Production RMT Company Corporate Office		303.573.3900
Williams Production RMT Company Parachute Field Office		970.285.9377
Steven Soychak, District Manager	Office:	970.285.9377
	Mobile:	970.216.0922
Brad Moss, Production & Pipeline Superintendent	Office:	970.285.9377
	Mobile:	970.250.3683
Dave Cesark, Principal Environmental Specialist	Office:	970.683.2281
	Mobile:	970.260.8309
Rob Bleil, Senior Regulatory Specialist	Office:	970.263.2704
	Mobile:	970.210.2050
Michael Gardner, Senior Environmental Specialist	Office:	970.263.2760
	Mobile:	970.640.1855

* = this is a non-emergency number. Emergency calls should dial 911.

Spill/Release Information Form
Parachute Creek Gas Plant

Exact name, address, and location of the facility:

Date and time of the discharge:

Name, title and phone number of the person reporting the spill, the responsible party and the contact person:

Source of the discharge:

Type or description of material discharged:

Estimated total quantity of the discharge:

Estimated total quantity discharged as described in §112.1(b):

Names of individuals and/or organizations that have been contacted:

Bodies of water involved, the extent of actual and potential pollution or threat to surface water:

A chronology of all occurred events including: a complete description of circumstances causing the release or spill, actions taken and explanations:

A description of all impacted media:

An description of all damages or injuries caused by the discharge:

Actions being used to stop, remove, or mitigate the effects of the discharge, including disposal and treatment:

Other appropriate information for the particular spill or release:

Appendix D

Secondary Containment Information

SECONDARY CONTAINMENT INFORMATION
PARACHUTE CREEK GAS PLANT
WILLIAMS PRODUTION RMT COMPANY

PHASE 1												
				CONTAINMENT DIMENSIONS								
ID	Tank Contents/Description	Tank Volume (BBL)	Containment Number	Top Width (W1) (FT)	Bottom Width (W2) (FT)	Top Length (L1) (FT)	Bottom Length (L2) (FT)	Minimum Height (H) (FT)	Overall Secondary Containment Capacity (T) (FT^3)	(GAL)	(BBL)	(%)
1	Lube oil	12	1	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
2	Glycol	12	2	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
3	Used oil	80	3	18.0	14.0	15.0	11.0	2.5	523	3,915	93	117
4	Raw water	210	4	80.0	74.0	33.0	27.0	2.0	4,623	34,586	823	392
5	Raw water	210	4	80.0	74.0	33.0	27.0	2.0	4,623	34,586	823	392
6	Condensate	300	4	80.0	74.0	33.0	27.0	2.0	4,623	34,586	823	274
7	NGL	1,071	5	104.0	94.0	60.0	50.0	3.0	16,356	122,356	2,913	272
8	NGL	1,071	5	104.0	94.0	60.0	50.0	3.0	16,356	122,356	2,913	272
9	Amine	40	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
10	Amine	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
11	Amine	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
12	Glycol	70	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	358
13	Combustor Skid Dr. Tank	80	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	313
14	Lube oil	12	7	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
15	Soap	12	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	2,089
16	Degreaser	12	6	65.0	60.0	25.0	20.0	1.0	1,407	10,527	251	2,089
17	Hot oil tank	70	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
18	Hot oil heater	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
19	Hot oil heater	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
20	Lube oil	24	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
21	Lube oil	24	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
22	Glycol	12	8	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
23	Lube oil	12	9	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
24	Lube oil	12	10	---[2]	---[2]	---[2]	---[2]	---[2]	280	2,095	50	416
25	Lube oil	12	11	---[2]	---[2]	---[2]	---[2]	---[2]	280	2,095	50	416
26	Ethylene Glycol	12	12	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
27	Unleaded Gasoline	12	13	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
28	Off-Road Diesel	12	14	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
29	Sump Tank	100	15	25.0	19.0	24.0	18.0	3.0	1,395	10,436	248	248
30	CO2 Vent Tank	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
31	Heater Sump Tank	16	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
32	CO2 Scrubber Tank	24	16	18.0	13.0	16.0	11.0	2.0	423	3,162	75	314
33	CO2 Vent Tank	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
34	Produced Water	400	17	24.0	24.0	74.0	74.0	2.5	4,440	33,216	791	198
35	Produced Water	400	17	24.0	24.0	74.0	74.0	2.5	4,440	33,216	791	198
36	Produced Water	400	17	24.0	24.0	74.0	74.0	2.5	4,440	33,216	791	198
37	Propane Vessel	36	18	12.0	8.0	36.0	32.0	1.0	340	2,545	61	168
38	Free Drain Tank	80	19	20.0	17.0	23.0	20.0	1.0	398	2,981	71	89
39	Glycol	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0

Calculation to compensate for multiple tanks in containment:

Largest tank dimensions		Adjusted Containment Capacity			
Volume (BBL)	Footprint area (FT^2)	(GAL)	(BBL)	(%)	
300	339	29,514	703	234	<< For containment #4
100	113	9,682	231	231	<< For containment #6
400	113	31,102	741	185	<< For containment #17

Notes:
Total Containment Capacity (T) = (H/3)x[(W1xL1)+(W2xL2)+SQRT(W1xL1xW2xL2)]
W1 = Containment width at top.
W2 = Containment width at bottom.
L1 = Containment length at top.
L2 = Containment length at bottom.
H = Containment Height

BBL = Barrel(s)
GAL = Gallon(s)
FT^3 = Cubic Feet
FT = Feet
1 FT^3 = 7.481 Gallons
1 Barrel = 42 Gallons
1 Barrel = 5.6 Cubic Feet

1 = Circular stock tank (2' tall x 8' diameter) used for secondary containment.
2 = Sumps in compressor building floor (8' x 14' x 2.5' deep) used for secondary containment

SECONDARY CONTAINMENT INFORMATION
PARACHUTE CREEK GAS PLANT
WILLIAMS PRODUTION RMT COMPANY

PHASE 2												
				CONTAINMENT DIMENSIONS					Overall			
ID	Tank Contents/Description	Tank Volume (BBL)	Containment Number	Top Width (W1) (FT)	Bottom Width (W2) (FT)	Top Length (L1) (FT)	Bottom Length (L2) (FT)	Minimum Height (H) (FT)	Secondary Containment Capacity (T) (FT³)	(GAL)	(BBL)	(%)
1	Deionized Water	300	1	24.0	18.0	44.0	38.0	3.0	2,590	19,375	461	154
2	Amine	300	1	24.0	18.0	44.0	38.0	3.0	2,590	19,375	461	154
3	Amine Drain Tank	200	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
4	Lube oil	12	2	7.0	7.0	6.0	6.0	2.0	84	628	15	125
5	Lube oil	12	3	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
6	Therminol 50 (HMO)	80	4	22.0	18.0	25.0	21.0	1.5	692	5,177	123	154
7	Ethylene Glycol	80	4	22.0	18.0	25.0	21.0	1.5	692	5,177	123	154
8	Glycol	24	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	425
9	Glycol	25	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	408
10	Glycol	8	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	1,323
11	Glycol	7	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	1,435
12	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
13	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
14	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
15	Lube oil	12	5	11.0	11.0	13.0	13.0	4.0	572	4,279	102	849
16	Methanol	12	6	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
17	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
18	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
19	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
20	NGL	1,071	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	338
21	Propane	286	7	49.0	43.0	180.0	173.0	2.5	20,299	151,859	3,616	1,266
22	TEG	90	8	---[2]	---[2]	---[2]	---[2]	---[2]	1,355	10,135	241	268
23	Compressor Oil	210	8	---[2]	---[2]	---[2]	---[2]	---[2]	1,355	10,135	241	115
24	Glycol	90	8	---[2]	---[2]	---[2]	---[2]	---[2]	1,355	10,135	241	268
25	Glycol	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
26	Used Oil	80	---	---[3]	---[3]	---[3]	---[3]	1.7	524	3,917	93	117
27	Sump Tank	16	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0

Calculation to compensate for multiple tanks in containment:

Largest tank dimensions		Adjusted Containment Capacity			
Volume (BBL)	Footprint area (FT²)	(GAL)	(BBL)	(%)	
300	113	16,839	401	134	<< For containment #1
80	71	4,380	104	130	<< For containment #4
210	79	2,802	67	32	<< For containment #8

Notes:
Total Containment Capacity (T) = (H/3)x[(W1xL1)+(W2xL2)+SQRT(W1xL1xW2xL2)]
W1 = Containment width at top.
W2 = Containment width at bottom.
L1 = Containment length at top.
L2 = Containment length at bottom.
H = Containment Height

BBL = Barrel(s)
GAL = Gallon(s)
FT³ = Cubic Feet
FT = Feet
1 FT³ = 7.481 Gallons
1 Barrel = 42 Gallons
1 Barrel = 5.6 Cubic Feet

1 = Circular stock tank (2' tall x 8' diameter) used for secondary containment.
2 = Oblong steel vault containment.
3 = Circular steel vault (1.7' tall x 20' diameter) used for secondary containment.

SECONDARY CONTAINMENT INFORMATION
PARACHUTE CREEK GAS PLANT
WILLIAMS PRODUTION RMT COMPANY

PHASE 3												
				CONTAINMENT DIMENSIONS					Overall Secondary Containment Capacity (T)			
ID	Tank Contents/Description	Tank Volume (BBL)	Containment Number	Top Width (W1) (FT)	Bottom Width (W2) (FT)	Top Length (L1) (FT)	Bottom Length (L2) (FT)	Minimum Height (H) (FT)	(FT^3)	(GAL)	(BBL)	(%)
1	Diesel Fuel	12	1	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
2	Diesel Fuel	12	2	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
3	Unleaded Gasoline	7.1	3	---[1]	---[1]	---[1]	---[1]	---[1]	101	756	18	150
4	CO2 Vent Tank	100	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
5	Flare Knockout Vessel?	65	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
6	Unk.	70	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
7	Unk.	70	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
8	Amine	90	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
9	Amine	300	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0
10	Amine	300	---	0.0	0.0	0.0	0.0	0.0	0	0	0	0

Notes:

Total Containment Capacity (T) = (H/3)x[(W1xL1)+(W2xL2)+SQRT(W1xL1xW2xL2)]

W1 = Containment width at top.

W2 = Containment width at bottom.

L1 = Containment length at top.

L2 = Containment length at bottom.

H = Containment Height

BBL = Barrel(s)

GAL = Gallon(s)

FT^3 = Cubic Feet

FT = Feet

1 FT^3 = 7.481 Gallons

1 Barrel = 42 Gallons

1 Barrel = 5.6 Cubic Feet

1 = Circular stock tank (2' tall x 8' diameter) used for secondary containment.

2 = Sumps in compressor building floor (8' x 14' x 2.5' deep) used for secondary containment

Appendix E

Inspection Procedures and Records

Inspection Procedures and Records

FACILITY NAME: PARACHUTE CREEK GAS PLANT

FACILITY ADDRESS: NE NE, SECTION 33 IN TOWNSHIP 6 SOUTH, RANGE 96 WEST IN GARFIELD COUNTY, COLORADO.

NEAR PARACHUTE, COLORADO

REFERENCE: SECTION 6.16 OF SPCC PLAN

WRITTEN PROCEDURES APPROVED BY:

Signature	Title
Name (please type or print)	Date

Inspection Procedures and Records

1. Responsibilities

These procedures establish the requirements for periodic inspections and tests for the oil storage vessels and oil-filled equipment listed at the Parachute Creek Gas Plant, to minimize the risk of a spill incident. The Principal Environmental Specialist is responsible for the implementation of these procedures. Specifically, the Principal Environmental Specialist is responsible for:

- Conducting the inspections;
- Producing documentation for deficiencies found during the inspections; and
- Making certain that remediation or repair work is properly prioritized and completed in a timely manner.

The Principal Environmental Specialist may designate another personnel member to complete the inspections. Designated personnel will have the authority to commit the resources necessary to carry out a response, if warranted. Operating personnel at the Parachute Creek Gas Plant receive training to familiarize themselves with all aspects of the SPCC Plan, facility operations, the location and characteristics of materials handled at the facility, and the location of pertinent records within the facility.

2. Procedures

The Principal Environmental Specialist (or designee) will conduct a monthly visual deficiency inspection of the oil storage vessels and oil-filled equipment identified in Section 6.5 of the SPCC Plan. The inspections will be documented using the attached inspection forms. The monthly inspection includes a visual examination of exterior surfaces for leaks and other deficiencies of the vessel, supports, connected piping and valves and secondary containment. It also includes visual inspection and monitoring of any leak detection system or other monitoring or warning systems (e.g., level indication/alarm or interstitial space monitoring). If any inspection reveals a leak or equipment deficiency outside of normal operating conditions, corrective action must be taken promptly to eliminate the leak or deficiency. Deficiencies noted during the inspection are recorded as a work order. The inspector will complete the following:

1. Visually inspect exterior surfaces of storage vessels and oil-filled equipment, along with associated pipes, valves and other appurtenances and identify any leaks, cracks, area of wear, external wall thinning, swelling, excessive corrosion or mechanical deficiency.
2. Visually inspect vessel/equipment supports and containment structures for excessive settlement, apparent structural weakness, cracks or other deficiency that would allow the secondary containment to leak.

3. Inspect and monitor existing leak detection systems (for example, observation ports on double-bottom tanks), cathodic protection equipment and other warning systems such as alarms and level gauges.

If, during the monthly inspection, the inspector observes a spill of oil from any of the equipment the inspector shall immediately initiate the oil spill response procedures outlined in **Appendix C** of this SPCC Plan.

Inspection Procedures and Records
Secondary Containment Drainage Log

Date and Time of Drainage	Containment Area Drained (ID# or description)	Appearance (visual, odor, etc.) Note: Do not discharge water containing any contaminant and/or free oil or an oil sheen.	Approximate Quantity Removed (Gals)	Method of Removal and Disposal

Appendix F

Training Procedures and Records

Training Procedures and Records
Spill Prevention Training Outline

FACILITY NAME: PARACHUTE CREEK GAS PLANT

FACILITY ADDRESS: NE NE, SECTION 33 IN TOWNSHIP 6 SOUTH, RANGE 96 WEST IN GARFIELD COUNTY, COLORADO.

NEAR PARACHUTE, COLORADO

REFERENCE: SECTION 6.17 OF SPCC PLAN

WRITTEN PROCEDURES APPROVED BY:

Signature	Title
Name (please type or print)	Date

Training Procedures and Records
Topics to be Covered in SPCC Training

1. Introduction/Training Roster

2. Facility Layout

3. General Facility Operations

4. Location of Oil Storage Areas
    a. Above Ground Storage Tanks
    b. Compressors/Separators/Scrubbers
    c. Lubricating Oil Containers

5. Facility SPCC Plan
    a. Physical Location of Plan
    b. Introduce/Review Contents of SPCC Plan
        i. General SPCC Requirements (§112.7)
        ii. Specific Requirements for Onshore Production Facilities (§112.9)

6. Operation of Oil-Filled Equipment and Containment Equipment
    a. Above Ground Storage Tanks
        i. Fill Procedures
    b. Compressors/Separators/Scrubbers
        i. Maintenance Procedures
    c. Lubricating Oil Containers
        i. Handling Procedures

7. Oil Spill/Discharge Response Procedures
    a. Appendix C of SPCC Plan

8. Known Oil Spill/Discharge Incidents at Facility in Past 12 Months

9. Applicable Rules and Regulations
    a. Federal Regulations
        i. 40 CFR 110: Discharge of Oil
        ii. 40 CFR 112: Oil Pollution Prevention
    b. State Regulations (CDPHE)
    c. Local (Garfield County LEPC)

Training Procedures and Records
Oil Discharge Prevention Briefings (Training) Roster

INSTRUCTOR:	DATE:

EMPLOYEE	TITLE	SIGNATURE

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE DRG JOB 15116 5/9/2007
DISTURBANCE ACREAGE FOR LAND OWNERS IN GARFIELD COUNTY

					EWS LENGTHS			EWS AREAS							
		LENGTH	75' ROW AREA		80 FT.	100FT	OTHER	80 FT.		100FT		OTHER		TOTAL DISTURBANCE	
SHEET No.	LAND OWNER	(FEET)	(SQ. FT.)	(ACRES)	(FEET)	(FEET)	(FEET)	(SQ. FT.)	(ACRES)	(SQ. FT.)	(ACRES)	(SQ. FT.)	(ACRES)	(SQ. FT.)	(ACRES)
1	WILLIAMS PRODUCTION RMT COMPANY	4615.3	346148	7.96	2417	0	100	72510	1.67	0	0.00	10500	0.24	429158	9.87
	PUCKETT LAND COMPANY	1709.8	128235	2.95	260	0	0	7800	0.18	0	0.00	0	0.00	136035	3.13
	CHEVRON USA INC.	7674.9	575618	13.24	1875	0	0	56250	1.29	0	0.00	0	0.00	631868	14.53
2	CHEVRON USA INC.	13200	990000	22.77	2186	1333	200	65580	1.51	66650	1.53	5000	0.12	1060580	24.39
3	CHEVRON USA INC.	7666.6	574995	13.22	313	5396	0	9390	0.22	269800	6.21	0	0.00	584385	13.44
	ENCANA OIL & GAS (USA) INC.	3107.5	233063	5.36	1261	0	799	37830	0.87	0	0.00	102663	2.36	373556	8.59

LAND OWNER	TOTAL AREA	
	(SQ. FT)	(ACRES)
WILLIAMS PRODUCTION COMPANY	429158	9.87
PUCKETT LAND COMPANY	136035	3.13
CHEVRON USA INC.	2276833	52.37
ENCANA OIL & GAS (USA) INC.	373556	8.59
TOTAL	3215581	73.96

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 11- Sensitive Area Survey 9.07.04 (10)

May 29, 2007

Mr. Fred Jarman
Director
Garfield County Building and
Planning Department
108 8th Street, 4th floor
Glenwood Springs, CO 81601

Dear Mr. Jarman,

Please find below relevant sections of the Garfield County Zoning Resolution in regards to the Parachute Greasewood Express Pipeline.

9.07.04 (10) "Sensitive Area Survey: List the types and areas of concern along the pipeline right-of-way, such as: sensitive plant populations, cultural, archeological, paleontological resources and wetlands identified during preconstruction environmental surveys, if applicable."

9.07.06 (3) a. notes "Pipeline operations shall be located in a manner to minimize their visual impact and disturbance of the land surface. a. The location of right-of-way shall be away from prominent natural features and identified environmental resources."

9.07.06 (5) "In no case shall an operator engage in activities which threaten an endangered species."

Williams Field Services Company, LLC has contracted with a respected environmental science firm, West Water Engineering from Grand Junction, CO.

West Water Engineering has prepared a review and analysis of the proposed right-of-way alignment in regards to identification of sensitive and rare plant species and federally listed threatened and endangered birds.

1. There were no sensitive and rare plant species identified within the proposed pipeline right-of-way.

2. There were no federally listed threatened and endangered birds or nests identified within the proposed pipeline right-of-way.

Williams Field Services Company, LLC will comply with all applicable state and federal laws during construction of the pipeline in regards to sensitive and rare plant species and federally listed threatened and endangered birds.

Cultural, archeological, paleontological resources

Please note that we have designed the new pipeline largely within existing disturbed right-of-way areas, thus, there would not be any cultural, archeological or paleontological resources within this proposed right-of-way. The attached WestWater Engineering survey bears this fact out.

Wetlands

Please see Tab 7- Regulatory Permit Requirements. Wetland disturbance is permitted by the U.S. Army Corp of Engineers via the Nationwide Permit 12 for utility activities noted.

Issues Regarding Studies on Private Property

An area of concern is the preparation of the materials noted above on private property.

As noted in Tab 2 and previous areas within the application, the proposed Parachute Greasewood Express Pipeline is all located on private property.

We believe that the studies required by Garfield County regarding sensitive and rare plant species, federally listed threatened and endangered birds and cultural, archeological and paleontological resources on private property can, and will, cause issues with private property owners.

The studies noted are typically required for activities that occur on public property such as the U.S. Bureau of Land Management.

These studies are typically not welcome and are many times not allowed on private property.

Williams Field Services Company, LLC has been proactive in this pipeline process by contracting West Water Engineering to review these issues and to guide Williams Field Services Company, LLC in the planning and construction of the pipeline.

We have included a copy of the West Water Engineering report to this permit application, but do so in protest.

We will follow the recommendations of the study and want to be respectful to both our private property owners and to the Garfield County permitting process.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

Parachute Express Pipeline
Garfield County Sensitive Areas Report
June 2007

Prepared For
Phil Vaughan Construction Management, Inc.

Prepared By
WestWater Engineering
2516 Foresight Circle, #1
Grand Junction, CO 81505-1022
June 2007

Introduction

In accordance with the request of Phil Vaughan Construction Management, Inc., WestWater Engineering (WWE) biologists have performed a survey of sensitive areas for the proposed Parachute Express pipeline in Garfield County, Colorado. The northern end of the pipeline is in the NE ¼ of Section 36, T5S, R96W, about 9 miles NNE of the town of Parachute. The pipeline runs a short distance to the southwest and then crosses Parachute Creek (Fig. 1). It continues south, following a dirt road that lies just to the west of Parachute Creek (Cover photo - mid-portion of the Parachute Express Pipeline route looking towards the south. The route runs to the left (east) of the dirt road. Starky Compressor Station is in the midground).

Figure 1. Parachute Creek crossing, looking east.

The southern terminus is in the NW ¼ of Section 33, T6S, R96W, about 3.8 miles northwest of Parachute, at the proposed Parachute NGL Storage Facility. Total length of the proposed pipeline is about 7 miles.

Landscape Setting

Parachute Creek drains a portion of the southern Roan Plateau and flows into the Colorado River. The pipeline route, for the most part, runs to the west of Parachute Creek, between it and the steep canyon sideslopes.

The northern end of the pipeline route crosses unnamed torrifluvent soils in the floodplain of Parachute Creek. As expected, these floodplain soils vary widely in texture. As the pipeline route continues south down the canyon it partially follows an old pipeline route (Fig 2) and crosses valley slopes comprised of Nihill soil: channery loam to channery sandy loam derived from Green River shale and sandstone. The southern end of the pipeline route crosses a short section of alluvial fans and terraces consisting of Arvada soil: deep alluvium with textures of loam to silty clay loam. Elevations along the pipeline route range from 5,362 feet to 5,982 feet above sea level.

Figure 2. Pipeline follows established route.

Figure 3. Typical riparian vegetation.

Plants commonly seen in the survey area are listed in Appendix A. The Parachute Creek riparian zone supports boxelder (*Acer negundo*), narrowleaf cottonwood, (*Populus angustifolia*), skunkbush (*Rhus trilobata*), and associated grasses and forbs (Fig. 3). Vegetation on the benches and sideslopes consist of Utah juniper (*Juniperus utahensis*), big sagebrush (*Artemesia tridentata* spp.), greasewood (*Sarcobatus vermiculatus*), and scattered forbs and grasses. Weeds are common in the Parachute Creek drainage especially along the pipeline route, riparian areas, and nearby abandoned fields.

Survey Methods

WestWater biologists surveyed the pipeline route May 20, 21, and 23, 2007. The primary focus was to identify raptor nest sites, threatened, endangered, and sensitive plant species (TESS) plants, and Army Corps of Engineers (COE) jurisdictional waters.

Grand River Institute (GRI), cultural resources consultant, investigated cultural resources along the alignment via review of known records with the State of Colorado State Historical Preservation Office (SHPO).

Plants were surveyed a minimum of 150 feet on either side of the pipeline route while raptor surveys extended out to a minimum of one-quarter mile. Binoculars and spotting scopes were utilized as needed for the raptor study. Noteworthy findings were located with GPS (NAD 83), plotted on a map, and are documented in this report (Fig. 6, page 12).

Survey Results

Raptors

Areas of potential raptor nesting sites were surveyed to 1/4 mile on either side of the proposed pipeline route. The cliff line to the west of the pipeline route was studied with binoculars and a spotting scope. Parachute Creek lies east of the pipeline route and was noted for its lush riparian habitat. The boxelder and cottonwood trees in the riparian habitat were carefully studied for any raptor nests (Table 1).

Table 1. Potential raptor species in the project area.

Common Name	Scientific Name
Northern Harrier	*Circus cyaneus*
Cooper's Hawk	*Accipiter cooperii*
Sharp-shinned Hawk	*Accipiter striatus*
Northern Goshawk	*Accipiter gentiles*
Red-tailed Hawk	*Buteo jamaicensis*
Swainson's Hawk	*Buteo swainsoni*
Ferruginous Hawk	*Buteo regalis*
Golden Eagle	*Aquila chrysaetos*
American Kestrel	*Falco sparverius*
Peregrine Falcon	*Falco peregrinus*
Prairie Falcon	*Falco mexicanus*
Great Horned Owl	*Bubo virginianus*
Northern Saw-whet Owl	*Aegolius acadicus*
Long-eared Owl	*Asio otus*

A raptor survey by WestWater Engineering Company in 2006 noted three active raptor nests in the northern portion of the proposed pipeline route along Parachute Creek. During this study, those three nests were located by GPS coordinates and rechecked for any recent activity:

1) The long-eared owl nest (LEOW at UTM 12S 748042mE, 4384227mN), 25 ft. high in a boxelder tree, was abandoned. No owls, pellets, whitewash, or feathers were observed. The nest seemed to be in ill-repair.

2) The cooper's hawk nest (COHA-26 at UTM 12S 748170mE, 4384096mN), about 50 ft. high in a boxelder tree (Fig. 4), was presumed to be active even though no bird was seen sitting on the nest. As the nest was approached a cooper's hawk from nearby flew away but returned a few minutes later. It perched about 60 ft. from the observer and gave a series of scolding/warning cries for two minutes after which it again flew off. A small amount of whitewash was located beneath the nest.

3) Another cooper's hawk nest (COHA-4 at UTM 12S 747797mE, 4382695mN) that was active in 2006 was found to be abandoned at the time of this survey.

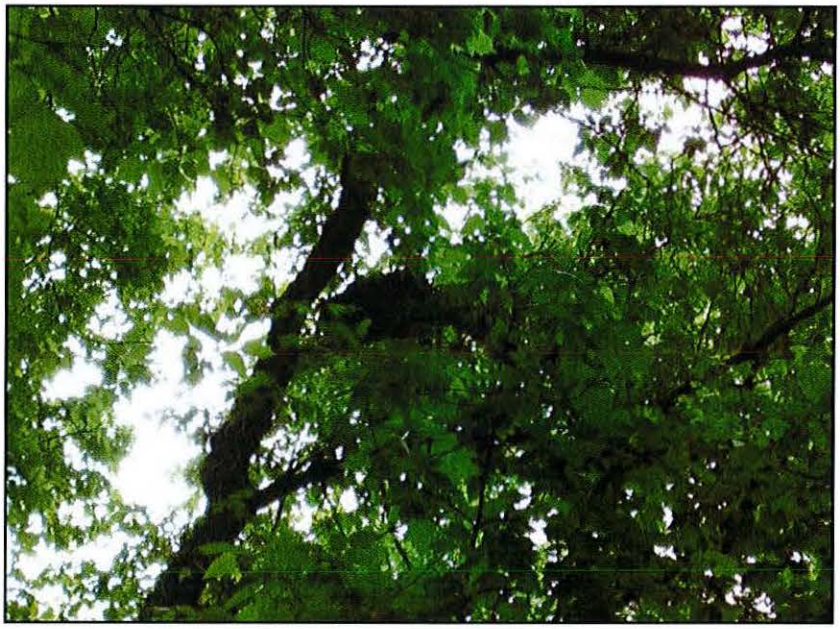


Figure 4. Cooper's Hawk Nest: COHA-26

It is likely there is an active American kestrel nest in a cottonwood tree cavity (AMKE near UTM 12S 747976mE, 4383426mN). It was indicated by an adult flying back and forth to the same location, however no nest itself was found.

Further reconnaissance in the riparian habitat along Parachute Creek produced a few old abandoned stick nests and a few more recent nests built by crows and magpies.

The cliff line to the west of the study area was examined but no evidence of raptor nests was found. A golden eagle did soar once beyond the cliff line but was not observed again over the course of the three day survey.

Recommendations: Monitoring of potential nests should be done to confirm the presence of active nests/chicks. Nesting disturbance should be avoided by delaying pipeline construction within 1/4 mile of the active cooper's hawk nest (COHA-26) and the suspected American kestrel nest (AMKE) until young have fledged. Cooper's hawk and kestrel chicks in this area oftentimes leave the nest by July 15, but if construction is planned for this earlier date then the nest sites should be monitored for activity. If chicks are found to be still in the nests then construction should be delayed until monitoring proves that they have fledged.

TESS plants

TESS plants include species listed by the U.S. Fish and Wildlife Service, the BLM, and the U.S. Forest Service. Ten TESS plant species have been found growing in the general vicinity of the Roan Plateau and Roan Cliffs. However, the soils and elevation of the project area preclude habitat for many such plants. TESS plants often require specialized habitats (shrink/swell clay soils derived from the Wasatch Formation, steep barren talus slopes, waterfalls/seeps) that are

not found along the proposed pipeline route. Table 3 lists TESS plants that potentially could be found within the plant survey boundaries of the project.

Table 3. TESS plants potentially occurring in the project area.

Common Name	Scientific Name	Habitat
Adobe thistle	*Cirsium perplexans*	Limited habitat. Has been found nearby but prefers heavier soils than occur in the project area.
Debeque milkvetch	*Astragalus debequaeus*	Limited habitat. Prefers heavier soils than found in most of the project.
Naturita milkvetch	*Astragalus naturitensis*	Limited habitat. Sandstone outcrops seldom occur in plant survey boundaries.
Roan Cliff blazingstar	*Mentzelia rhizomata*	Good habitat. Alluvium or talus from Green River Formation.
Uinta Basin hookless cactus	*Sclerocactus glaucus*	Good habitat. Wasatch or Green River derived soils.

No TESS plants were identified during the survey. However, habitat for additional TESS plant species does exist west of the pipeline route on steep talus slopes derived from the Green River Formation, but they are outside the survey area. TESS plants which could grow there are: Parachute Penstemon (*Penstemon debilis*), Sun-loving Meadowrue (*Thalictrum heliophilum*), and Piceance Bladderpod (*Lesquerella parviflora*). The talus slopes were not surveyed and will not be subject to impacts from the proposed pipeline.

Recommendations: no action necessary.

COE Jurisdictional Waters

Areas of COE jurisdiction in the project area include Waters of the United States (streams, rivers and dry washes) and wetlands.

The following potentially jurisdictional areas were identified (Figure 6):

1) Parachute Creek, COE-1 (12S 748104mE, 4384385mN). The proposed pipeline follows an established route under the creek and across the Parachute Creek floodplain. Ordinary High Water (OHW) is 20 ft. and depth of 2 ft. The floodplain consists of torrifluvent soils which have watertables from 2 to 4 ft below the surface. A narrow fringe wetland approximately 2 ft in width is present on both sides of the creek.

2) Flowing ditch, COE-2 (12S 746832mE, 4380113mN) 1ft. wide by 1ft. deep. Since the ditch is an agriculturally related irrigation ditch, it may be determine to be non-jurisdictional by COE.

3) Flowing ditch with culvert, COE-3 (12S 746592mE, 4380024mN) 2ft. wide by 3ft. deep.Since the ditch is an agriculturally related irrigation ditch, it may be determine to be non-jurisdictional by COE.

4) Garden Gulch Creek, COE-4 (12S 746672mE, 4379892mN). OHW is 5 ft. wide by 1.5 ft. deep, flowing.

5) Route follows Jangle Ditch (flowing), and crosses it four times in Section 20 (T6S, R96W): COE-5 (12S 746441mE, 4377907mN), COE-6 (12S 746555mE, 4377559mN), COE-7 (12S746622mE, 4377285mN), COE-9 (12S 746680mE, 4376678mN).

Wetland plants including rushes and saturated soil with seepage and pooling water was found below Jangle Ditch. COE-8 (between 12S 746700mE, 4376865mN and 12S 746675mE, 4376978mN) in Section 20. The area of potentially jurisdictional wetland is approximately 380 ft in length by 10 ft in width (0.09 acres). Since the ditch is an agriculturally related irrigation ditch, it may be determine to be non-jurisdictional by COE.

6) Unnamed dry wash south of Crawford Trail, COE-10 (12S 746608mE, 4376582mN) OHW is 3 ft. wide by 1 ft. deep.

7) Unnamed dry wash, COE-11 (12S 747122mE, 4375409mN) OHW is 2 ft. wide by 0.5 ft. Deep gully with culvert.

8) Starky Gulch Creek, COE-12 (12S 747408mE, 4375077mN) OHW is 5 ft. wide by 1.5 ft., shallow flow.

9) Unnamed dry wash, COE-13 (12S 747433mE, 4375044mN) OHW is 1ft. wide, by 0.5 ft. deep.

Figure 5. Pipeline route is near left edge of the irrigated pasture. Jangle Ditch is just left (west) of this pasture.

Recommendations: Avoid crossing COE waters wherever feasible. Pipeline crossing of COE jurisdictional areas are normally permitted under Nationwide Permit #12 in accordance with conditions of the permit.

Cultural Resources

GRI reviewed the archaeological sites files at the Office of Archaeology and Historic Preservation, Colorado Historical Society, for the area of the proposed pipeline. Although there are six sites in the general vicinity of the alignment, there are no known historic properties that are either eligible for listing or listed on the National Register of Historic Places.

Recommendation: The proposed project is not expected to affect any known site.

References

Meyers, Terry - Wildlife Biologist. Verbal communication on raptor breeding habits in survey area. May 28, 2007.

WestWater Engineering, Inc., *North Parachute Ranch 2006 Raptor Survey Report,* Grand Junction Colorado, 2007. 27pp.

The Colorado Native Plant Society, *Rare Plants of Colorado,* Falcon Press, Helena Montana, 1997. 105 pp.

USDA, Soil Conservation Service, *Soil Survey of Rifle Area, Colorado, Parts of Garfield and Mesa Counties,* May 1985. 149 pp.

Grand River Institute, Email Report: Records Review, May 2007.

Appendix A - Common Plants found along the Parachute Express Alignment	
Common Name	Scientific Name
Bluebunch Wheatgrass	*Pseudoroegneria spicata*
Box-elder	*Acer negundo*
Bulbous Bluegrass	*Poa bulbosa*
Chokecherry	*Prunus virginiana*
Clasping Pepperweed	*Lepidium latifolium*
Crested Wheatgrass	*Agropyron spicatum*
Four-winged Saltbush	*Atriplex canescens*
Gambel Oak	*Quercus gambelii*
Greasewood	*Sarcobatus vermiculatus*
Narrowleaf Cottonwood	*Populus angustifolia*
Orchardgrass	*Dactylis glomerata*
Osterhout's Penstemon	*Penstemon osterhoutii*
Prickly Lettuce	*Lactuca serriola*
Russian Thistle	*Salsola iberica*
Sagebrush, Big Basin	*Artemesia tridentata tridentata*
Sagebrush, Wyoming	*Artemesia tridentata wyomingensis*
Skunkbush	*Rhus trilobata*
Smooth Brome	*Bromus inermis*
Snowberry	*Symphoricarpos rotundifolius*
Wavyleaf Thistle	*Cirsium undulatum*
Western Wheatgrass	*Pascopyrum smithii*
Yellow Rabbitbrush	*Chrysothamnus viscidiflorus*

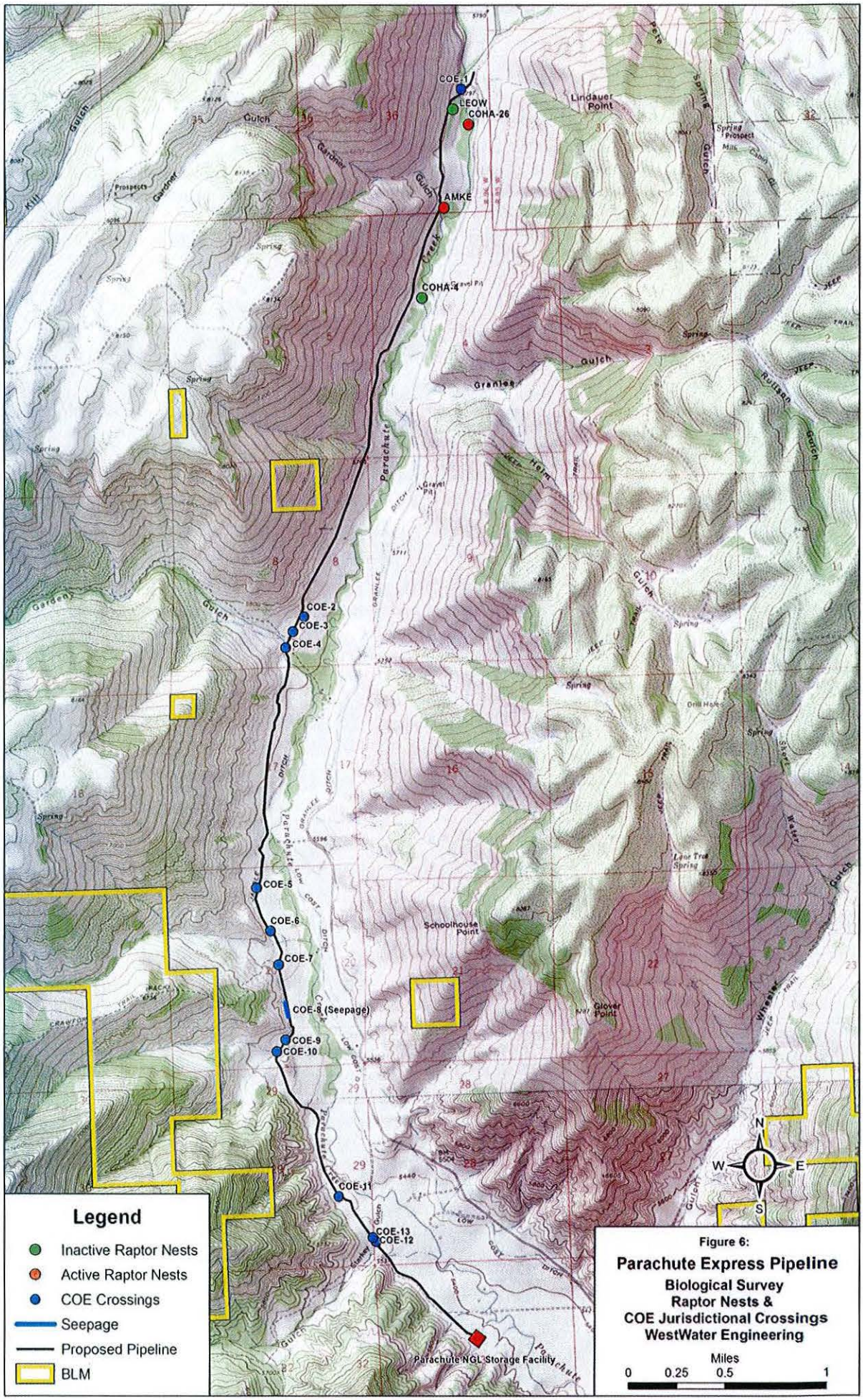


Figure 6:

Parachute Express Pipeline

Biological Survey
Raptor Nests &
COE Jurisdictional Crossings
WestWater Engineering

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
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Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 13- Rehabilitation Plan. Includes Revegetation Plan 9.07.04 (12) and Weed Management Plan 9.07.04 (13).

Steve Anthony- Garfield County Vegetation Management-
Steve Anthony and I discussed the project via phone. Steve indicated that he would review the application after receiving it and will comment.

Please see attached the "Parachute Greasewood Express Pipeline and Parachute Creek NGL Storage Facility Rehabilitation Plan dated 5/31/07."

Please also find attached an "Integrated Vegetation and Noxious Weed Management Plan" for the project prepared by WestWater Engineering.

Steve Anthony noted that he will need a quantity of the acreage to be disturbed to set forth the revegetation bond for the project. It is anticipated that this bond would be released after 2 growing seasons.

The disturbed area is determined using the attached spreadsheet for the Parachute Greasewood Express Pipeline.

Parachute Greasewood Express Pipeline- Total Disturbed Acreage: 73.96 acres
A bond will be posted by Williams Field Services Company, LLC for the 73.96 acres.

Parachute NGL Storage Facility- Total Disturbed Acreage: 2.81 acres
A bond will be posted by Bargath, Inc. for the 2.81 acres.

We are prepared to post a reclamation/revegetation bond for $2,500 per acre for the disturbed acreage noted above.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE DRG JOB 15116 5/9/2007
DISTURBANCE ACREAGE FOR LAND OWNERS IN GARFIELD COUNTY

					EWS LENGTHS			EWS AREAS							
		LENGTH	75' ROW AREA		80 FT.	100FT	OTHER	80 FT.		100FT		OTHER		TOTAL DISTURBANCE	
SHEET No.	LAND OWNER	(FEET)	(SQ. FT.)	(ACRES)	(FEET)	(FEET)	(FEET)	(SQ. FT.)	(ACRES)	(SQ. FT.)	(ACRES)	(SQ. FT.)	(ACRES)	(SQ. FT.)	(ACRES)
1	WILLIAMS PRODUCTION RMT COMPANY	4615.3	346148	7.96	2417	0	100	72510	1.67	0	0.00	10500	0.24	429158	9.87
	PUCKETT LAND COMPANY	1709.8	128235	2.95	260	0	0	7800	0.18	0	0.00	0	0.00	136035	3.13
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LAND OWNER	TOTAL AREA	
	(SQ. FT)	(ACRES)
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PUCKETT LAND COMPANY	136035	3.13
CHEVRON USA INC.	2276833	52.37
ENCANA OIL & GAS (USA) INC.	373556	8.59
TOTAL	3215581	73.96

Parachute Greasewood Express Pipeline
REHABILITATION PLAN
May 31, 2007

The Parachute Greasewood Express Pipeline will be located on private property owned by numerous owners. The length of the pipeline is approximately 7.2 miles in length.

The soil should be stripped to a depth of approximately twelve (12) inches and stockpiled at the edge of the disturbed right-of-way. The maximum depth of stockpile shall be 24" or less to preserve soil viability. The expected duration of the project is 12 weeks. Topsoil stockpiles shall be preserved and water applied to prevent wind erosion.

RECLAMATION

Areas disturbed by construction will be reclaimed no later than November 2007, following pipeline construction. The objectives of reclamation will be as follows:

1. Stabilization of the disturbed areas will be conducted by providing wind and water erosion control to reduce soil loss. The stormwater management plan for the project shall be adhered to.

2. Utilize the prescribed seed mixtures and additional vegetation practices as described below to establish a self-sustaining vegetative rangeland cover.

PIPELINE ABANDONMENT

The pipeline will be abandoned in accordance with Colorado Oil and Gas Conservation Commission regulations in place at the time of abandonment.

BACKFILLING, GRADING, AND RE-CONTOURING

Reclaimed areas will be sloped as per the project drawings and specifications.

TOPSOIL REPLACEMENT

Soil salvaged during construction activities will be redistributed over the soil surface after subsoil has been replaced and additional backfilling; grading, and re-contouring steps have been completed as described below. Soil will be replaced by using front-end loaders, trackhoes, and dozers. Soil will not be replaced when it is excessively wet and/or frozen.

SEEDBED PREPARATION / SOIL TILLAGE

Seedbed preparation and soil tillage will be completed after the application of subsoil, topsoil, and any soil amendments. Soil tillage will be to a minimum depth of 4" utilizing a disk, chisel plow, or harrow. Seedbed preparation will also include removal of coarse fragments (rock material) that exceed 35% to 40% of the soil surface as well as rocks 8" in diameter that occupy more than 10% of the soil surface.

SEEDING METHODS AND TIMES

If seeding is performed in the spring, it will be accomplished by May 15; if fall seeding is performed it will be completed after August 30 and before the soil freezes. Seeding efforts will consist of drill seeding with a rangeland drill to a planting depth of ¼" to ½" on slopes 3:1 or flatter. Broadcast seeding followed by harrowing or hand raking to lightly cover the seed with soil will be used on slopes steeper than 3:1, or on areas inaccessible for drill seeding equipment.

All areas to be reclaimed will be mulched no later than 24 hours after seeding with a certified weed-free straw or grass hay material. Grass hay mulch will be applied at 1 ½ tons per acre, or straw mulch will be applied at 2 tons per acre. Mulch material will be crimped into the soil surface with a commercial mulch crimper, a straight disc, or bulldozer tracks if too steep to otherwise crimp mulch in place. Seed tags shall be retained after planting and submitted to the Garfield County Vegetation Manager to verify the seed mixture and the quantity of seed planted.

SEED MIXTURES

Please see Table 1 for the seed mixtures.

WEED CONTROL PLAN

Prior to construction, a qualified person will inspect the proposed right-of-way and will inventory and map the proposed project area for any listed Garfield County noxious weeds. Based on this inventory and mapping, methods, materials, and timing of weed control measures will be specified. During the life of the pipeline operation, the operator will be obligated to regularly inspect the right-of-way and to inventory and treat any listed Garfield County noxious weeds.

TABLE 1

Final Reclamation Seed Mixture

Common Name	Scientific Name	Pounds Pure Live Seed (PLS) per acre
Alkali Sacaton	*Sporobolus airoides*	1.0
Sideoats Grama	*Bouteloua curtipendula*	2.0
Basin Wildrye	*Leymus cinereus*	2.0
Western wheatgrass	*Pascopyrum smithii*	4.0
	TOTAL PLS	**9.0**

SITE REHABILITATION PLAN PARACHUTE CREEK NGL STORAGE FACILITY
5/31/07

The Parachute Creek NGL Storage Facility will be located on rangeland owned by Williams Production RMT Co. The facility area is 2.81 acres. The subject site appears to lie in the Arvada-Torrifluvents-Helt soil series as shown on the Garfield County Generalized Soils Types map dated 1/31/02. These soils are better classified as a sandy, silty clay (CL) under the Unified Classification System. This soil is a stratified colluvial/debris flow soils which originate on the upper slopes above the project, stratified with alluvial soils deposited by the ancient Colorado River feature.

The soil should be stripped to a depth of approximately twelve (12) inches and stockpiled at the facility margins. The maximum depth of stockpiled shall be 24" or less to preserve soil viability. Topsoil stockpiles will be seeded as described below in the section on seeding methods and times.

RECLAMATION

Two phases of reclamation are planned. Soil stockpiles and areas disturbed by construction that will not be utilized during the facility construction operation will be reclaimed immediately following construction. Final reclamation will be performed within one year of facility closure and removal. The objectives of reclamation will be as follows:

1. Stabilization of the disturbed areas will be conducted by providing wind and water erosion control to reduce soil loss. The stormwater management plan for the project shall be adhered to.

2. Utilize the prescribed seed mixtures and additional vegetation practices as described below to establish a self-sustaining vegetative rangeland cover for cattle pasture use.

FACILITY AND STRUCTURE REMOVAL

The facility will be abandoned in accordance with Colorado Oil and Gas Conservation Commission regulations in place at the time of facility abandonment. Equipment will be removed from the site.

BACKFILLING, GRADING, AND RE-CONTOURING

Reclaimed areas will be sloped to 3:1 or less.

TOPSOIL REPLACEMENT

Soil salvaged during construction activities will be redistributed over the soil surface after subsoil has been replaced and additional backfilling; grading, and re-contouring steps have been completed as described below. Soil will be replaced by using front-end loaders, trackhoes, and dozers. Soil will not be replaced when it is excessively wet and frozen so as to jeopardize soil structure.

SEEDBED PREPARATION/SOIL TILLAGE

Seedbed preparation and soil tillage will be completed after the application of subsoil, topsoil, and any soil amendments. Soil tillage will be to a minimum depth of 4" utilizing a disk, chisel plow, or harrow. Seedbed preparation will also include removal of coarse fragments (rock material) that exceed 35% to 40% of the soil surface as well as rocks 8" in diameter that occupy more than 10% of the soil surface.

SEEDING METHODS AND TIMES

Soil stockpiles and areas disturbed by construction that will not be utilized during compressor station operation will be seeded. If seeding is performed in the spring, it will be accomplished by May 15; if fall seeding is performed it will be completed after August 30 and before the soil freezes. Seeding efforts will consist of drill seeding with a rangeland drill to a planting depth of ¼" to ½" on slopes 3:1 or flatter. Broadcast seeding followed by harrowing or hand raking to lightly cover the seed with soil will be used on slopes steeper than 3:1, or on areas inaccessible for drill seeding equipment.

All areas to be reclaimed will be mulched no later than 24 hours after seeding with a certified weed-free straw or grass hay material. Grass hay mulch will be applied at 1 ½ tons per acre, or straw mulch will be applied at 2 tons per acre. Mulch material will be crimped into the soil surface with a commercial mulch crimper, a straight disc, or bulldozer tracks if too steep to otherwise crimp mulch in place. Seed tags shall be retained after planting and submitted to the Garfield County Vegetation Manager to verify the seed mixture and the quantity of seed planted.

SEED MIXTURES

Please see Table 1 for the seed mixtures.

WEED CONTROL PLAN

A qualified person will inspect the facility site and will inventory and map the proposed project area for any listed Garfield County noxious weeds. Based on this inventory and mapping, methods, materials, and timing of weed control measures will be specified. The vast majority of the facility area will be graveled and will be devoid of vegetation. Williams Field Services reserves the right to modify this plan based on Best Available Technology (BAT) at the time of facility closure.

TABLE 1

Stockpile and Disturbed Areas Reclamation

Common Name	Scientific Name	Pounds Pure Live Seed (PLS) per acre
Western wheatgrass	*Pascopyrum smithii*	8.0
	TOTAL PLS	**8.0**

TABLE 2

Final Reclamation Seed Mixture

Common Name	Scientific Name	Pounds Pure Live Seed (PLS) per acre
Alkali Sacaton	*Sporobolus airoides*	1.0
Sideoats Grama	*Bouteloua curtipendula*	2.0
Basin Wildrye	*Leymus cinereus*	2.0
Western wheatgrass	*Pascopyrum smithii*	4.0
	TOTAL PLS	**9.0**

Parachute Express Pipeline
Integrated Vegetation and Noxious Weed Management Plan

Prepared For
Phil Vaughan Construction Management, Inc.

Prepared By
WestWater Engineering
2516 Foresight Circle, #1
Grand Junction, CO 81505-1022

June 2007

Introduction

In accordance with the request of Phil Vaughan Construction Management, Inc., WestWater Engineering (WWE) biologists have performed a survey of noxious and invasive plant species for a proposed Parachute Express pipeline in Garfield County, Colorado. The northern end of the pipeline is in the NE ¼ of Section 36, T5S, R96W, about 9 miles NNE of the town of Parachute. The pipeline runs a short distance to the southwest and then crosses Parachute Creek. It continues south, following a dirt road that lies just to the west of Parachute Creek (Figure 1).

Figure 1 Parachute Creek crossing, looking east

The southern terminus is in the NW ¼ of Section 33, T6S, R96W, about 3.8 miles northwest of Parachute, at the proposed Parachute NGL Storage Facility. Total length of the proposed pipeline is about 7 miles. The cover photo shows the mid-portion of the Parachute Express Pipeline route looking towards the south. The route runs to the left (east) of the dirt road (Starky Compressor Station is in the midground).

Landscape Setting

Parachute Creek drains a portion of the southern Roan Plateau and flows into the Colorado River. The pipeline route, for the most part, runs west of Parachute Creek, between the creek and the steep canyon sideslopes.

The northern end of the pipeline route crosses unnamed torrifluvent soils in the floodplain of Parachute Creek. As expected, these floodplain soils vary widely in texture. As the pipeline route continues south down the canyon it partially follows a pre-existing pipeline (Figure 2) and crosses valley slopes comprised of Nihill soil (channery loam to channery sandy loam derived from Green River shale and sandstone). Between Garden Gulch and Haystack Mountain the route crosses alluvial fans and terraces consisting of Arvada soil (loam and silty clay loam). Continuing southwards the route once again crosses Nihill soil. Finally, the southernmost one-

half mile of the route crosses a short section of alluvial fans and terraces of Arvada soil. Elevations along the pipeline route range from 5,362 feet to 5,982 feet above sea level.

Figure 2 Pipeline follows older route

Figure 3. Typical riparian vegetation

The Parachute Creek riparian zone supports boxelder (*Acer negundo*), narrowleaf cottonwood (*Populus angustifolia*), skunkbush (*Rhus trilobata*), and associated grasses and forbs (Figure 3). Vegetation on the benches and sideslopes consist of Utah juniper (*Juniperus utahensis*), big sagebrush (*Artemesia tridentata* spp.), greasewood (*Sarcobatus vermiculatus*), and scattered forbs and grasses.

Natural plant communities (likely to have been present before human intervention) on the north and south portions of the proposed pipeline route consist primarily of western wheatgrass (*Pascopyrum smithii*), bluebunch wheatgrass (*Pseudoroegneria spicata spicata*), basin big sagebrush (*Artemesia tridentata tridentata*), needleandthread (*Hesperostipa comata comata*), Indian ricegrass (*Achnaterum hymenoides*), and yellow rabbit brush (*Chrysothamnus viscidifloris*). The middle portion of the route, between Garden Gulch and Haystack Mountain, has a potential natural plant community consisting of western wheatgrass, alkali sacaton (*Sporobulus airoides*), basin big sagebrush, inland saltgrass (*Distichlis spicata*), greasewood, shadscale (*Atriplex confertifolia*), and James' galleta (*Pleuraphis jamesii*).

Plants commonly seen in the survey area are listed in Table 1. Crested wheatgrass, orchard grass, and smooth brome are non-native grasses that were introduced for livestock grazing. Noxious weeds were not included in Table 1, but are separately identified in Table 2.

WWE biologists surveyed the proposed pipeline route May 20, 21, and 23, 2007. The inspection identified appropriate topics for inclusion in an integrated vegetation and noxious weed management plan required by Garfield County Regulation 9.07.04 (13) (BOCC 2002). Factors considered include soil type and texture, existing land management, absence or presence of listed noxious weeds and natural vegetation community.

Plants were surveyed a minimum of 150 feet on either side of the pipeline route. Noteworthy findings were located with GPS, plotted on a map, and are documented in this report.

Table 1. Common Plants along the Parachute Express Pipeline Route.	
Common Name	Scientific Name
Bluebunch Wheatgrass	*Pseudoroegneria spicata*
Boxelder	*Acer negundo*
Bulbous Bluegrass	*Poa bulbosa*
Chokecherry	*Prunus virginiana*
Clasping Pepperweed	*Lepidium latifolium*
Crested Wheatgrass	*Agropyron spicatum*
Four-winged Saltbush	*Atriplex canescens*
Gambel Oak	*Quercus gambelii*
Greasewood	*Sarcobatus vermiculatus*
Narrowleaf Cottonwood	*Populus angustifolia*
Orchardgrass	*Dactylis glomerata*
Osterhout's Penstemon	*Penstemon osterhoutii*
Prickly Lettuce	*Lactuca serriola*
Russian Thistle	*Salsola iberica*
Sagebrush, Big Basin	*Artemesia tridentata tridentate*
Sagebrush, Wyoming	*Artemesia tridentata wyomingensis*
Skunkbush	*Rhus trilobata*
Smooth Brome	*Bromus inermis*
Snowberry	*Symphoricarpos rotundifolius*
Wavyleaf Thistle	*Cirsium undulatum*
Western Wheatgrass	*Pascopyrum smithii*
Yellow Rabbitbrush	*Chrysothamnus viscidiflorus*

Current Amount of Infested Land Needing Treatment

Noxious weeds are common in the Parachute Creek drainage especially along the pipeline route, roadsides, riparian areas, and nearby abandoned fields. Noxious weed species that were found are identified in Table 2. See Figures 4, 5, and 6.

Table 2. Noxious Weeds On the Pipeline Route

Common Name **USDA Symbol**	***Scientific Name***	**Type**	**Control Methods**
Cheatgrass[C] BRTE	*Bromus tectorum*	A	Plant competitive grasses, limit grazing.
Chicory[C] **CIIN**	***Cichorium intybas***	P	Plant competitive grasses in disturbed areas, be alert, herbicides work best on rosettes. Mowing can reduce an infestation.
Common Burdock[C] **ARMI2**	***Arctium minus***	B	Cut and dig rosettes and bolting plants, re-seed with aggressive grasses. Herbicides probably necessary due to widespread infestation and large number of seed-bearing mature plants.
Common Mullein[C] VETH	*Verbascum thapsis*	B	Same as common burdock
Field Bindweed[C] COAR4	*Convolvulus arvensis*	P	Herbicides in fall, plant competitive grasses.
Halogeton[C] HAGL	*Halogeton glomeratus*	A	Tillage can work well but should not be done unless desired perennials and grasses can be quickly established. Spring herbicide application prior to flower bud stage.
Horehound[I] MAVU	*Marrubium vulgara*	P	Herbicides during flowering stage, plant competitive grasses.
Hoary Cress[B] **CADR**	***Cardaria draba***	P	Herbicides during flowering stage, multiple treatments. Plant competitive grasses. Digging or grubbing, unless done biweekly over the course of a few years, is not effective and may only serve to spread the infestation via root sprouts.
Houndstongue[B] **CYOF**	***Cynoglossum officinale***	B	Re-seed with aggressive grasses, remove at flowering or early seed, dig or grub at pre-bud or rosette stage or apply herbicides.
Perennial Pepperweed[B] LELA2	*Lepedium latifolium*	P	Cut or pull during bolting stage. Apply herbicides later in the year to resprouting stems when they reach bud stage.
Redstem Filaree[B] ERCI6	*Erodium cicutarium*	A or B	Winter annual or biennial. Mow after flowering and before seed set. Herbicides when bolting. Plant competitive grasses.
Russian thistle[I] SATR12	*Salsola tragus*	A	Same as cheatgrass
Salt Cedar[B] **TARA**	***Tamarix ramosissima***	P	Repeated or historic flooding of bottomlands to prevent seedling establishment; hand pulling seedlings; spray herbicides on basal portion of stems of young, smooth barked plants, cut larger plants and treat cut stumps within 30 minutes with herbicide plus an adjuvant (remove all stems from site after cutting - they will re-sprout if in contact with soil); shade intolerant - promote growth of native riparian species that will shade out the tamarisk.

Table 2. Noxious Weeds On the Pipeline Route

Thistle, Bull[B] **CIVU**	*Cirsium vulgare*	B	Till or hand grub in the rosette stage, mow at bolting or early flowering; apply seed head & rosette weevils, leaf feeding beetles, cut and bag mature seed heads. Herbicides in rosette stage.
Thistle, Canada[B] **CIAR4**	***Cirsium arvense***	P	Mowing every 2 weeks over 3 growing seasons, and using parasitic insects, or mowing every 2 or 3 weeks followed by herbicide application in late summer or fall, with combination treatments working best. When using herbicides use a mix with two different modes of action. Re-seeding with grasses to allow spraying with appropriate herbicides.
Thistle, Musk[B] **CANU4**	***Carduus nutans***	B	Tillage or hand grubbing in the rosette stage, mowing at bolting or early flowering, seed head & rosette weevils, leaf feeding beetles, herbicides in rosette stage.
Bold type are on Garfield County list; [B]State of Colorado B List; [C]State of Colorado C List; [I]Not currently listed but invasive and problematic in reclamation. Type: A-annual, B-biennial, P-perennial.			

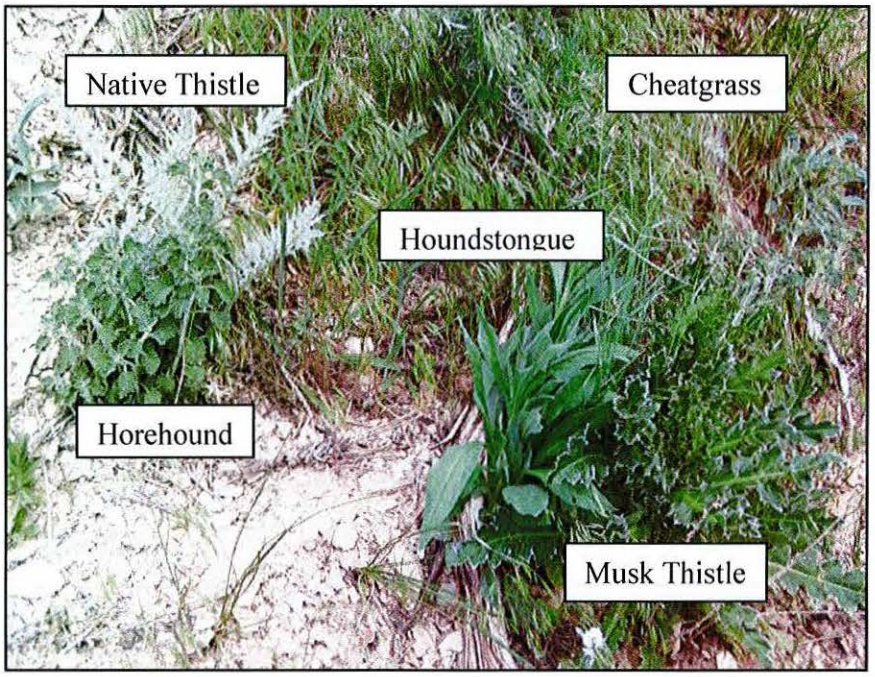


Figure 4. Common weeds along the pipeline route (native thistle is NOT a weed)

Figure 5. Perennial Pepperweed

Figure 6. Field of cheatgrass near route

Garfield County has designated 21 weeds from the State list as noxious weeds to be controlled in their jurisdiction. Seven weed species from the Garfield County list were found and are indicated by bold type in Table 2. The locations of these weeds were plotted on the project map (see Figure 7).

Other noxious weeds from the Colorado State list were noted but not all included on the map. Cheatgrass was especially abundant and found almost everywhere except for maintained hay fields. Field bindweed was found along roadsides and was very common in non-irrigated abandoned fields. Common mullein was infrequently found on somewhat gently sloping areas. Halogeton, horehound, and redstem filaree could be found near disturbed areas, especially along roadsides.

Recommended Treatment

It is important to know whether the target is annual, biennial, or perennial to select strategies that effectively control and hopefully eliminate the target. Tables 3 and 4 include weed treatment strategies for different plant growth types.

Table 3. Treatment Strategies for Annual and Biennial Noxious Weeds
Target: Prevent Seed Production

1. Hand grub (pull), hoe, till, cultivate in rosette stage and before flowering or seed maturity. If seeds develop, cut and bag seed heads.
2. Chop roots with a spade below soil level.
3. Treat with herbicide in rosette or bolting stage, before flowering.
4. Mow biennials after bolting stage, before seed set. Mowing annuals will not prevent flowering but can reduce total seed production.

Table 4. Treatment Strategies for Perennials *Target: Deplete nutrient reserves in root system, prevent seed production*
1. Allow plants to expend as much energy from root system as possible, do not treat when first emerging in spring but allow growth to bud/bloom stage. If seeds develop, cut and bag if possible.
2. Herbicide treatment at bud to bloom stage or in the fall (recommended, after August 15 when natural precipitation is present). In the fall plants draw nutrients into the roots for winter storage. Herbicides will be drawn down to the roots more efficiently at this time due to translocation of nutrients to roots rather than leaves. If the weed patch has been present for a long period of time, another season of seed production is not as important as getting the herbicide into the root system. Spraying in fall (after middle August) will kill the following year's shoots, which are being formed on the roots at this time.
3. Mowing usually is not recommended because the plants will flower anyway; seed production should be reduced. Many studies have shown that mowing perennials and spraying the re-growth is not as effective as spraying without mowing. Effect of mowing is species dependent; therefore, it is imperative to know the species and its basic biology. Timing of application must be done when biologically appropriate which is not necessarily convenient.
4. Tillage may or may not be effective. Most perennial roots can sprout from pieces only 1/2" - 1" long. Clean machinery thoroughly before leaving the weed patch.
5. Hand pulling is generally not recommended for perennial species unless you know the plants are seedlings and not established plants. Hand pulling can be effective on small patches but is very labor intensive because it must be done repeatedly.

Herbicide treatment with two or more herbicide modes of action in fall (after approximately August 15 when natural precipitation is present) is the best method to control difficult perennials such as Canada thistle. The resilience of Canada thistle and its ability to quickly develop immunity to herbicides, particularly those used incorrectly, makes it imperative to use the proper chemicals at the correct time in the specified concentration (Table 5). Most misuse seems centered around excessive use either in frequency or concentration. This results in mostly top kill and an immune phenotype.

Table 5. Canada thistle management calendar

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Active Growth				X	X	X	X	X	X	X		
Bio-Control (Grazing)					X	X						
Mowing							X	X				
Herbicide Application					X	X			X	X		

Following any non-selective herbicide treatment (e.g. glyphosate), the entire treated portion should be replanted with a mix of grasses recommended in this plan. The seed mix only includes grasses and does not include forbs or shrubs as these desirable species are adversely affected by herbicides used in weed control. Shrub and components of the vegetation community can be added after control of undesirable species has been attained.

Best Management Practices

The following practices should be adopted for any construction project to reduce the costs of noxious weed control:

- Top soil, where present, should be segregated from deeper soils and replaced as top soil on the final grade,
- In all cases temporary disturbance should be kept to an absolute minimum.
- Equipment and materials handling should be done on established sites.
- Disturbances should be immediately replanted with the recommended mix in the re-vegetation section. In areas with slope greater than 3%, imprinting of the seed bed is recommended. Imprinting can be in the form of dozer tracks or furrows perpendicular to the direction of slope. When hydro-seeding or mulching, imprinting should be done prior to seeding unless the mulch is to be crimped into the soil surface. If broadcast seeding and harrowing, imprinting should be done as part of the harrowing. Furrowing can be done by several methods, the most simple of which is to drill seed perpendicular to the direction of slope in a prepared bed. Other simple imprinting methods include deep hand raking and harrowing, always perpendicular to the direction of slope.

Herbicides

Difficult species respond better to application of a combination of two or more chemical modes of action (biological reason for plant death) rather than one. Local certified commercial herbicide applicators report best control of Canada thistle using a combination of modes of action. It has also been found that use of two different groups of chemicals in the same mode of action can increase effectiveness on difficult species, e.g. phenoxys and benzoic acids or carboxylic acids and benzoic acids in a mix. Some come commercially pre-mixed, e.g., Crossbow and Super Weed-be-Gone Max which are available over the counter. Some of the most effective herbicides are restricted use and available only for licensed applicators.

Professionals or landowners using herbicides must use the concentration specified. Herbicides generally do not work better at higher concentrations. Most herbicide failures observed by WWE are related to incomplete control caused by high concentrations killing top growth before the active ingredient can be transported to the roots through the nutrient relocation process.

Most herbicide applications should use a surfactant as directed on the herbicide label or other adjuvants as called for on the herbicide label.

Mechanical

We recommended that senescent, seed-bearing, listed weeds on the alignment be cut, bagged and disposed of in a licensed landfill. Rosettes can be cut with a shovel below the surface of the soil on plants which are not yet dormant. Even with some seed drop, cutting and bagging will greatly reduce seed release. Future need to do mechanical or other control methods should be reduced after only two seasons of cutting and bagging.

Alternative Methods

Some noxious weeds are subject to damage from beneficial insects. Included are Canada thistle stem mining beetle, *Ceutorhynchus litura*, Canada thistle bud weevil, *Larinus planus*, musk and plumeless thistle rosette weevil, *Trichosirocalus horridus*, Canada thistle stem gall fly, *Urophora cardui*, and thistle defoliating beetle, *Cassida rubiginosa*, which feeds on the foliage of Canada,

musk, and plumeless thistles (Sullivan 2004). Currently, the thistles present are not of sufficient density, in the opinion of WWE, to support populations of insect parasites. Therefore it is unlikely these insects would be helpful unless explosive spread and growth occurs after the pipeline is constructed.

The bindweed mite, *Aceria malherbae*, is a microscopic mite imported from southern Europe as a biological control agent for field bindweed (Hammon 2006). According to recent anecdotal information it may be a very effective control for bindweed on pipeline route. This mite may be useful for reducing field bindweed.

Grazing

Grazing should be controlled in a manner to enhance rather than diminish the plant community. Certain noxious weeds are highly palatable during short stages of the life cycle to certain grazing animals including goats, sheep, mule deer, elk, cattle and horses. Preparation and implementation of an appropriate grazing management plan should be considered.

Re-vegetation

Soil types on the property support many of the same species of native vegetation. As stated previously, the recommended mix is limited to grasses due to the need to use selective herbicides to spot treat for perennial Canada thistle, field bindweed, common burdock, bull thistle, and musk thistle. The Rehabilitation Plan, May 31, 2007, prepared by others, includes the following seed mix.

Common Name	**Scientific Name**	**Pounds Pure Live Seed** (PLS) per acre
Alkali Sacaton	*Sporobolus airoides*	1.0
Sideoats Grama	*Bouteloua curtipendula*	2.0
Basin Wildrye	*Leymus cinereus*	2.0
Western wheatgrass	*Pascopyrum smithii*	4.0
	TOTAL PLS	9.0

Seeding rate should be doubled for broadcast application. Preferred seeding method is multiple seed bin rangeland drill with no soil preparation other than simple grading to slope and waterbars. Seed should be bagged separately so each size group of seed can be metered at the appropriate rate. Applying a quarter pound over an acre with some species can be difficult and may require use of wheat bran or rice hulls or some other adjuvant to assist metering the small seeds at the appropriate rate.

Alternative seeding methods include but are not limited to:

- harrow with just enough soil moisture to create a rough surface, broadcast seed and re-harrow, preferably at a 90 degree angle to the first harrow,
- hydro-seeding (most economical in terms of seed cost), and
- hand raking and broadcast followed by re-raking at a 90 degree angle to the first raking.

- These are not the only means of replanting the site. However, these methods have been observed to be effective in similar landscapes.

Once successful control of target species and establishment of grasses is successful then shrubs, forbs, and trees can be planted without concern for herbicide damage. Few native forb seeds are available commercially as cultivars. Most are collected from natural populations. Native shrubs and forbs often do not establish well from seed, particularly when mixed with grasses.

References

BOCC. 2002. *Garfield County Noxious Weed Management Plan, Amended May 7, 2002*, Resolution #2002-94; Board of County Commissioners, Glenwood Springs, Colorado,. 43 pp.

CNHP. 1998. *Native Plant Re-vegetation Guide for Colorado. Caring for the Land Series, Vol. III*, Colorado Natural Heritage Program, State of Colorado, Division of Parks and Outdoor Recreation, Department of Natural Resources, Denver, 258 pp.

Colorado Weed Management Association. 2007. URL - http://www.cwma.org/weed.htm

Colorado Weed Management Association. 2007. *Noxious Weeds of Colorado,* Ninth Edition, Centennial, 162 pp.

Tri River Area of Colorado State University's Cooperative Extension - http://www.colostate.edu/Depts/CoopExt/TRA/index.html#main.html

USDA. 1985. Soil Conservation Service. *Soil Survey of Rifle Area, Colorado, Parts of Garfield and Mesa Counties*, 149 pp.

Whitson, Burrill, Dewey, et al. 1996. *Weeds of the West*, Western Society of Weed Science, Newark, 630 p

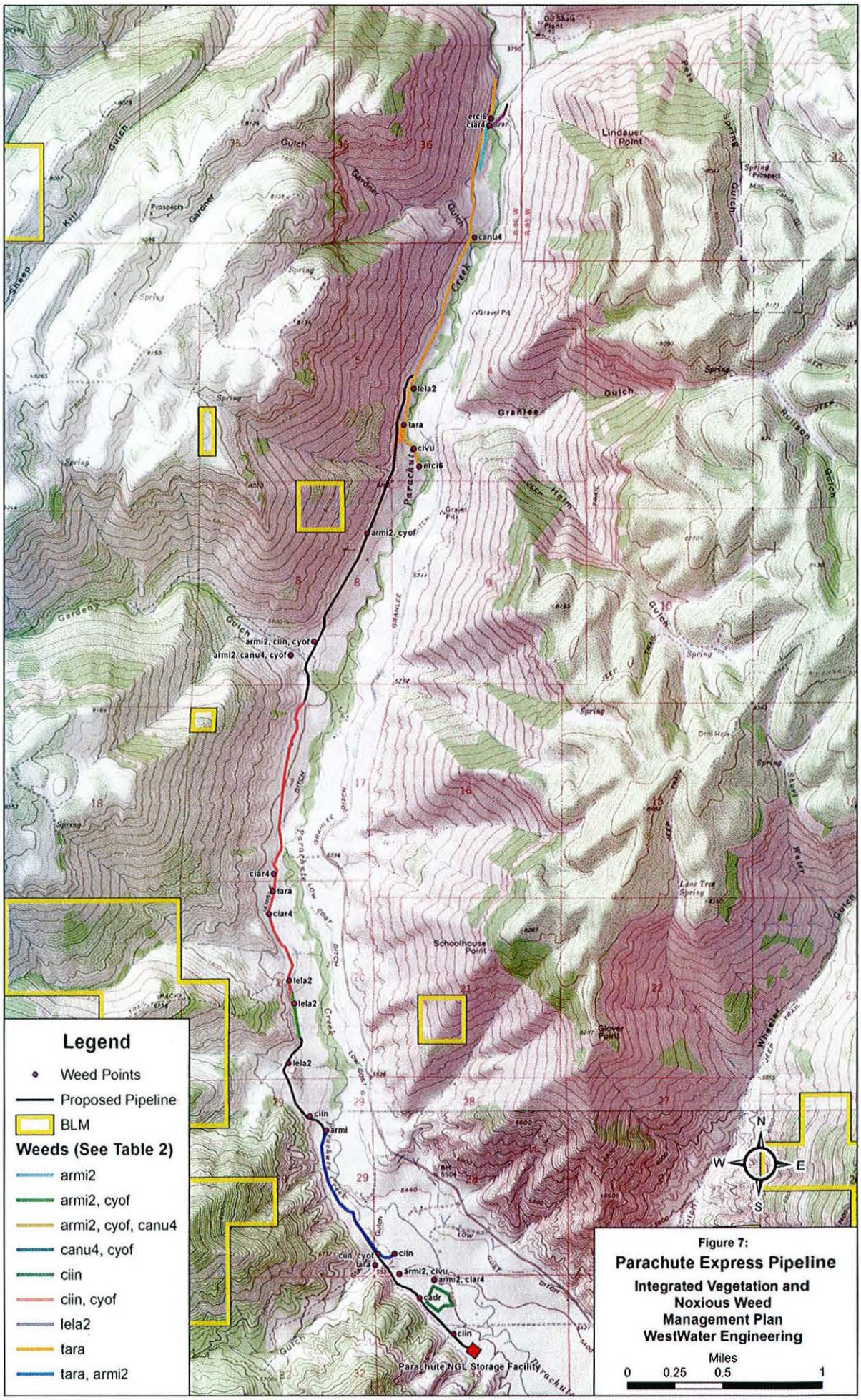


Figure 7:

Parachute Express Pipeline

Integrated Vegetation and Noxious Weed Management Plan

WestWater Engineering

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 15- Emergency Response Plan 9.07.04 (14).

Please see attached the "Emergency Response Plan- Natural Gas Pipeline Gathering System".

This document was submitted to David Blair with the Grand Valley Fire Protection District the first week of June 2007 for his review and comment. The proposed pipeline is wholly within the Grand Valley Fire Protection District.

Prior to start of pipeline construction, an on-site preconstruction meeting shall be held and David Blair shall be invited to attend and to speak regarding emergency response and the Grand Valley Fire Protection District.

As per 9.07.04 (14), Williams Field Services Company LLC agrees to reimburse the Grand Valley Fire Protection District for costs incurred in connection with emergency response for the operator's activities at the site.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

EMERGENCY RESPONSE PLAN

NATURAL GAS PIPELINE GATHERING SYSTEM

GARFIELD COUNTY, COLORADO
RIO BLANCO COUNTY, COLORADO

I. PLAN INTRODUCTION

1. Purpose and Scope of Plan Coverage

a. Plan Details

This Emergency Response Plan (ERP) is specific to the Natural Gas Pipeline Gathering System, owned and operated by Williams Production RMT Company (WPC). This document is designed to provide for the safety and welfare of facility personnel, the community, the environment, and property by enabling a coordinated and efficient response by WPC personnel in the event of an emergency. When the words WPC personnel are used in this plan, they are intended to mean all WPC employees and contractors.

This ERP includes details to:

- make the facility and immediate surrounding area safe (people first, then property and environment);
- isolate the area/facility;
- notify appropriate public agencies;
- identify fire extinguishing equipment, and meeting locations;
- identify medical and rescue responsibilities for trained employees;
- establish methods for reporting fires and other emergency events;
- provide labor, materials, and equipment;
- establish and maintain adequate communication with governmental agencies (fire, police, public officials, etc.) and clarify their responsibilities;
- identify emergency shutdown procedures for affected equipment;
- handle hazardous substances;
- establish an off-site media center and return the facility to service

b. Legal Authority

The intent of this ERP is to comply with guidelines set forth by the Occupational Safety and Health Administration (OSHA). The Emergency Planning and Response Regulations of 29 CFR 1910.38 and Hazardous Waste Operations and Emergency Response (HAZWOPER) Standards of 29 CFR 1910.120 have been specifically followed when applicable.

c. Assumptions and Situations

The procedures outlined in this ERP were developed under the assumption that the local fire protection and emergency response agencies will respond to emergencies at the facility when notified and will assist to the extent of their respective capabilities.

The procedures outlined in this document are to be followed when responding to any of a number of events. These events include, but are not limited to the following:

Natural disasters and severe weather conditions including:

- floods
- damaging storms
- earthquakes
- weather extremes (cold, blizzards, heat)
- lightning and wildfires

Disruption to normal operations:

- Hazardous material/chemical releases from stationary or mobile sources

- unscheduled valve closure or safety equipment shutdown, or any unscheduled emergency shutdown
- major accidents involving WPC vehicles or equipment owned by contractors
- bomb threats
- threats against employees or WPC facilities
- fatalities or multiple hospitalizations involving employees or members of the public
- disturbances on WPC property
- damage to WPC property which interferes with the performance of normal business
- disruption of service to customers (scheduled and unscheduled)

Catastrophic Failure and Damage:

- major fires
- major environmental release
- significant destruction of facilities

The ERP also provides procedures for communications with employees, governmental agencies, and the public during emergencies to assure an effective response during an emergency situation.

d. Facility Health and Safety Policy

This ERP is a reflection of the WPC health and safety policies and procedures. When the facility, or a portion of the facility, is involved in an emergency event, WPC personnel shall take the appropriate action to safeguard human life, protect WPC and surrounding property, and maintain or restore operations if possible.

Field personnel must immediately communicate information about any emergency event to their immediate supervisor. The supervisor will immediately initiate the appropriate notification procedure. In the event that the supervisor cannot be reached immediately, field personnel will initiate necessary notifications.

2. TABLE OF CONTENTS

3. **Current Revision Date:** March 2006

4. **General Facility Identification Information**
   a. Facility Name – Natural Gas Pipeline Gathering System
   b. Williams Production, RMT 4289 County Rd 215, Parachute Co 81635 (970) 285-9377
   c. Garfield County
      Rio Blanco County
      Directions to facility: Main Office- Take Interstate 70 to exit 75. Follow County Rd 215 North approximately 1 mile. Turn Right into office parking lot.
   d. NAICS CODE: 211111
   e. Key contacts for plan development and maintenance:
      a. Safety Representative –Greg Anoia 263-2744
      b. PSM Coordinator – Bruce Reese 263-5307
   f. Phone number for key contact
   g. Facility phone number: 970-285-9377 - Main Office
   h. Facility fax number: 970-285-0121 - Main Office
      970-263-5313 - Man Camp

Section II - - Core Plan Elements

1. **Discovery** – Shutdown of a facility is done manually when an emergency is detected. Natural gas pipelines are not equipped with an ESD device. When a problem is discovered the proper personal are notified to close the necessary valves and to possibly shut in the wells that feed that specific part of the gathering system.

   The first employee to detect or to be notified of an emergency event has the responsibility to:
   - notify emergency personnel
   - notify the Incident Commander. If the designated Incident Commander is not available, contact the Alternate Incident Commander.
   - initiate procedures outlined in the ERP
   - initiate defensive measures to control the emergency event.

   If these measures can be done safely, and then only if the employee has been trained in emergency response or has completed Hazardous Waste Operations and Emergency Response (HAZWOPER) operations level training, defensive measures can be initiated. Using appropriate HAZWOPER training, the employee will determine if a hazardous atmosphere exists where SCBA is required.

   If the first employee has not completed emergency response training, including appropriate HAZWOPER training he/she shall not initiate defensive measures, but shall complete notification procedures.

This checklist should be used to assist the person discovering the incident in determining what steps to take

NAME OF FACILITY:				DATE OF INCIDENT:
YOUR NAME:				TIME 1ST AWARE:
FIRST RESPONDER EMPLOYEE COLLECTS THE FACTS.				
Briefly describe the emergency:				
Was the ESD activated?	Yes	No	N/A	Time:
Did you activate the siren?	Yes	No	N/A	Time:
Can you isolate the problem area?	Yes	No		Time:
CAUTION: Do not risk your life or the life of others.				
Is rescue needed?	Yes	No		Time:
Is first aid needed?	Yes	No		Time:
If yes, can you move the victim?	Yes	No		Time:

Are you in a hazardous environment?	Yes	No	Time:
Do you have the proper equipment to proceed without help?	Yes	No	Time:
Do you need to call 911?	Yes	No	Time:
Are you able to set up an emergency command center?	Yes	No	
Who should you contact for assistance?			

LOCAL EMERGENCY RESPONSE AGENCIES

Time:	Name Ambulance Service: City: State:	Phone No.
Time:	Name Hospital: City: State:	Phone No.
Time:	Name Air Life: City: State:	Phone No.
Time:	Name Alternate Hospital: City: State:	Phone No.

LAW ENFORCEMENT

Time:	Name City Police: City: State:	Phone No.
Time:	Sheriff's Office County: City: State:	Phone No.
Time:	State Patrol Name: City: State:	Phone No.

FIRE DEPARTMENT

Time:	Fire Department Name: City: State:	Phone No.

COMPANY PERSONNEL

Time:	Name: City: State:	Phone No.

NOTE:

Notify Primary Contact as soon as you have the emergency in primary control (e.g., ESD - evacuate - rescue - first aid - isolate fuel source if fire - spill containment to prevent environmental contamination).

Time:	Name Project Supervisor:	Phone No.
Time:	Name Facility Operator:	Phone No.
Time:	Name Other Technicians:	Phone No. Phone No.
Time:	Name Other Operators:	Work No. Home No.
Time:	Name Safety Engineer:	Work No. Home No.

If you have the problem under control, start your Emergency Response Plan.

LOCAL RESIDENCES

Time:	Name of Resident: Location:	Phone No.
Time:	Name of Resident: Location:	Phone No.
Time:	Name of Resident: Location:	Phone No.

PIPELINE COMPANY(S) or OTHER AFFECTED COMPANY(S)

Time:	Company:	Phone No.
Time:	Company:	Phone No.
Time:	Company:	Phone No.

UTILITIES

Time:	Company:	Phone No.
Time:	Company:	Phone No.

Other Action(s) Taken - Attach extra sheets if necessary.

Time:	
Time:	
Time:	
Time:	

Emergency is under total control.

Time: Date:

Incident Commander's Initials:

2. Initial Response

a.1 Discovery

Upon discovery of an emergency by operations personnel, the Production Supervisor and Safety Representative should be notified

NAME	TITLE	TELEPHONE
Steve Soychak	District Manager	(970) 285-9377 (970) 216-0922 (cell)
Brad Moss	Production and facilities Superintendent	(970) 285-2282 (970) 263-3683 (cell)
Dan Hoover	Production Supervisor	(970) 263- 5303 (970) 210- 2288 (cell)
Kevin McDermott	Safety Engineer	(970) 285-9377 (970) 309-1195 (cell)
Dave Cesark	Principal Environmental Specialist	(970) 285-9377 (970) 216-9181 (cell)
Tom Fiore	Plant Engineer	(970) 263- 2743 (970) 210-1641 (cell)
Blake Roush	Highlands Project Manager	(970) 263- 5321 (970) 270-7028 (cell)
Scott Brady	Drilling and Completions Supervisor	(970) 285-9377 (970) 270-9187 (cell)
Greg Anoia	Safety Coordinator	(970) 285-9377 (970) 216-1387 (cell)

a.2 Emergency Shutdown Procedures

If an emergency necessitates that facility operation be terminated, an emergency shutdown (ESD) should be performed by authorized personnel. Closure of all necessary valves will be done manually, by authorized field personnel. Next, account for all the personnel working at the site. If the operations personnel do not know where his partner is, he should make a quick sweep of the area to warn him. If a pre-work tailgate meeting was performed, use that sign in list to help account for all personnel.

Any emergency shutdown should occur with the intent of maximizing safety and minimizing property or equipment damage. If performing an emergency shutdown will potentially cause injury or death, then personnel should evacuate the facility without completing shutdown procedures.

a.3 Evacuation and Personnel Accountability

Personnel shall evacuate in a safe, prompt manner, following an appropriate evacuation route. Upon evacuation of the location, personnel shall at least 500 feet from the hazard. Personnel and any visitors to the site at the time of the emergency will be accounted for when evacuation is complete.

a.4 Regulatory Notifications

Reporting of incidents to regulatory agencies will be the responsibility of the Safety Engineer and the Principal Environmental Specialist. In the event of an emergency, the Safety Engineer and/or Principal Environmental Specialist will determine which agencies should be notified and provide information to the proper representatives. The Spill Prevention Control and Countermeasure Plan (SPCC) for the Parachute Creek Gas Plant should be referenced for reporting procedures and regulatory contacts related to spills and releases.

NAME OF COMPANY OR AGENCY	PHONE NO.
Any Emergency – Emergency Control Center	911
St. Mary's Air Life City: Grand Junction State: Colorado	1-800-322-4923
St. Mary's Hospital City: Grand Junction State: Colorado	(970) 244-2273
Grand River Memorial Hospital City: Rifle State: Colorado	(970) 625-1510
Garfield County Sheriff City: Rifle State: Colorado	(970) 625-1899
State Highway Patrol City: State: Colorado	(970) 248-7277
Colorado State Patrol HAZMAT Service City: Parachute State: Colorado	(970) 248-7283
Rifle Fire Protection District City: Rifle State: Colorado	(970) 625-1220
Other Agencies or Contacts (Customers, people living near the Facility, etc.)	
Garfield County Emergency Planning Committee City: Glenwood Springs State: Colorado	(970) 945-8020
Colorado Department of Public Health and Environment City: Denver State: Colorado	(303) 692-2035
Environmental Protection Agency City: State:	1-800-227-8917
Colorado Oil & Gas Conservation Commission Contact: Jaime Adkins State: Colorado	(970) 285-9000
Garfield County Assist County Manager Contact: Jesse Smith State: Colorado	(970) 309-5440
Garfield County Public Health Contact: Jim Rada State: Colorado	(907) 625-5200 ext. 8113
Garfield County Oil & Gas Department Contact: Judy Jordan State: Colorado	(907) 625-0973 ext. 2006

b. Establishment of a response management system

b.1 Fires

When responding to a fire or explosion, evaluate the situation upon discovery and alert the emergency control center (Fire Department & Sheriff Department) and appropriate WPC personnel immediately of the fire and its location. Give details of the fire to the Senior WPC

Representative as soon as possible. The fire could either be 1) limited to the immediate incident location 2) be limited to the confines of the incident location with the potential for migrating off-site or 3) extends beyond the incident location.

In the first situation the incident can be mitigated with trained personnel. If the emergency will not necessitate the shutdown of equipment, secure the area, and proceed with containment and control procedures as necessary. Only attempt to extinguish incipient fires with portable extinguishers and by shutting off the flow of the gas to the fire. If the fire cannot be quickly controlled, evacuate the hazard area. Keep supervision aware of the conditions, and whether additional personnel or equipment will be needed.

The second situation probably cannot be mitigated without outside assistance from local emergency response agencies. The Fire Department and the Sheriffs Department must be alerted via "911". The Senior On-Duty WPC Representative should take command of the incident until the Senior Officer from the emergency response organization arrives on the scene and assumes control. Provide follow-up information to the responding fire department units including the Property Damage/ Loss Report/ Near Miss Report (http://intranet.williams.com/eforms/forms/property_loss_near_miss.doc) and any hazardous material release information.

In the third situation, a fire beyond the confines of the incident location, the public could be affected within 60 minutes. The response cannot be mitigated without both WPC and local government resources.

A more aggressive firefighting posture towards a fire may be attempted with the on-site approval and direction of a Williams Superintendent/Manager or their superiors.

b.2 Hazardous Material Releases

In the event of a hazardous material release, the primary concern and responsibility is the protection of life. The second responsibility is the protection of property and the surrounding environment. Notify the Senior WPC Representative of the emergency with a brief description of the incident, the location, product and specific equipment involved.

Leave the area immediately if potentially harmful levels of flammable vapors/gas are present. Do not allow access to the area by unnecessary persons.

If the hazardous material spill or leak is beyond the capability of the WPC personnel, evacuate the area. Personnel should rendezvous at least 500 feet from the Hazard.
When possible evacuate up wind of the hazard.

Refer to the Material Safety Data Sheets (MSDS's) for information on the specific materials released in order to evaluate the hazard. Contact CHEMTREC at 1-800-424-9300 if additional information is required.

Attempt to defensively control the leak or reduce the spill size by remotely closing the appropriate valve, reducing operating pressure, or rotating a leaking container so that the hole is above the level of the liquid.

Proceed within the guidelines of HAZWOPER and other appropriate emergency processes to control or contain the extent of the release as well as follow proper decontamination procedures.

b.3 Medical Emergency
A medical emergency must be responded to immediately using available First Aid equipment. Personnel with current First Aid training should be called upon first to control the situation. Local medical emergency response agencies must be notified immediately. Emergency contacts are listed in Section II 2 a.4. Be ready with the following information:
- Location of incident with directions to the scene.
- Number of people injured.
- Type(s) of injuries if known.
- Condition of the patient if known.
- Whether rescue equipment is needed to transport the victim. For example, is the victim trapped in machinery, in a confined space, etc?

b.4 Severe Weather Incidents
The facility operations personnel will rely on local weather forecasts and media broadcasts for warning of approaching severe weather. Upon notice or alert of severe weather, personnel should secure the facility and seek shelter. When it is safe to return to the facility, all systems and equipment should be checked for damage and any emergency situations handled in accordance with the ERP.

b.5 Transportation Accidents
Response to vehicle accidents at or near the facility should be appropriate to the extent of injury and property damage. Accidents involving WPC or contractor vehicles that cause or have the potential to cause an emergency at the facility shall be reported as soon as safely possible to the Project Supervisor and Safety Engineer. In the case of any accident follow the instructions listed on the back of the Accident Report Kit. If this packet is not located in the vehicle contact the Safety Engineer.

b.6 Vandalism/Sabotage
Upon discovery of evidence of vandalism or sabotage, an immediate assessment of all equipment and systems on location shall be performed. After the assessment is accomplished and a return to normal operations is possible, a thorough documentation of the vandalism should be completed and reported to the Project Supervisor and Safety Engineer. Local law enforcement should be contacted as necessary.

b.7 Bomb Threats
Any threat made toward personnel or WPC property should be taken seriously and considered dangerous. This threat could be received by phone, written or electronic message, through a third party such as the media, or by actual discovery of an explosive device. When a threat has been received promptly notify the Production and Facility Superintendent, the Safety Engineer and local law enforcement agencies.
The Bomb Threat Checklist provided in this section is to help access the threat and to properly document the situation. Most prank calls involve very general information, which makes it difficult to develop an appropriate response. When the bomb threat contains specific information and has positively identified a target, the threat will be treated as very serious and immediate action should be taken to evacuate the threatened area. If Possible, obtain as much information as possible about the location of the bomb, when it is set to explode, etc. The caller might refuse to give any information, or may actually want to provide detailed information so those employees can be evacuated.

Whenever a specific location is included in a bomb threat, a search must be performed, but only a Military Explosive Ordinance Disposal Team, a Police Bomb Squad, or a Fire Department Bomb Squad should conduct the search. Williams personnel should not enter the facility during a bomb threat situation for any reason!

BOMB THREAT CHECKLIST

Name of Facility: _____

Report call immediately to: Telephone

Bomb threat received by: Date

Questions to ask	Exact wording of threat
1. When is bomb going to explode?	
2. Where is bomb right now?	
3. What does bomb look like?	
4. What kind of bomb is it?	
5. What will cause it to explode?	
6. Did you place the bomb?	
7. Why?	
8. What is your address?	
9. What is your name?	

THE FOLLOWING INFORMATION REQUIRES OPINION, PERCEPTION AND JUDGEMENT. PLEASE GIVE YOUR VERY FIRST IMPRESSIONS:

CALLER WAS:	Male	Adult	Female	Child
ESTIMATE AGE	Pre Teen	Teenage	20 – 40	40 – 50
	50+			
CALLER'S SPEECH:	Accent	Heavy	Slight	Foreign
	Spanish	Asian	German	Other
	American	Southern	New England	Other
CALLER'S VOICE:	Calm	Soft	Distinct	Angry
	Loud	Slurred	Excited	Ragged
	Laughing	Crying	Rapid	Slow
	Normal	Deep	Nasal	Lisp
	Stutter	Deep Breathing	Familiar	Raspy
	Clearing Throat	Cracking Voice		
BACKGROUND SOUNDS:	Street Noises	Office Machinery	Animal Noises	
	Tele Booth	Kitchen Ware	Voices	Airplane
	Bus	Factory Machinery	Train	Clear
	Music	House Noises	Local	Weather
	Motor	Long Distance	Static	Other
THREAT LANGUAGE:	Well Spoken	Incoherent	Foul	Taped
	Irrational	Message Read by Threat Maker		

3. Sustained actions

a. Facilities, Supplies, and Equipment

Equipment and supplies to be used in the event of an emergency shall be stored at the facility or carried in field vehicles (if appropriate). Emergency fire equipment will be maintained and located as described in the Fire Prevention portion of the Safety Manual under section 2.5 (http://intranet.williams.com/epss/EHS/safetymanual.doc). Spill or release response materials should be stored in a protected location and replenished immediately after they are used. All emergency equipment should be inspected frequently and deficiencies corrected immediately.

b. Facility Security

Field personnel control general security during regular duties. Unauthorized personnel should be escorted off site. During an emergency, the Incident Commander will control security. Access to the site will be restricted to individuals involved in specific emergency response procedures. Local law enforcement may be contacted if needed to secure the facility and immediate surroundings.

c. Media Relations Policy

In the event of an emergency, a designated spokesperson (who receives periodic media training) at the site will handle initial communications with the public and the media. The designated spokesperson may give the media a brief outline of known facts at the scene; subsequent responses will be coordinated through the WPC Corporate Office.

In addition, the designated supervisor, and only that person (usually the Production Superintendent or the District Manager) who has had media training shall speak to the media or the public about the emergency event. If reporters arrive, the designated supervisor should check their credentials to confirm that they are reporters, assign someone to escort them to the site and keep them within safe areas.

4. Termination and Follow-Up Activities

a. Recovery of Operations

Facility operations should commence as soon as safely possible following a facility or equipment shutdown event. An inspection and review of affected equipment or systems by safety and engineering staff members may be required before normal operations can be restored.

b. Documentation

The Incident Commander shall make certain all calls, conversations, pressures, quantities, or other information pertinent to an emergency event are documented per this ERP and the attachments herein. See Section II 1.

c. Damage Assessment

Personnel designated by the Incident Commander shall visually inspect all equipment and systems following an emergency incident. Any evidence of damage will be reported to the Incident Commander and properly documented. Any damaged equipment that presents an unsafe condition shall be repaired or replaced before returning affected systems to normal operation.

d. Post-Emergency Activities

When the emergency has ended or as soon as practical, the following should be considered:

- the extent of the damage;
- an estimate of time required to repair the equipment/facility.
- Call personnel and have them report to duty if and when they are needed:
- locate pertinent material available from stock or suppliers;
- arrange for contract equipment and personnel;
- prepare plans for returning the facility to service;
- assist in any other activities affected by the emergency;
- dispatch work crews and equipment to the site as needed;
- restore facility to service as soon as repairs can be made safely and in accordance with established procedure;
- evaluate the cause of failure and provide a written plan to prevent a reoccurrence of the emergency event.

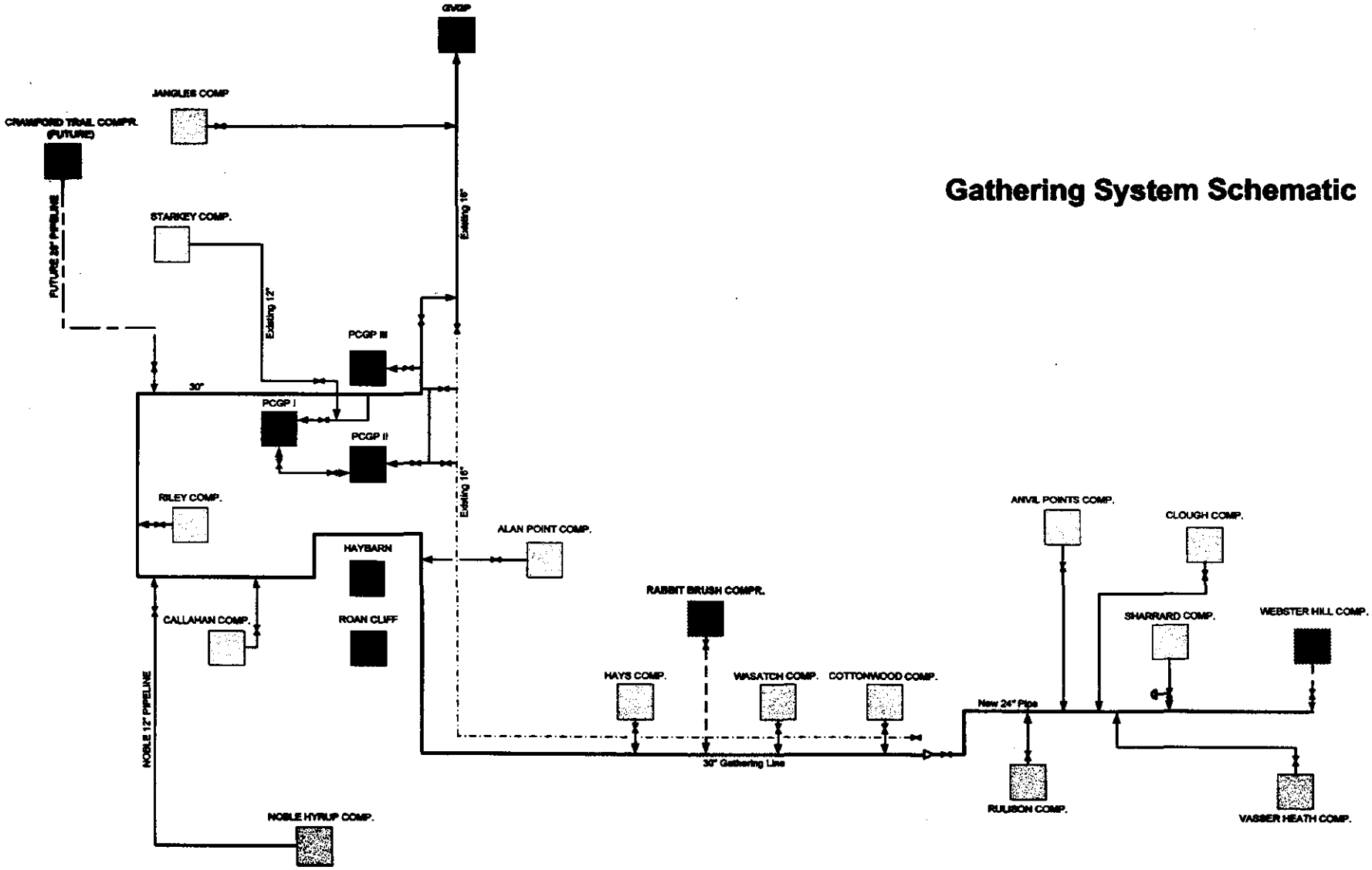
Emergency events will be investigated per the requirements of WPC accident investigation procedures. The investigation will determine the root cause of the emergency event and recommend any needed changes in order to prevent recurrence. The investigation will assess the effectiveness of the response team and the ERP to determine whether improvements are needed.

SECTION III – Annexes

Annex 1. Facility and Locality Information

a. **Facility maps (next page)**

Gathering System Schematic



b. Facility hazard and risk analysis

b.1 Overview of the Facility

Williams processes its own gas, as a result of this Williams has an extensive natural gas gathering system in Garfield and Rio Blanco County. The Gathering system transports over 400 million cubic feet of gas a day. The facilities operate 24 hours per day, 365 days per year.

b.2 Facility Risk Evaluation

A natural gas gathering system is inherently vulnerable to risk due to the constant presence of flammable gas. Fire or explosions caused by accidents or improper procedures is a serious threat to life, property and the environment and is considered to be the greatest risk to the gathering system. Following proper safety guidelines and adhering to safe-work practices can mitigate this risk.

b.3 Offsite Risk Evaluation

Gathering system pipe runs within close proximity to Businesses, Homes, Ranches, Utilities, Roads and other gatherings systems. As such, there exists a risk of impact or influence to the facility from offsite sources. The greatest risk to the facility is when ground is being disturbed. Anytime excavating needs to be done a one call must be made. Performing a one call is required under Colorado state law.

Annex 2. Notification – included at Initial Response under Section II

Annex 3. Response Management System

The response team is an organized management group established to respond to an emergency and should be comprised of personnel assigned to perform the following functions (an individual may perform multiple functions, due to the size of the facility and typical staffing levels):

The Incident Commander is any employee with operational responsibility (a supervisor, foreman, manager, plant operator, etc.) who has received training in emergency response.
The Incident Commander must:

- have access to this ERP
- immediately initiate procedures in the ERP and notify the immediate supervisor.
- gather information on the emergency event
- implement actions to mitigate the emergency and coordinate and document all telephone calls, conversations, pressures, etc. pertinent to the emergency event until relieved of the responsibility by a higher level of management.

The Incident Commander is responsible for managing the emergency event, and will coordinate the following activities:

- Establish a command post, assemble the response team and assign team member responsibilities;
- Assess priorities - safety first, mitigation second;
- Account for location of all personnel who were in the area/facility at the start of the emergency;
- Implement the Emergency Response Plan;
- Provide on-site supervision of response activities;
- Assess and deploy needed resources and coordinate activities;

- Serve as or provide for an emergency event safety officer, responsible to prevent injuries and/or death;
- Maintain communications with the Plant Superintendent and the Safety Engineer throughout the response;
- Coordinate activities of and respond to outside agencies;
- Coordinate response to initial contacts with local press and government agencies;
- Return the facility back to normal service;
- Complete all reports associated with the emergency event;
- Conduct an investigation to determine the root cause of the event and develop corrective actions to prevent recurrence.

The Logistics Officer obtains necessary response equipment and material to support emergency and mitigation procedures.

The Administration/Finance Coordinator arranges for humanitarian assistance, lodging, meals, etc. and manages purchase orders, contacts, etc.

The On-Site Safety Officer ensures site, public, and employee safety, establishes the site safety plan, coordinates environmental response, maintains proper communication with local, state, and federal emergency response organizations, or other agencies as necessary.

The On-Site Coordinator/Operations Chief is responsible for oversight and management of site activities.

The Planning Officer coordinates contractors and additional company personnel as necessary.

The Safety Engineer will communicate reportable incidents by telephone to appropriate regulatory agencies as soon as possible.

If informed of an emergency event by a private citizen, WPC personnel will obtain as much detail as possible and call a designated field employee to investigate the status. Employees at or near the scene will respond to the emergency immediately.

Facility Personnel are responsible to provide initial response and containment of the emergency. They shall:
take appropriate actions to guarantee public, employee, equipment and environmental safety
have completed emergency response training, including a minimum HAZWOPER incident command and technician level training (if expected to respond offensively, e.g., to stop a hazardous materials release or perform as an incident commander).

TITLE	NAME	RESPONSIBILITIES DURING AN EMERGENCY
Incident Commander		Supervises the response activities and coordination of efforts, media contacts, and compliance contacts.
Logistics Officer		Obtains necessary response equipment and material to support emergency and mitigation procedures.

Administration/Finance Coordinator		Arranges for humanitarian assistance, lodging and meals as well as manages purchase orders, contacts, etc.
Planning Officer		Coordinates contractors and additional company personnel as necessary
Safety Engineer		Communicates reportable incidents, assists with safety equipment, & control efforts.
[illegible]		
On-Site Safety Officer		Ensures site, public, and employee safety, establishes the site safety plan, coordinates environmental response, maintains proper communication with agencies as necessary.
On-Site Coordinator/Operations Chief		Control of emergency, isolation of facility.
[illegible]		
Technician Level Responder		Set up incident command post & isolation of facility.
Operations Level Responder		Defensive response, contact appropriate personnel.
[illegible]		
Person in Charge		Coordinate support efforts.
Operations Manager		
Rescue Personnel (All area field personnel):		
Medical Personnel (All personnel trained in First Aid & CPR):		
Other Area/Facility/Regional Personnel:		

Annex 4. Incident Documentation

a. Post accident investigation

Once a practice drill or an emergency incident has occurred, and an investigation into that incident has begun, the use of this emergency response plan along with the procedures and policies listed in it should be critiqued bases on its use, effectiveness, and its completeness. This section establishes basic questions, which will assist in this follow-up evaluation and is intended to meet compliance with OSHA standard CFR 1910.120(q)(2)(x)).

b. Incident history

Annex 5. Training and Exercises/Drills

a. Training

Production Supervisors or a Safety Representative will make certain that this ERP is reviewed with all new employees during their orientation (or first week of employment), and with all employees on an annual basis.

At the time of orientation it will be made clear that at a minimum, the Personal Protective Equipment (PPE) required at all production facilities includes a hard hat, steel-toe shoes, safety glasses and ear protection in posted areas.

Documentation of the individual employee review is required for verification of training. All records of training should be kept up to date.

Each employee identified in the ERP shall be current on emergency response training that shall include the appropriate level of HAZWOPER training.

Training shall cover the following:

- responses for specific roles in various ER scenarios;
- the use of appropriate communication systems and alternate communication methods when the plant system is disabled;
- organizing and actively taking part in a response team drill;
- how to locate isolation valves/shutdown controls;
- how to respond to specific failures;
- how to respond to media questions;
- how to interact with public officials;
- where to meet in the event roads to the station are impassable and/ or communications are unavailable;
- appropriate control, containment, and clean-up procedures;

b. Drills and Exercises

A Safety Representative will schedule an annual facility drill to assess the effectiveness of the ERP and associated procedures. The drill shall consist of an emergency scenario that exercises various procedures described in the ERP. At the completion of the drill, a review shall be performed and documented. If necessary, the ERP will be revised to correct any deficiencies noted during the review. The drills, activities and review comments should be recorded on the Facility Personnel Responsibilities form provided below, and kept on file for three years.

EMERGENCY DRILL FORM

Date of Drill:_____ Facility Name:_____

Attendees:_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

Drill Scenario:_____
_____
_____
_____
_____
_____

Emergency Equipment/Activities Involved/Topics Covered (check if yes):

SCBA: _____ Emergency Rescue:_____
Portable Fire Extinguishers:_____ Plant Shutdown:_____
Wheeled Fire Extinguishers:_____ Equipment Shutdown:_____
Eye/Face Equipment:_____ Lockout/Tagout:_____
SPCC:_____ CPR/First Aid:_____
HAZWOPER:_____ Hazard Communication:_____
Others:_____

Contacts Made:

Safety Department:_____ Operations Manager:_____
Others: _____

Discussion Points/Comments:

_____
_____
_____
_____
_____

Training Conducted/Accomplished:

_____
_____
_____
_____

Annex 6. Response Critique and Plan Review and Modification Process

Questions:
The following are the types of questions that should be answered, after an incident has been mitigated or after a practice drill has been completed, in order to evaluate this Emergency Response Plan.

1. Was the Emergency Response Plan implemented in a timely and efficient manner?

2. Were evacuation alarms activated, escape routes followed and personnel accounted for?

3. Were the proper authorities and agencies notified in a timely manner?

4. Were proper procedures/checklists followed and were they effective in resolving the incident?

5. Was the correct personal protective equipment used?

6. How could this emergency response plan be changed to increase its effectiveness?

7. Was the Emergency Response Plan implemented in a timely and efficient manner?

8. Were evacuation alarms activated, escape routes followed and personnel accounted for?

9. Were the proper authorities and agencies notified in a timely manner?

10. Were proper procedures/checklists followed and were they effective in resolving the incident?

11. Was the correct personal protective equipment used?

12. How could this emergency response plan be changed to increase its effectiveness?

This emergency response plan should be revised if it is determined that its use, procedures or policies are not effective in mitigating the practice drill or emergency incident.

EMERGENCY RESPONSE PLAN REVIEW RECORD

This ERP should be considered a controlled document and treated accordingly. A Safety Representative is responsible for revising and updating the ERP on a regular basis.

Name of Facility: Williams Natural Gas Pipeline Gathering Systems (Parachute Co. E&P)
Date of Initial Plan Development: 3/30/06

Date of Last Review for Plan Accuracy: March 06

Date of Last Revision: March 06

Production and Facility Superintendent Name: Brad Moss

Plant Superintendent Signature: _____ Date: _____

DATE	RESPONSIBLE PARTY	ACTION
August 2003	Cordilleran	Original Documents
Summer 2004	C. Hale/ K. McDermott	Annual Revision
March 2006	Greg Anoia	Conversion to Integrated Contingency Plan format, Annual revision

Annex 7. Prevention

a. General Prevention Policy

Incidents at the facility will be minimized through personnel training, regular safety inspections, and implementation of the policies and procedures outlined in this ERP and the WPC safety program. The primary responsibility for prevention of emergency incidents is placed on facility operations personnel. Any substantial change or addition to facility equipment or process will necessitate a review of safety procedures and a revision of applicable procedures in this ERP.

b. Fire Prevention Policy

Please refer to the Safety Manual for information concerning fire prevention. This is available from the Safety Engineer or on the Intranet at http://intranet.williams.com/epss/EHS/safetymanual.doc.

c. Facility Safety Inspections and Audits

Periodic safety audits along with regular operations and maintenance routines will be carried out with the intent of identifying and minimizing potential safety hazards and poor housekeeping practices.

Annex 8. Regulatory Compliance and Cross-Reference Matrices

REGULATORY SUBJECT	REGULATORY CITATION	LOCATION IN WPC PLAN
OSHA Emergency Response Program	**29 CFR 1910.120**	
Pre-emergency planning and coordination with outside parties.	(p)(8)(ii)(A)	Section I 1, 2a.2, 2a.3
Personnel roles, lines of authority, training, and communication.	(p)(8)(ii)(B)	Sections I 1, 3b, 3c, 2a.1 Annex 1b, 3, 5
Emergency recognition and prevention.	(p)(8)(ii)(C)	Sections I 1c, I 1d Annex 1b
Safe distances and places of refuge.	(p)(8)(ii)(D)	Section II 2a.3, II 2b Annex 1a
Site security and control.	(p)(8)(ii)(E)	Section II 3.b
Evacuation routes and procedures.	(p)(8)(ii)(F)	Section II 2a.2 Annex 1a
Decontamination procedures.	(p)(8)(ii)(G)	Section II 4
Emergency medical treatment and first aid.	(p)(8)(ii)(H)	Section II 2b.3
Emergency alerting and response procedures.	(p)(8)(ii)(I)	Section II 2
Critique of response and follow-up.	(p)(8)(ii)(J)	Annex 6
PPE and emergency equipment.	(p)(8)(ii)(K)	Section II 3a
Emergency Planning	**1910.120(q)(2)**	
Coordination	(q)(2)(i)	Section II 2
Lines of authority	(q)(2)(ii)	Annex 3
Emergency recognition	(q)(2)(iii)	Section II
Safe distances	(q)(2)(iv)	Section II 2b
Security and control	(q)(2)(v)	Section II 3b
Evacuation	(q)(2)(vi)	Section II 2a.3
Decontamination	(q)(2)(vii)	Section II 2b
Medical treatment	(q)(2)(viii)	Section II 2b.3
Alerting and response	(q)(2)(ix)	Section II 1, 2
Critique of response	(q)(2)(x)	Annex 6
PPE and equipment	(q)(2)(xi)	Section II 3a
Incident Command	**1910.120(q)(3)**	
Senior officer	(q)(3)(i)	Annex 3
Size up of conditions	(q)(3)(ii)	Section II 1
Emergency operations	(q)(3)(iii)	Section II

Use of SCBA	(q)(3)(iv)	Section II 1
Limiting access	(q)(3)(v)	Section II 3b
Back-up personnel	(q)(3)(vi)	Annex 3
Safety official	(q)(3)(vii)	Annex 3
Safety authority	(q)(3)(viii)	Annex 3
Decontamination	(q)(3)(ix)	Section II 2b
SCBA	(q)(3)(x)	Section II 1
OSHA Emergency Action Plans	**29 CFR 1910.38**	
Reporting an emergency	(c)(1)	Section II 2a
Emergency evacuation, including exit routes	(c)(2)	Section II 2a.2 Annex 1a
Critical operations procedures before evacuation	(c)(3)	Section II 2
Accounting for employees after evacuation	(c)(4)	Section II 2a.3
Procedures for employees performing rescue or medical duties	(c)(5)	Section II 2b.3
Contacts for further information	(c)(6)	Section II 2a.1
Alarm system	(d)	Section II 2a.2
Training	(e)	Annex 5
Review of ERP	(f)	Annex 6

Annex 9. Document Control

a. Plan Distribution

This document is the property of the Williams Production RMT Company (WPC). Controlled copies shall be distributed at a minimum to the WPC personnel in Section II 2 a.1 and to various government agencies for the response coordination. All recipients of this Plan must complete and return the Receipt Form (See below) to WPC. This action is necessary to acknowledge receipt of the Plan and to register the document for future updates and change distributions.

b. Registration Form

All Recipients of the Plan must complete and return this form to register it for distribution and future change/updates.

If this form is not returned, the copy of the Plan will be recalled.

This is to acknowledge receipt of the Williams Parachute Creek Emergency Response Plan:

Name:_____

Company:_____

Division:_____

Street / P.O. Box No.: _____

Zip Code:_____

Return To:
Williams Production RMT Company
Safety Representative
1058 County RD #215
Parachute, CO 81635

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 16- Traffic Impact 9.07.04 (15).

The pipe materials will be stored at the Parachute NGL Storage facility laydown area.

This staging area has access to Garfield County Road #215 at the Williams Production RMT Co.- Parachute Creek Gas Plant entrance to Garfield County Road #215 located at 4289 County Road #215.

It is anticipated that all of the pipe will be hauled North of this area over the construction right-of-way and via Garfield County Road #215 to its point of installation.

A. We are anticipating the following traffic for pipeline and the NGL Storage facility construction:

Parachute Creek Gas Plant Staging Area: Personal vehicle trips per day- 70
Parachute Creek Gas Plant Staging Area: Truck trips per day- 12
All of these trips access Garfield County Road #215.

Mile Marker 4 (Garden Gulch Road) staging area: Personal vehicle trips per day- 5
Mile Marker 4 staging area: Truck trips per day- 1
All of these trips access Garfield County Road #215.

Mile Marker 6.5 (Grand Valley Gas Plant) staging area: Personal vehicle trips per day- 5
Mile Marker 6.5 staging area: Truck trips per day- 1
All of these trips access Garfield County Road #215.

Mile Marker 7.2 staging area: Personal vehicle trips per day- 5
Mile Marker 7.2 staging are: Truck trips per day- 1
All of these trips access Garfield County Road #215.

Pipeline construction company employees will drive their personal vehicles to the staging area and will then be transported down the right-of-way to the pipeline installation location.

Each piece of heavy equipment will be hauled to the nearest crossroad to the pipeline right-of-way work area.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 17- Staging Areas 9.07.04 (16).

The primary staging area for this project will be the Parachute NGL Storage facility laydown area.

This staging area has access to Garfield County Road #215 at the Williams Production RMT Co.- Parachute Creek Gas Plant entrance to Garfield County Road #215 located at 4289 County Road #215.

There will be staging areas at mile marker 4 (Garden Gulch Road) and the mile marker 6.5 (Grand Valley Gas Plant).

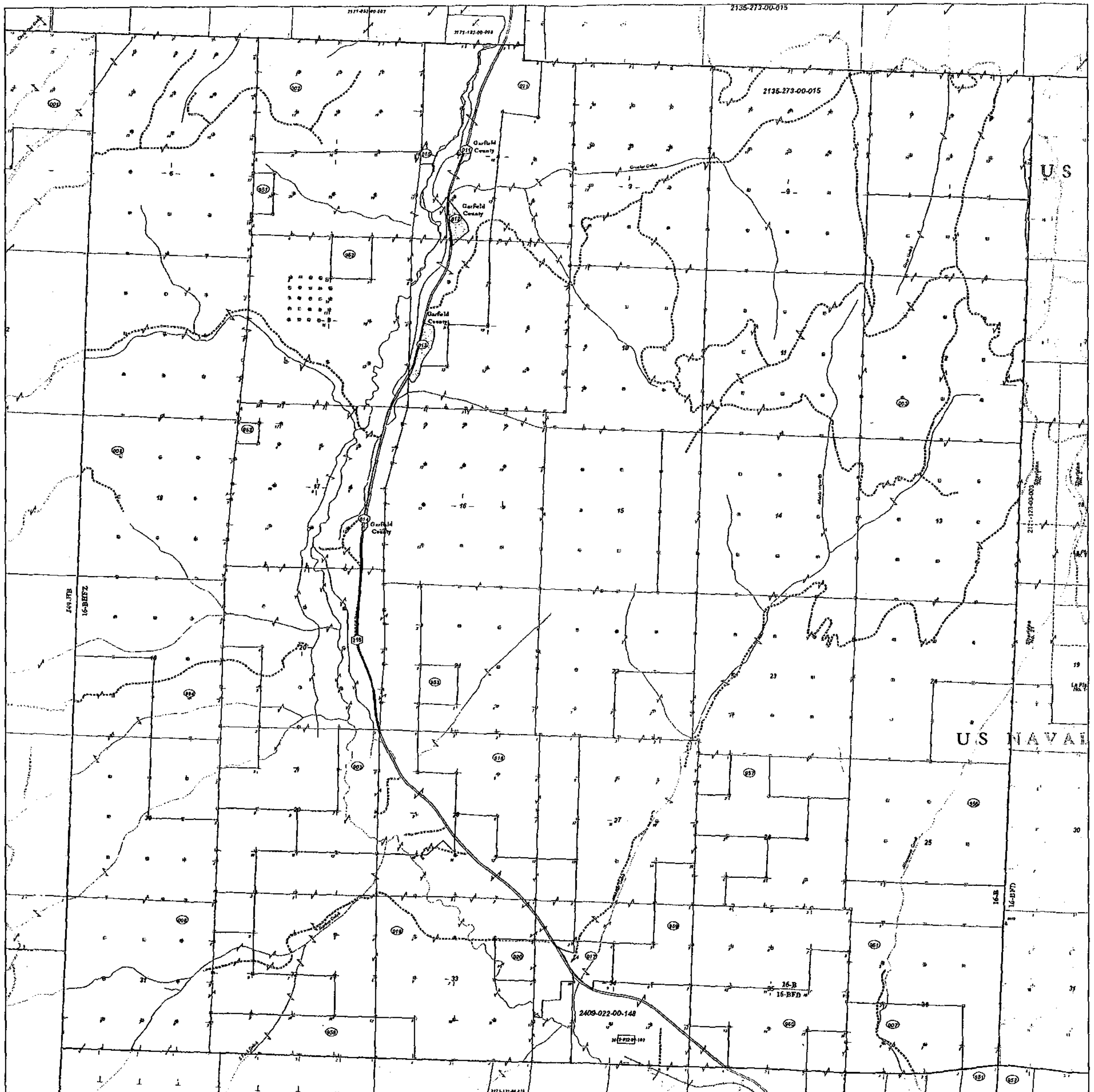
A secondary, smaller staging area is located at mile marker 7.2 and is located at the end of the pipeline and is accessed from County Road #215.

It is anticipated that all of the pipe will be hauled North of this area over the construction right-of-way and via Garfield County Road #215 to its point of installation.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI



Garfield County, Colorado

Assessor's Office

109 8th Street, Suite 207, Glenwood Springs, CO 81601
970-945-9134 www.garfield-county.com

Legend

- Tax Exempt
- BLM
- US Forest Service
- Subdivision
- Tax District Boundary
- State, Federal Highway
- Interstate 70
- County Road
- Private Road, Trail
- BLM GCDB Coordinates

BASE MAP SOURCE:

1. County Road centerline GPS data, Garfield County IT Department, ([illegible], revised [illegible]).
2. USGS 7.5' Quadrangle Maps digitized by Garfield County IT Department ([illegible]).
3. Colorado Department of Transportation highway centerlines, GIS data, ([illegible]).

PARCEL MAP SOURCE:

1. Garfield County Assessor's Office Parcel Map Series, AutoCAD 14 maps, converted to GIS Geodatabase format.
2. Following acceptance of this map by the Assessor, all subsequent parcel changes shall be input from digital CAD drawings submitted by a certified engineer or shall be digitized by the IT Department from the legal description by means of coordinate geometry.

DISCLAIMER:

Township Locator Map

2171

Township 6 South
Range 96 West

Projection: UTM Zone 13 NAD27

1 inch equals 2,083 feet

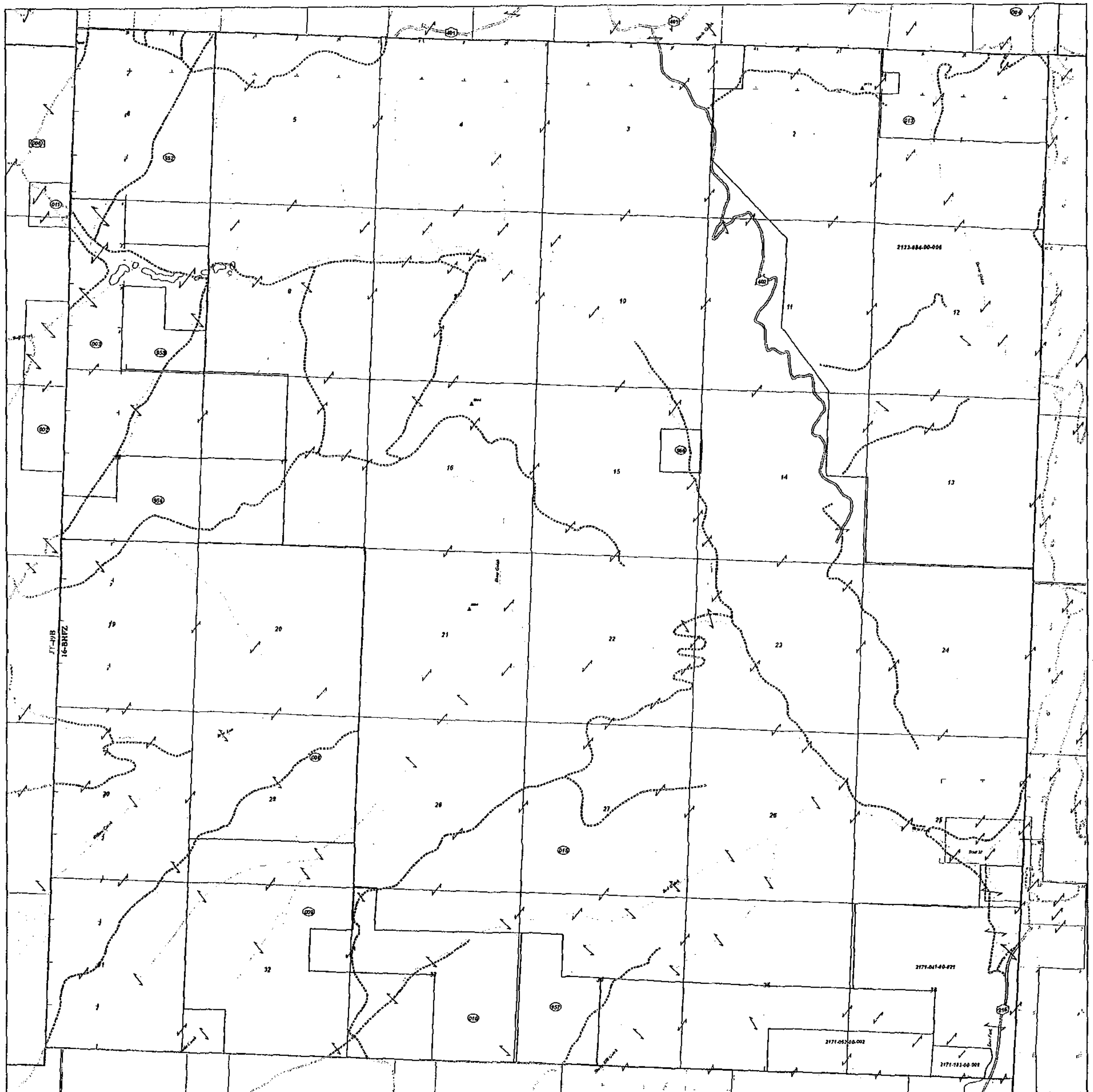
1:25,000

This ArcGIS 9 map was produced by

Garfield County

IT Department

F:\Assessor\ParcelMaps\2171 Revision 1: 4-8-2006



Garfield County, Colorado

Office of the Assessor

109 8th Street, Suite 207, Glenwood Springs, CO 81601
970-945-9134 www.garfield-county.com

Legend

- Tax Exempt
- BLM
- US Forest Service
- Subdivision
- Tax District Boundary
- State, Federal Highway
- Interstate 70
- County Road
- Private Road, Trail
- Meander-, Govt. Lot-, Former Lot Lines
- BLM GCDB Survey Coordinates

BASE MAP SOURCE:

1. County Road centerline GPS data, Garfield County IT Department, (2002, revised 2006).
2. USGS 7.5' Quadrangle Maps digitized by Garfield County IT Department ([illegible]).
3. Colorado Department of Transportation highway centerlines, GIS data, ([illegible]).

PARCEL MAP SOURCE:

1. Garfield County Assessor's Office Parcel Map Series, AutoCAD 14 maps, converted to GIS Geodatabase format ([illegible]).
2. Following acceptance of this map by the Assessor, all subsequent parcel changes shall be input from digital CAD drawings submitted by a certified engineer or shall be digitized by the IT Department from the legal description by means of coordinate geometry.

DISCLAIMER

This map was produced by Garfield County IT Department utilizing the ArcInfo Geographic Information System (GIS). [illegible]

[illegible]

Township Locator Map

2135

Township 5 South
Range 96 West

Projection: UTM Zone 13 NAD 27

1 inch equals 1,500 feet
1:18,000

This ArcGIS 9 map was produced by

Garfield County

IT Department
[illegible]
Glenwood Springs, CO 81601
[illegible]

[illegible]\Assessor\ParcelMaps\2135 Revision 1: 4-7-2006

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 19- Garfield County Assessor's Maps 9.07.05 (2).

Please find attached the following Garfield County Assessor Maps that start from Mile Post 0 at the Parachute Creek Gas Plant and extends to Mile Post 7.2.

1. Map 2171
2. Map 2135

These maps are provided as per the Garfield County development code.

A clearer representation of the alignment and property owners can be found in Submittal Item Tab 2- Vicinity Map 9.07.04 (1). These alignment sheets have all of assessor parcel number for the property that the pipeline will be constructed through and the adjacent parcels.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 20- Listing of Adjacent Property Owners adjacent to or within 200 feet of the proposed right-of-way 9.07.05 (2).

The following is a list of landowners adjacent to or within 200' of the proposed right-of-way for the Parachute Greasewood Express Pipeline.

Private landowners are identified by Assessor's Parcel Number and public lands are listed by address. This information is accurate as of May 29, 2007.

Garfield County planning staff has made a determination that only surface owners are to be identified and notified regarding the proposed right-of-way.

1. **Parcel #2171-332-00-019**

   Williams Production RMT Company
   c/o Logan & Firmine
   3615 S Huron St, Ste 200
   Englewood, CO 80110

2. **Parcel #2171-291-00-005**

   Puckett Land Company
   5460 S Quebec St Ste 250
   Greenwood Vlg, CO 80111-1917

3. **Parcel #2171-182-00-008**

   Chevron USA Inc.
   c/o Chevron Texaco Property Tax
   PO Box 285
   Houston, TX 77001

4. Parcel #2171-041-00-021

EnCana Oil & Gas (USA) Inc.
c/o Logan & Firmine
3615 S. Huron Street, Suite 200
Englewood, CO 80110

5. Garfield County Road #215

c/o Garfield County Road & Bridge
P.O. Box 426
Rifle, CO 81650

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

One Williams Center, WRC3-9
Tulsa, OK 74172-0172

May 29, 2007

Mr. Fred Jarman
Director
Garfield County Building and
Planning Department
108 8th Street, 4th floor
Glenwood Springs, CO 81601

Dear Mr. Jarman,

By this letter Williams Field Services Company, LLC authorizes PVCMI- Land Planning Division to represent us in any and all matters related to the Development Plan Review for Right-of-Way application for the Parachute Greasewood Express Pipeline and the associated Parachute Natural Gas Liquids Storage Facility.

This includes the preparation and submission of documents associated with the land use application and representation of this application before the applicable appointed and elected boards.

Sincerely,

Michael Gettel
Senior Engineering Project Manager
Williams Field Services Company, LLC

EXPLORATION & PRODUCTION
Williams Production RMT Company
Tower 3, Suite 1000
1515 Arapahoe Street
Denver, CO 80202
303/572-3900 main
303/629-8281 fax

May 29, 2007

Mr. Fred Jarman
Director
Garfield County Building and
Planning Department
108 8th Street, 4th floor
Glenwood Springs, CO 81601

Dear Mr. Jarman:

By this letter Bargath, Inc. authorizes PVCMI- Land Planning Division to represent us in any and all matters related to the Development Plan Review for Right-of-Way application for the Parachute Greasewood Express Pipeline and the associated Parachute Natural Gas Liquids Storage Facility.

This includes the preparation and submission of documents associated with the land use application and representation of this application before the applicable appointed and elected boards.

Sincerely,

Joseph P. Barrett
Assistant Secretary
Bargath, Inc.

Corporate Data Sheet Report

As of 2/6/2003

Williams Production RMT Company

Joseph P. Barrett	Assistant Secretary	8/2/2001	8/2/2001	8/1/2002
Tom B. Black	Assistant Secretary	8/2/2001	8/2/2001	8/1/2002
Suzanne H. Costin	Assistant Secretary	11/21/2002	11/21/2002	11/21/2002
Craig L. Rainey	Assistant Secretary	8/2/2001	8/2/2001	8/1/2002
Patti B. Rives	Assistant Secretary	8/2/2001	8/2/2001	8/1/2002
Deborah Viehdorfer	Assistant Secretary	8/2/2001	8/2/2001	8/1/2002

Securities

Equity

Common Stock

Date First Authorized:	5/4/2001	Date Cancelled:	
Date First Issued:	5/4/2001	Par Value:	
Authorized Capital:		# Authorized:	1,000
Exchange Listing:		# Outstanding:	1,000
Transfer Agent:		# Issued:	1,000
CUSIP:		# in Treasury:	
Symbol:		# Cancelled:	
Comment:			

Current Owner(s)	Certificate No.	% Ownership	# Units	Date Issued or Transferred
Williams Production Holdings LLC	3	100%	1,000.00	7/30/2002
Beneficial Ownership:				
Value of Consideration:				
Consideration:				
Comments:				

Former Owner(s)	Certificate No.	% Ownership	# Units	Date Issued or Transferred	Surrender Date
The Williams Companies, Inc.	2	100%	1,000.00	8/2/2001	7/30/2002
Beneficial Ownership:					
Value of Consideration: $1,000.00					
Consideration:					
Comments:					

Direct Subsidiaries

	Registered in	%Ownership	Units Held
Bargath Inc.	Colorado	100.000 %	1,000
Barrett 1997 Trust	Delaware	1.000 %	
Barrett Fuels Corporation	Delaware	100.000 %	100
Barrett Resources International Corporation	Delaware	100.000 %	1,000

Corporate Data Sheet Report

As of 2/6/2003

Williams Production RMT Company

Bison Royalty LLC	Delaware	100.000 %	
Piceance Production Holdings LLC	Delaware	50.000 %	
Plains Petroleum Gathering Company	Delaware	100.000 %	10,000
Rulison Gas Company, LLC	Colorado	100.000 %	
Rulison Production Company LLC	Delaware	100.000 %	

Direct Owners

	Registered In	%Ownership	Units Held
Williams Production Holdings LLC	Delaware	100.000 %	

Registrations

		Charter No.	Tax ID No.	Date	End Date	Duration
Colorado	Qualification			7/16/2001		Perpetual
	Agent: The Corporation Company					
	Comments: Resources Acquisition Corp. qualified 7/16/2001. Qualification was amended in the name of Williams Production RMT Company on 8/14/2001.					
Delaware	Incorporation			5/4/2001		
	Agent: The Corporation Trust Company					
	Comments:					
Kansas	Qualification			7/18/2001		
	Agent: The Corporation Company, Inc.					
	Comments:					
Louisiana	Qualification			8/13/2001		
	Agent: C T Corporation System					
	Comments:					
Montana	Qualification			8/29/2001		
	Agent: C T Corporation System					
	Comments:					
New Mexico	Qualification			12/11/2001		
	Agent: C T Corporation System					
	Comments:					
North Dakota	Qualification			8/1/2002		
	Agent: C T Corporation System					
	Comments:					
Oklahoma	Qualification			8/17/2001		
	Agent: The Corporation Company					
	Comments:					
Texas	Qualification			8/13/2001		
	Agent: C T Corporation System					
	Comments:					
Utah	Qualification			8/15/2001		

Corporate Data Sheet Report

As of 2/6/2009

Williams Production RMT Company

Agent: C T Corporation System

Comments:

Wyoming	Qualification	7/23/2001	Perpetual

Agent: C T Corporation System

Comments: Resources Acquisition Corp. was qualified on 7/23/2001. Qualification was amended in the name of Williams Production RMT Company on 8/14/2001.

History

2/28/2001	Merged	Merger

On February 28, 2001 Plains Petroleum Company, a Delaware corporation, Plains Petroleum Operating Company, a Delaware corporation, merged with and into Barrett Resources Corporation.

8/2/2001	Other	Name Change

Name changed from Resources Acquisition Corp. to Williams Production RMT Company

8/2/2001	Merged	Merger

Barrett Resources Corporation merged with and into Resources Acquisition Corp. under the name of Williams Production RMT Company.

Corporate Data Sheet Report

As of 1/17/2005

Bargath Inc.

Incorporation:	Colorado (6/30/1986)		
Status:	Current	**Phone #:**	
Entity Type:	Corporation	**Fax #:**	
Federal ID #:	84-1032091	**Internal #:**	
Corporate Comment:	This entity cannot be dissolved due to a restriction in the Williams Production RMT Company Credit Agreement with Lehman.		
Tax Year End:		**Employees:**	No
Fiscal Year End:			
Annual Meeting Date:			
Canadian Entity - Federal	False		
Canadian Entity - Provincial	False		

Primary Address

One Williams Center
Tulsa, Oklahoma 74172 (United States)

Bylaws Information

Purpose of Business:
Location of Minute Books:
Location of Seal:

Directors

Currently Authorized: **Minimum:** **Maximum:** **Quorum:** **Classes:**

	Title	Effective	First Elected	Last Elected
Ralph A. Hill	Director	8/2/2001	8/2/2001	8/2/2001
Steven J. Malcolm	Director	8/2/2001	8/2/2001	8/2/2001

Officers

	Title	Effective	First Elected	Last Elected
Ralph A. Hill	Senior Vice President	8/2/2001	8/2/2001	8/2/2001
Neal A. Buck	Vice President	8/2/2001	8/2/2001	8/2/2001
Bryan K. Guderian	Vice President	8/2/2001	8/2/2001	8/2/2001
Mark W. Husband	Vice President	8/2/2001	8/2/2001	8/2/2001
Joseph N. Jaggers III	Vice President	8/2/2001	8/2/2001	8/2/2001
Travis N. Campbell	Treasurer	11/20/2003	11/20/2003	11/20/2003
Brian K. Shore	Secretary	11/21/2002	11/21/2002	11/21/2002
Joseph P. Barrett	Assistant Secretary	8/2/2001	8/2/2001	8/2/2001
Tom E. Black	Assistant Secretary	8/2/2001	8/2/2001	8/2/2001
Landy L. Pullmer	Controller & Assistant Treasurer	8/2/2001	8/2/2001	8/2/2001
Craig L. Rainey	Assistant Secretary	8/2/2001	8/2/2001	8/2/2001
Patti E. Rives	Assistant Secretary	8/2/2001	8/2/2001	8/2/2001

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 22- Construction Management Plan

Please find attached the following documents that comprise the Construction Management Plan for the project:

1. Construction Management Plan- D.R. Griffin & Associates, Inc.
2. Addendum to Construction Management plan- PVCMI
3. Parachute NGL Storage Facility Stormwater Management Plan and CDPS application dated May 2007
4. Parachute Greasewood Express Stormwater Management Plan and CDPS application dated May 2007

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

CONSTRUCTION MANAGEMENT PLAN

WILLIAMS FIELD SERVICES COMPANY, LLC
PARACHUTE GREASEWOOD EXPRESS
LIQUIDS PIPELINE

TABLE OF CONTENTS

1. VICINITY MAPS –Right-of-way alignment sheets, legal descriptions and tank battery location.

Alignment Sheets - DRG has prepared pipeline alignment sheets with an overall size of 24" x 36" with aerial photography background. The plan scale of the alignment sheets shall be 1" = 500'. Three sheets are needed for the project length. Station distances reported on pipeline alignment sheets shall be in standard survey horizontal units of measure according to the survey datum selected for project work.

Alignment sheets show the following information in horizontal bands, information boxes and title blocks in customary manner for this type of drawing:

- Proposed natural gas liquid pipeline centerline and PI's;
- Project access roads;
- Permanent ROW, construction ROW, extra workspace, staging areas and similar locations;
- Landowners name with distance in feet and miles along right-of-way;
- Utility crossings and parallel alignments, (including fences);
- Highway, county road, field access and 2-track crossings;
- Wash, stream, canal and river crossings;
- Environmentally sensitive areas (wetland boundaries, cultural resource sites, wildlife restrictions, etc.) when identified by WFS's environmental consultant.
- Pipeline schematic and material summary to include:
    - Major line valves, fab assemblies and fittings
    - Pipe materials: OD WT Grade Coatings
    - PI deflections

- PI side bend, sag bend and over bend locations requiring hot bends or field fittings
- Foreign pipeline and cable crossings
- Adjacent pipeline and cable parallel offsets
- Pipe anchors
- Cathodic test leads

Project Alignment Sheets are:

Drawing DRG-PAS01-15116 Station 0+00 to Station 140+00
Drawing DRG-PAS02-15116 Station 140+00 to Station 272+00
Drawing DRG-PAS03-15116 Station 272+00 to Station 379+74

ROW Plats/Legal Descriptions - The survey information collected by DRG is source for development of right-of-way acquisition parcel maps and legal descriptions. Drawings for right-of-way acquisition for parcels crossed by the pipeline will be prepared on legal size pages. Legal descriptions of the right-of-way for each parcel crossed will be incorporated onto the ROW plats.

Project ROW plats have been developed for four private landowners:

Williams Production RMT	Station 0+00 to Station 46+15.3
Puckett Land Company	Station 46+15.3 to Station 63+25.1
Chevron USA, Inc.	Station 63+25.1 to Station 348+66.6
Encana Oil & Gas (USA)	Station 348+66.6 to Station 379+74.1

Tank Battery Layout - Please refer to attached plan, latest revsion.

2. OWNERSHIP – Adjacent properties to proposed right-of-way within 350 feet of any area to be disturbed are noted on the pipeline alignment sheets plan view. Adjacent property owners are the same as described in ROW Plats/Legal Descriptions above.

3. PROJECT FACILITIES – The project consists of approximately 37,974 feet or 7.2 miles of new liquids pipeline connecting the proposed tank battery near the Williams Gas Plant No. 3 in Section 33, T6S, R96W with an existing Williams pipeline in Section 36, T5S, R96W.

The portion of the pipeline extending from the proposed tank battery to the Williams Grand Valley Gas Plant will consist of approximately 34,363 feet or 6.5 miles of 6" line. A 6' launcher for either pigs or internal inspection tools will be

installed at the tank battery and a 6" receiver will be installed at the Grand Valley Gas Plant.

The portion of the pipeline extending from the Williams Grand Valley Gas Plant to the existing Williams pipeline will consist of approximately 3,611 feet or 0.68 miles of 8" line. An 8' launcher for either pigs or internal inspection tools will be installed at the Grand Valley Gas Plant. An 8" receiver will be installed at the end of the existing Williams line approximately 26 miles from the Grand Valley Gas Plant.

4. STAGING AREAS –Staging areas beyond the 75 foot temporary construction work space will be needed at select locations along the pipeline routes. These areas are needed for fabricated facility installation sites, equipment and material storage locations, at the begin and end of the pipeline and at major points of project access. Staging areas described on the pipeline alignment sheets include area at the beginning of the line at the proposed tank battery, an area near the Garden Gulch access road, inside of the Grand Valley Gas Plant yard, and at the end of the line near the existing Williams pipeline.

5. GARFIELD COUNTY ASSESSOR MAPS – The following Garfield County Assessor Maps were used in this project.

Map 2171 Township 6 South Range 96 West
Map 2133 Township 5 South Range 95 West
Map 2135 Township 5 South Range 96 West

6. LISTING OF ADJACENT PROPERTY OWNERS – Adjacent properties to or within 200 feet of the proposed right-of-way are noted on the pipeline alignment sheets plan view. Adjacent property owners are the same as described in ROW Plats/Legal Descriptions above.

7. CONSTRUCTION MANAGEMENT PLAN

Construction Schedule, Manpower and Equipment - Construction will begin upon the receipt of the necessary agency approvals and permits, acquisition of ROW grants from affected landowners, delivery of sufficient quantities of line pipe and other materials to start the work and retention of a qualified, available and economically viable contractor to perform the work. Estimated milestone dates for construction schedule events are as follows:

Event Description	Milestone Date
Contractor solicitation/job showing:	June 14, 2007
Receive final agency approvals and permits:	August 3, 2007
Award pipeline construction contract:	July 20, 2007
Receive start-up quantities of line pipe:	July 9, 2007
Receive start-up quantities of equipment & materials:	July 9, 2007
Commence pipeline construction:	August 13, 2007
Pipeline construction substantial completion (facilities ready for operation):	October 15, 2007
Purge, pack and commissioning of pipeline service:	November 13, 2007
ROW clean-up, restoration and mitigation work complete:	October 19, 2007
Reseeding complete:	October 31, 2007
Project close out and completion:	December 1, 2007

The number and types or personnel, vehicles and equipment employed for project construction will increase from a minimum at the beginning of the work, to a maximum about three weeks after start, stay more or less at this peak level until about three weeks from the end of the work and then decrease to a minimum. At the peak level of personnel staffing and equipment deployment, the following types and approximate numbers can be expected:

Description		Quantity (Each)
Personnel		
	Surveyors	2
	Construction Manager	1
	Construction Engineer	1
	Chief Inspector	1
	Inspector/Management Clerical	1
	Inspectors	6
	X-ray Technicians	4
	Construction Supervisor	1
	Assistant supervisor	1
	Contractor clerical	1
	Foremen	2
	Equipment Operators	4
	Welders	4
	Welder Assistants	4
	Laborers	10

	Truck Drivers	3
	TOTAL	46
Vehicles & Equipment		
	4x4 Pickup & personal cars	20
	Dozers	1
	Patrol Graders	1
	Brush Hog	1
	Side Booms	2
	Welder Trucks	4
	Trucks & Flat Bed Trailer	2
	Stringing Trucks	2
	Flatbed Trucks	2
	Trenching Machine	1
	Track Backhoes	1
	Wheel Backhoes	1
	Pipe Bending Machine	1
	Dump Truck	1
	X-ray Van	2
	Air Compressors	2
	Water Pumps Dewatering	4
	Water Pumps Pressure Test	2
	Side Cast Seeder	1
	Drill Seeder	1
	Office Trailer	1
	Equipment Trailer	2
	Portable Toilets	4

Personnel and equipment required for a project of this size, type and nature exist in adequate quantities in the regional area. The equipment and personnel will be staged and lodged in nearby locations to include but not limited to Parachute, Rifle, Meeker, Glenwood Springs, De Beque, Grand Junction and points in between. Pipe storage yards, equipment and materials warehousing, contractor yards and other project use areas will be a pre-existing locations owned by WPRMT or other industrial or commercial concerns.

Project Survey And Pre-construction Staking - Prior to the construction of the proposed project, numerous pre-construction activities will be completed. These activities include, but are not necessarily limited to, land surveying, selection of final pipeline alignment and facility locations, coordination with land owners and other affected interests, coordination with users of existing utility corridors, procurement of ROW, acquisition of permits, finalization of engineering design, procurement of materials, and selection of construction contractors. Additional surveys will be conducted for construction staking purposes. Permission will be obtained, as necessary, prior to entering a property to conduct a survey.

Pre-construction staking designates the centerline and outside ROW boundaries. These and the extra construction widths will be staked and flagged at 200-foot

nominal intervals or at other appropriate spacing required by conditions. Known existing utility locations will be flagged where the pipeline parallels or crosses existing utility corridors to avoid damage and disturbance. Additional staking will be provided as needed at meter stations, pigging facilities, side valves and other appurtenant facilities. The limits for all construction staging areas and the location of access road entry points will be suitably staked and flagged.

Project Drawings, Engineering Specifications And Standards - Project drawings to be prepared for the work will include the following:

- Pipeline alignment sheets
- Mechanical flow diagram
- Fabrication drawings
- Crossing and permit drawings
- Construction and environmental detail sheets
- Other special detail drawings as needed.

Documents to describe and detail the work will include the following:

- Pipeline Construction Contract
- Information and Notice To Bidders
- Attachment A – Specification for Pipeline Construction
- Attachment B – Supplemental Specification for Pipeline Construction including Project Description, Scope Of Work And Special Provisions.
- Attachment C – Materials Provided by Owner
- Attachment D – Contract Price Schedule
- Attachment D-1 Contract Price Schedule Description including payment item description and exclusions, basis of payment and method of measurement.

The controlling standards for the design and construction of the work will be the U.S. Department of Transportation Pipeline Safety Regulations 49 CFR 195 Transportation of Hazardous Liquids by Pipeline: Minimum Federal Safety Standards. Where 49 CFR 195 does not address particular design, construction or operation requirements necessary for the work, the provisions of American Society of Mechanical Engineers ASME Code B31.4 Pipeline Transportation Systems For Liquid Hydrocarbons and Other Liquids will be incorporated into the work. Other applicable codes, regulations and standards will be applied to the work when referenced by the controlling 49 CFR 195 regulation and ASME B31.4 Code and as otherwise determined by the normal and customary standard of practice for this type and nature of work.

The provisions of any permit or license issued by controlling agencies providing a required approval for the project will also be considered a controlling standard for the project.

Clearing And Grading - Vegetation will be cleared and the construction ROW graded to provide for safe and efficient operation of construction equipment and to provide space for temporary storage of spoil material and salvaged topsoil. In general, the width of the ROW clearings will be kept to a practical minimum to avoid undue disturbance. Brush clearing will be limited to trimming and/or crushing to avoid disturbance of root systems. All brush and other materials that are cleared will be windrowed along the ROW. Where necessary, all brush and other debris cleared will be disposed of in accordance with instructions from the jurisdictional agency or landowner and all applicable laws and regulations. Topsoil removed during the clearing and grading operations will be segregated from subsoils. At a minimum, the first 6-inches of surface soil would typically be separated. These topsoils will be preserved for subsequent restoration activities on the ROW.

Three approaches to topsoil removal are provided in this project. These include: 1) full ROW width topsoil removal; 2) trench and spoil area only topsoil removal and 3) blade width only topsoil removal. ROW section details of these topsoil removal methods are provided in the project Construction and Environmental Detail Drawings. The method of topsoil removal to be utilized on the project may vary from location to location. This will depend upon landowner desires, government agency stipulations, conditions encountered on the ground during construction, advisement of any soil & reclamation specialist employed or involved on the work, and the preferences and requirements of the contractor in regard to his adopted plan for successful clearing, grading, restoration, reseeding and reclamation of the project.

Grading of the construction area will be performed in order to create a suitable work surface for construction vehicles and heavy equipment. On flat to mildly or moderately sloping terrain, a uniform work surface will be graded across the entire ROW. A bi-level work surface may be necessary in more sloped areas. ROW section details for side hill bi-level construction are shown in the project Construction and Environmental Detail Drawings. Side hill cuts will be kept to a minimum to ensure resource protection and a safe, stable surface for heavy equipment use.

When required by controlling agency or the landowner, construction activities will not be conducted during conditions when the soil on the ROW or access roads are too wet to adequately support construction equipment. In such instances and where construction equipment creates excessively deep ruts, construction activities will be discontinued until soil conditions improve.

All survey monuments located within the ROW will be protected during construction activities. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral survey corners, reference corners, witness points, U.S. Coastal and Geodetic Survey benchmarks and triangulation stations, military control monuments, and recognizable civil survey monuments. In the event of obliteration or disturbance of any of the above, the incident will be duly reported. Where such monuments are obliterated during construction, the services of a registered land surveyor will be employed to restore the monuments in accordance with established procedures. Each such survey would be duly recorded with the appropriate county and other jurisdictional agencies.

Trenching - Pipeline burial depths will be in conformance with the requirements of 49 CFR 195 Pipeline Safety Regulations. Occasionally, the ditch will be excavated to depths greater than the general values specified. Such instances include where the ditch will be excavated to pass beneath railroads, roads, streams, drainages and other obstructions.

As a minimum, the ditch will be excavated to a depth to allow a clearance of 24 inches between the project pipeline and other pipelines or underground facilities. Machine excavation will not be performed closer than 5 feet from any existing pipeline, communications cable or other such buried facility encountered in the ROW. Existing pipeline locations will be marked in the field and 48-hour prior notification given to the pipeline or other underground utility operator.

Construction methods employed to excavate a trench will vary depending on soils, terrain, and related factors. Self-propelled trenching machines will be used where possible. Conventional mechanical backhoes will be used on steep slope areas, unstable soils, high water table, and where deep or wide trenches are required. Where rock or rock formations are encountered, tractor-mounted mechanical rippers or rock trenching equipment may be used to facilitate excavation. In areas where rippers or trenchers are not practical or sufficient, blasting may be employed. Strict safety precautions will be taken when blasting. Backhoes will then be used to clean the ditch after ripping or blasting.

Unless otherwise required and agreed upon, pipeline crossings of non-surfaced, gravel, lightly traveled, and rural roads will be made using open trench "cut and cover" methods with mechanical ditching machine or backhoe. Installation at these locations, including cleanup and restoration of road surfaces, will usually be completed within one day. Provisions will be made to detour or control passage of traffic during the construction.

Boring & Drilling – Not applicable.

Pipe installation - Pipe will be shipped directly from a manufacturer or supplier by rail and truck to offsite storage sites and then be hauled by truck to the pipeline ROW. Each individual joint of pipe will be unloaded by cranes or tractors equipped with side booms and slings, and strung parallel to the ditch. Sufficient pipe for road crossings will be stockpiled at staging areas near the crossing. Stringing operations will be coordinated with trenching and installation activities in order to properly manage the construction time at a particular tract of land. Gaps will be left at access points across the ditch to allow crossing of the ROW. As construction proceeds, some of the pipe and stringing equipment will be temporarily stored at approved staging and extra workspace areas along the ROW.

After the joints of pipe are strung along the ditch but before the joints are welded together, individual joints of the pipe will be bent to accommodate horizontal or vertical changes in direction. Such bends will be made utilizing an approved cold, smooth bending machine having a hydraulically operated shoe that makes the bend. Where the deflection of a bend exceeds the allowable design limits for field-bent pipe, shop fabricated pieces (induction or "hot bends") or trimmed segmentable forged fittings will be installed.

After the pipe joints are bent, the pipe is lined up end-to-end and clamped into position. The pipeline will then be welded in conformance with 49 CFR Part 195, Subpart D, "Construction" and API 1104, "Standard for Welding Pipelines and Related Facilities," latest edition. Welds will be visually inspected by a qualified inspector and will be subject to radiographic inspection in conformance with DOT requirements. A specialized contractor certified to perform radiographic inspection will be employed to perform this work. Any defects will be repaired or removed as required under the specified regulations and standards.

Project specifications will require that the pipe be externally coated with fusion bonded epoxy coating prior to delivery. After welding, field joints will be coated with either a tape wrap or shrinkable sleeve wrap. Before the pipe is lowered into the ditch, the pipeline coating will be visually and electronically inspected and any detected faults or scratches will be repaired.

Backfilling - Once the pipe coating operation has been completed, the pipeline will be lowered into the ditch. Side-boom tractors will be used to simultaneously lift the pipe, position it over the ditch, and lower it in place. Inspection will be conducted to verify that minimum cover is provided, the trench bottom is free of rocks/debris/etc., external pipe coating is not damaged, and the pipe is properly fitted and installed into the ditch. In rocky areas, padding material or a rock shield will be used to protect the pipe.

Backfilling will begin after the pipeline has been successfully placed in the ditch and final inspection has been completed. Backfilling will be conducted using a bulldozer, rotary auger backfiller, or other suitable equipment. Backfill will generally consist of the material originally excavated. In some cases, backfill material from other areas (borrow material) may be needed. Backfill would be graded and compacted, where necessary for ground stability, by being tamped or walked in with a wheeled or track vehicle. The soils will be replaced in a sequence and density similar to pre-construction conditions. Subsoils will be backfilled first, followed by replacement of stockpiled topsoil. Once the excavation has been filled and compacted, the topsoil would typically be crowned in a berm, 12-inches-high or less, and tapered outward from the center and/or spread uniformly over the disturbed ROW. The material in the berm is intended to compensate for normal settling of backfilled materials. Any excess excavated materials or materials unfit for backfill will be properly disposed of in conformance with applicable laws or regulations, and landowner or jurisdictional agency requirements. Where possible, these surplus materials will be spread out over the ROW to avoid off-site disposal.

Where required by controlling agencies, landowners, other situations and good cause, controlled compacted backfill will be placed at road crossings and other such locations. Backfill material to be placed shall be inspected and determined suitable for use by a qualified person. The backfill shall be placed at a controlled water content range in level uniform layers not exceeding 8-inches compacted thickness. The resulting backfill density shall not be less than 90% maximum density (or higher if prescribed by permit, agency or landowner) as determined by an established AASHTO or ASTM procedure.

Hydrostatic Testing - The entire pipeline will be tested without leakage in compliance with 49 CFR Part 195 Subpart E and company operating procedures. This will be accomplished through pressure test with a water medium. Test pressure will exceed code requirements of 125% Maximum Operating Pressure, and test duration will be a minimum of 8 hours. The pipeline will be tested in variable length segments to account for local topography/pressures. Pressure tests will be conducted in sequence, transferring test water from one segment to another. Hydrostatic test water intake and discharge will be done in conformance with all applicable local, state, and federal requirements. Hydrotest water will be supplied by Williams Production RMT water treatment facilities, and will be disposed of at the same facility. Performance of these operations shall avoid adverse impacts to aquatic, wildlife, and visual resources.

Cleanup and Restoration - Upon completion of backfilling, construction work will commence to clean up, restore, and re-vegetate the ROW. Efforts will have be taken during the prior work to minimize erosion, restore the natural ground

contour, account for trench settling, re-establish plant growth, and allow natural surface drainage. As agreed with the landowner or controlling agencies, all completed construction areas and temporary access roads will be returned as nearly as possible to their original condition and service. All restoration and re-vegetation will be completed to the satisfaction of the landowners, controlling agencies and other recognized parties.

First, any trash, brush, surplus material, or other debris will be cleared from construction areas and disposed of in an appropriate manner. The ROW will then be graded and restored to nearly pre-construction grades. Final restoration of disturbed areas will be accomplished by whatever means are most suited for the particular soils, terrain, vegetation and climate at a specific site. In general, waterbars will be constructed to prevent erosion of unconsolidated soils and provide drainage away from the disturbed area and into existing washes or drainages. Where deemed appropriate, slash will be used to control erosion. Where necessary, terracing or other erosion control techniques may be employed.

Reseeding will be accomplished using seed mix or plant species approved by the landowners or controlling agencies. Seedbed preparation and seeding operations will be conducted in accordance with accepted techniques for the particular area and task. In areas with difficult reclamation problems, restoration and re-vegetation will be considered a special management problem and will be resolved in coordination with the landowner and the respective authorities involved. Advice may be sought from specialty agencies or environmental consultants to fully determine the appropriate mitigation and reclamation measures needed.

Residential Areas And Private Property - The construction ROW will not be located within 50 feet of a place of residence or similar use. Where residential and private property is encountered, the following practices where reasonable, prudent and beneficial will be implemented:

- If the trench is left open overnight within 250 feet of a residence, place of business or similar activity, it will be fenced or barricaded to mitigate safety concerns.
- Owners of private roads along the route will be notified 24 hours in advance of planned road crossings.
- Private road crossings will be completed within three hours and roads will be restored to pre-construction conditions or better.
- Access to and from residences, place of business and similar areas will be maintained at all times unless express authorization to the contrary is obtained for the landowner, lessee or other authorized entity.

- Construction activities, except for hydrostatic testing, will only occur between 7 AM and 6 PM, six days a week (Monday through Saturday).
- No trench within 250 feet of a residence, place of business or similar area will be left open for more than three days.
- If blasting activities are required, matting will be used to prevent damage from flying debris. Landowners, lessees and others will be notified in advance to ensure that all persons, livestock and equipment are out of the danger zone. Where it is determined by a qualified person that there are still identifiable risks in proximity of the work area, blasting will not be used.
- In residential and similar areas, topsoil replacement (topsoil import) may be used as alternate to topsoil segregation.

Livestock Issues - Prior to construction, concerns and issues of landowners, lessees and controlling agencies in regard to pipeline construction and livestock will be solicited and considered. Stipulations, requirements and reasonable requests developed from such inquires will be incorporated in the work. As a minimum, the following will be established for the work:

- Fences crossing the ROW will be braced, cut, and temporarily fitted with gates to permit passage.
- During construction, the openings will be controlled as necessary to prevent the escape of livestock.
- Existing fences will be replaced and braces left in place upon completion of construction activities.
- During construction, no gates or cattle guards on established roads over public or private lands will be obstructed or damaged by construction activities.
- Adequate precautions will be taken to ensure that livestock and wildlife will not be prevented from reaching water sources because of open ditches or pipe strung along the ditch. Such precautions will include contacting livestock operators, providing adequate crossing facilities, or other measures as needed.
- All damaged livestock facilities will be repaired or replaced to a condition as good as or better than the pre-construction condition. The final facilities shall be acceptable to the landowner, lessee or other authorized person. Temporary fences shall be installed if original fences affected by the work do not provide adequate livestock control.
- Temporary fences or other barriers shall be installed if pipeline construction destroys or eliminates natural barriers. Replacement of the natural barrier is desired upon the completion of construction if practical. Permanent fencing or artificial barriers shall be used if the natural barrier cannot be reasonably restored.

Health and Safety - The following health and safety measures shall be made a requirement of the pipeline construction work:

- Special precautions shall be taken when working on pipeline segments parallel to, crossing or near high voltage overhead electric power transmission lines. These precautions shall include:
    - Measuring the pipe-to-ground voltages on pipe sections each day at the commencement of work, prior to work involving pipe contact and when directed by a qualified person.
    - Rubber tired vehicles operating on a common pipeline and powerline ROW area shall be strap grounded to mitigate capacitive coupling. Grounding shall be made using a metal chain or conductive strap connected to the vehicle frame and contacting the ground.
    - Vehicles shall not be refueled on or near a electric powerline ROW.
    - The pipeline contractor shall coordinate with affected utilities to avoid utility disruptions.
- A fire prevention and suppression plan shall be developed and implemented for the work.
- When required, a job specific blasting plan shall be developed and implemented for the work.
- Excluding hydrostatic testing, nighttime construction will not be permitted. Work shall not commence prior to sunrise and work shall cease at sunset. Work in residential, business and similar areas shall be limited to 7 AM to 6 PM, Monday through Saturday.
- No camping will be allowed on the pipeline ROW.
- When required, watering and other means of dust control will be provided. Dust control within 500 feet of residences, public roads and other gathering places will be diligently implemented and maintained. Standards and regulations pertaining to air quality emissions including particles other than dust will be made requirements of the project work.
- Trenches left open overnight and within 250 feet of a residence, office building, commercial or industrial business site or similar area shall be fenced or barricaded to mitigate safety concerns.
- Should a well, spring or water supply facilities be adversely affected by construction, an emergency source of potable water will be provided until mitigation can be completed. Repairs and replacement of affected facilities shall be undertaken upon completion of pipeline work in the immediate area of the damage.
- Dredge or fill material of any amount will not be discharged in or near the proximity of a public water supply intakes or municipal watersheds.

- All equipment used in the work shall be properly equipped and maintained to ensure compliance with applicable health, safety and environmental regulations.

Waste Disposal and Sanitation - The following measures will be implemented and enforced in the performance of the project work:

- Littering of any kind will not be allowed on the ROW. A daily litter-policing program will be employed in the work.
- Construction and operating sites will be maintained in a clean and sanitary condition at all times. Collected wastes will be disposed of promptly at an approved site.
- "Waste" means all discarded matter, including but not limited to, human waste, trash, garbage, refuse, oil and fuel drums, petroleum products, blasting boxes, worn out parts, abandoned equipment, leftover materials, etc.
- Excess or unsuitable materials will be returned to the supplier, sold to a commercial salvage yard, turned in at commercial recycling center or delivered to public or private disposal site approved for project use.
- Special implementation plans prepared for and made part of the work will be maintained and followed for the duration of the work. Such plans may include Hazardous Materials Management Plan, Spill Prevention and Countermeasure Plan and others.
- Portable chemical toilets will be provided and dispersed within the project area. Their number and location will vary with the length of the project, the number of workers present and the work phase of the project. Generally, a portable toilet will be provided at each contractor yard, pipe yard or permanent staging area. Other criteria not withstanding, a portable toilet will be provided for each 40 people or fraction thereof employed on the work.
- Human wastes stored in portable toilets will be removed from the ROW on a regular periodic basis according to the capacity of the units and their monitored usage. Such human waste will be disposed of at an approved location in accordance with applicable laws and regulations.

8. DESIGN SPECIFICATIONS – All work contemplated in this project shall be performed under the supervision and responsible charge of a Colorado professional engineer and a Colorado professional land surveyor. Where required by law or requested by Garfield County, final drawings and project documents will be signed, stamped and dated by the supervising Colorado professional engineer and Colorado professional land surveyor.

The controlling standards for the design and construction of the work will be the U.S. Department of Transportation Pipeline Safety Regulations 49 CFR 195 Transportation of Hazardous Liquids by Pipeline: Minimum Federal Safety Standards.

9. SOIL CONSERVATION, SEDIMENTATION AND EROSION CONTROL PLAN

Please refer to the attached Construction Stormwater Management Plan dated May 2007.

10. HAZARDOUS MATERIALS MANAGEMENT & SPILL PREVENTION

Please see the attached Construction Stormwater Management Plan noted in Section 9 above. The SWMP plan addresses these issues in sections 4.4.2 and 4.4.2.1.

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 22- Addendum to Construction Management Plan prepared by D.R. Griffin & Associates, Inc.

A. Post Construction Operation and Maintenance

Williams Field Services Company, LLC authorized employees will operate, monitor and maintain the pipeline.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

Williams Production RMT Company

Storm Water Management Plan

Parachute Greasewood Express
Natural Gas Liquids Storage Facility

May 2007

Storm Water Management Plan

Parachute Greasewood Express
Natural Gas Liquids Storage Facility

Prepared For:

Williams

Williams Production RMT Company
4289 County Road 215
P.O. Box 370
Parachute, CO 81635

Prepared By:

HRL COMPLIANCE SOLUTIONS, INC.
Environmental Consulting

HRL Compliance Solutions, Inc.
216 North Avenue, Suite 1
Grand Junction, CO 81501

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1.0 INTRODUCTION

The Parachute Greasewood Express Natural Gas Liquids (NGL) Storage Facility Storm Water Management Plan (SWMP) has been written to comply with the Colorado Department of Public Health and Environment's (CDPHE) General Permit No. COR-03000 and related U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) storm water regulations. This SWMP addresses construction activities associated with development of the natural gas resources in the Garfield County area.

The Federal Clean Water Act [Section 402(p)] requires that discharges of pollutants to waters of the United States from any point source be regulated by NPDES permits. In November 1990, the USEPA published final regulations that established application requirements for storm water associated with construction activity for soil disturbances of 5 acres or more be regulated as an industrial activity and covered by an NPDES permit. In December 1999, the USEPA published final Phase II NPDES regulations that established application requirements for storm water associated with construction activity for soil disturbances to be regulated as an industrial activity and covered by an NPDES permit. These regulations became effective July 1, 2002.

Construction permits are required for oil and gas activities that disturb one or more acres during the life of the project or are part of a larger common plan of development. The CDPHE considers a common plan of oil and gas development to mean development of several well pads and/or related infrastructure in a contiguous area either during the same time period or under a consistent plan for long-term development.

This NGL Storage Facility SWMP is intended to be periodically updated as needed to address planned developments, new disturbances, and other changes needed to manage storm water and protect surface water quality.

1.1 Project Owner/Operator

The project landowners (listed by company and last names):

Williams Production RMT Company

The project operator is Williams Production RMT Company.

Address: Williams Production RMT Company
4289 County Road 215
P.O. Box 370
Parachute, CO 81635

The Williams Production RMT Company contact person(s) for the NGL Storage Facility project are Mr. Mike Gardner and Mr. Tom Fiore.

Mr. Tom Fiore
Plant Manger
Williams Companies
Office: (970) 285-9377
Mobile:(970) 210-1641
tom.fiore@williams.com

Mr. Michael Gardner
Storm Water Plan Administrator
Williams Companies
Office:(970) 263-2714
Mobile:(970) 640-1855
Michael.Gardner@Williams.com

Williams Production RMT Company will be in charge of all aspects of this project. Contractor(s) will do the actual construction and grading but all work will be supervised by Williams Production RMT Company and all decisions will be made by Williams Production RMT Company.

2.0 CONSTRUCTION SITE DESCRIPTION

2.1 Site Location

The NGL Storage Facility is located southwest of the confluence of Starkey Gulch and Parachute Creek, within Section 33 of Township 6 South, Range 96 West of the 6th PM, Garfield County, Colorado. The Town of Parachute, Colorado is the nearest population center. Receiving waters include Parachute Creek. The ultimate receiving water is the Colorado River.

2.2 Site Area Characteristics

2.2.1 Runoff Characteristics and Coefficient

Runoff characteristics are based on site topography, soil type, and soil/vegetative cover. Drainage across the pipeline will vary along the length of the pipeline. According to the Natural Resources Conservation Service (NRCS), the soil within the NGL Storage Facility construction site consist of one general soil unit:

- **Arvada Loam (6-20 percent slopes)**: Deep, well drained, moderate sloping to steep soils on fans and high terraces. Permeability is slow, and available water holding capacity is high. Runoff is rapid/very rapid, and the hazard of water erosion is severe.

The native understory vegetation consists of the following shrubs and grasses: western wheatgrass, needle and threat grass, slender wheatgrass, and various bluegrasses. The runoff coefficient value prior to construction will range from 0.30 to 0.56, and will range from 0.17 to 0.30 after construction, until 70% of pre-disturbance ground cover is achieved.(NRCS TR-55).

2.3 CONSTRUCTION SITE CHARACTERISTICS

2.3.1 Construction Site Area Description

The vast majority of ground disturbance will be due to pad clearing and grading. An area of approximately 122,500 ft^2 (2.81 acres) will be cleared and constructed into a pad for the necessary storage equipment. Five NGL storage tanks will be managed at the facility, each tank having a storage capacity of 90,000 gallons.

2.3.2 Schedule of Construction Activities

Construction of the necessary improvements and construction of the NGL Storage Facility is scheduled from August 1, 2007 to TBD. Existing and future disturbances are included in this SWMP. BMPs will be installed prior to, during, and immediately following construction as practicable, with considerations given to construction staging, safety, access, and ground conditions at the time of construction. Soil and aggregate materials will be managed so that erosion and sediment transport are minimized. Nearby drainages and water courses will be protected in all cases by appropriate measures.

2.3.3 Materials Handling, Loading, and Storage Areas

Fuels, pesticides or herbicides, paints or solvents, and other industrial materials associated with construction activities must be handled and stored in a manner as to prevent storm water impacts from occurring. All liquids shall be stored in appropriate containers and properly protected from adverse weather or storm events. By following good housekeeping and best management practices (BMPs), discharges of impacted storm water can be averted. Industrial wastewater shall be properly disposed and not allowed to be discharged to storm water conveyances.

2.3.4 Adjacent Property Descriptions

Surrounding land use is primarily for oil and gas exploration and production and, to a lesser extent, for seasonal livestock grazing, farming, and irrigation pasture.

3.0 POTENTIAL POLLUTION SOURCES

Potential pollution sources associated with construction sites and natural gas development include:

- Sediment resulting from erosion of soil stockpiles and other areas cleared of vegetation;
- Leakage of fuels and lubricants from equipment and spills from re-fueling;
- Trash and debris from clearing activities, construction materials, and workers.

The most common source of pollution from pipeline construction is sediment, which can be carried away from the work site with storm water runoff and impact the water quality of a receiving stream. Clearing, grading, and otherwise altering previously undisturbed land can increase the rate of soil erosion over pre-disturbance rates.

Petroleum products can also be potential storm water pollutants. These products are used in construction activities to power or lubricate equipment and include: fuel, gear oil, anti-freeze, hydraulic oil, brake fluid, and grease.

Debris from material staging areas, residue from equipment cleaning and maintenance, and solid waste generated from land clearing operations and human activity (trees, brush, trash, etc.) present other potential pollution sources within the construction site.

4.0 STORM WATER MANAGEMENT CONTROLS

Structural BMPs will be installed, inspected, and maintained as required by law (refer to section 7.0 "Inspection and Maintenance"). This SWMP will be revised as needed to address new disturbances. Depending on the type and location of new infrastructure there may be a need for inclusion of new and/or different BMPs. In general, new development should be planned with consideration for storm water quality (e.g. minimize disturbed area and maximize distance from surface water drainages, as practicable).
Other developments on the property, primarily existing and/or improved roads, not currently or specifically addressed in the SWMP will be periodically checked for erosion and drainage problems. This is especially important for disturbances located within 100 feet of surface drainages or creeks. If problems are noted, they should be reported to the Site Manager and/or SWMP administrator. Problem areas may be addressed through road maintenance activities, but will likely need to be addressed through BMPs, which will be added to the plan as required.

4.1 Soil Erosion and Sediment Controls

The objective of erosion and sediment controls is to mitigate the release of sediments in storm water runoff. This can be accomplished through the use of structural and/or nonstructural controls. This section describes erosion and sediment controls to be used before and during construction of the NGL Storage Facility to minimize possible sediment impacts in storm water runoff.

The proposed erosion control features include:

- Placement of any topsoil stockpiles along the upstream edge of the disturbance to divert run-on.
- Installation of silt fence, straw wattles, or straw bales as needed below the top of disturbed slopes (depending on slope gradient, length, and proximity to sensitive areas).
- Installation of straw bale/rock check dams as needed in areas of concentrated flow.
- Placement of rolled products, as needed, depending on site-specific conditions.
- Permanent seeding of reclaimed pipeline corridors and areas not needed for long-term work access.

The types and location of structural BMPs for each disturbed area will be determined as development progresses and construction plans are prepared. BMPs generally function to control sediment through diverting run-on water away from disturbed areas, to control runoff water generated from disturbed areas, or to control erosion by stabilizing the soil surface.

- Run-on controls are those features that serve to collect and/or direct run-on water away from disturbed areas. Run-on controls typically include diversion berms, channels, and flumes.
- Runoff controls are those features that serve to collect and/or direct runoff water that comes from disturbed areas. These features serve to collect and/or retain runoff water and remove sediment. Runoff controls may include straw bales, check dams, silt fence, straw wattles, diversion berm/channels, catch basins, and slope drains.
- Erosion controls are those features that serve to retain soil in-place. Erosion controls may include gravel surfacing, rolled products, rock protection, and vegetation.

4.1.1 Land Grading

Grading techniques are a non-structural practice implemented for temporary erosion control and will be used to minimize erosion and facilitate infiltration and plant growth. Techniques should include: surface roughening, terracing slopes, water bars to shorten slope length, embankment protection, diversion berms, etc. Steeper slopes can be terraced. Excavated material will be efficiently moved to areas needing fill or stockpiled.

4.1.2 Rock Check Dams

Rock check dams are structural controls that will be installed in areas of concentrated flow. Rock check dams may be used instead of straw bale check dams in areas where steep slopes, high flows, or long-term exposure are expected to result in failure or frequent maintenance of a straw bale structure. Rock check dams are permanent BMP that will be installed post pipeline construction. As the necessary locations of rock check dams are determined, the respective information will be updated into this SWMP.

4.1.3 Soil Berms

Soil berms are structural controls that may be used to divert drainage away from areas of concern or to direct flow toward sediment control structures. Where used, soil berms shall be constructed of soil with sufficient fines to minimize flow through the berm. Berms shall be at least 18-inches tall and will be compacted in place by wheel rolling with suitable rubber-tired, heavy equipment.

In the event of an unexpected release of storage fluids, it will be necessary to construct a soil berm along all edges of the pad. This will aid in preventing any release from leaving the site.

4.1.4 Culvert Inlet and Outlet Protection

Installation of culverts is a structural control that may be needed in certain areas where the pipeline intersects ephemeral drainages. The culvert inlet area will include a sediment sump that is at least 4 feet by 4 feet by 1.5 feet deep. The culvert outlet area

will include an energy dissipation feature. Acceptable energy dissipation will include rock lining or turf reinforcement matting (TRM). Rock lining will be 2 to 4-inch diameter rock at least 6 inches deep and having plan dimensions of at least 4 feet wide by 10 feet long.

The area of rock lining should be prepared by removing 6 to 8-inches of soil. The shallow excavation should be filled with rock and the rock secured in-place by bucket tamping or wheel-rolling. The rock outlet should be installed to promote lateral spreading of water as it flows across the rock.

4.1.5 Straw Wattles/Straw Bale Barriers

Straw wattles/bales are structural controls that upon implementation will capture and keep sediment on the slopes. Straw wattles/bales are useful to temporarily stabilize slopes by reducing soil creep and sheet and rill erosion until permanent vegetation can be established.

A line of straw wattles will be installed off of the northern edge of the pad (see Appendix A).

4.1.6 Seeding of Disturbed Areas

Project areas disturbed by construction will be revegetated as a non-structural control as soon as practicable following construction. Areas that will be revegetated will primarily be cut and fill slopes associated with grading activities. The permanent mix, rate, application method, and supplemental materials will be selected by the reclamation contractor. It is anticipated that this will include suitable grass species supplemented by cereal crops.

4.1.7 Mulching

Long–stemmed straw or hay mulch is a non-structural control that will be applied evenly at a rate of 1.5 to 2 tons per acre and crimped into the soil. Method of application will depend on the slopes to be mulched. A mechanical crimper is limited to slopes 3:1 and flatter. Hydraulic mulching may be necessary for steeper slopes, difficult installations, and in areas with limited access. All mulching activities will occur post seeding.

4.2 Additional BMP References

The structural and non-structural BMPs listed below are intended to include all BMPs that may be used for gas gathering projects. However, there may be situations where a BMP is needed but not included below or project personnel may need additional information on the use, specifications, and maintenance of BMPs. Additional BMP references can be obtained using:

- For oil and gas operations, the Bureau of Land Management and U.S. Forest Service have developed "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development," "Gold Book." The most recent version (fourth edition) of this is available on the internet at: http://www.blm.gov./bmp/GoldBook_Draft_v12.pdf.

- For construction BMPs and surface stabilization methods, the Alabama Soil and Water Conservation Committee has developed "Erosion Control, Sediment Control and Storm Water Management on Construction Sites and Urban Areas, Volume 1 Developing Plans and Designing Best Management Practices." This information is available on the internet at: http://www.blm.gov/bmp/field%20guide.htm

- For access roads, the US Forest Service and Bureau of Land Management have developed "Low-Volume Roads Engineering, Best Management Practices Field Guide," which is available on the internet at: http://www.blm.gov/bmp/field%20guide.htm

- A stormwater BMP fact sheet for structural and nonstructural BMPs provided by the EPA is available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/site_29.cfm

- An international stormwater BMP database is available online at: http://www.bmpdatabase.org

4.3 SWMP Administrator

The SWMP Administrator is responsible for:

- Authority for dedicating the necessary financial and human resources to implement the SWMP
- Implementing spill clean ups
- Notifying local authorities and local residents in the event that a significant release of storm water occurs that leaves the location
- Signatory authority
- Coordinating various stages of plan development and implementation
- Coordinating employee training programs
- Maintaining all records
- Making certain that all appropriate reports are submitted as necessary
- Coordinating the implementation of the preventive maintenance program
- Supervising spill response and housekeeping measures

4.4 Other Controls

4.4.1 Waste Management and Disposal

Construction and development will generate various other wastes. Other wastes may include the following:

- Trees and shrubs from clearing operations
- Trash and debris from construction materials and workers
- Sanitary sewage

Each of these wastes will be managed so as to not contribute to storm water pollution. Trees and shrubs will be stacked along the downgrading slope to provide additional sediment control. Construction trash and debris will be collected in containers and hauled off-site for disposal in suitable landfills. Sanitary waste will be contained in portable toilets or other storage tanks with waste materials and regularly pumped and transported off-site for disposal at approved facilities.

4.4.2 Fuels and Materials Management

Fuels and materials management will comply with Williams policy and procedures.

4.4.2.1 Spill Response/Clean-Up Procedures

In the event a spill occurs during construction, immediate spill response will consist of the following procedures:

- Stopping the spill
- Stopping the spill from leaving the construction site
- Contact a Williams Environmental Coordinator immediately

Petroleum Products

Petroleum products which may be present at the construction site include: gasoline, diesel fuel, lubricant oils, hydraulic oils, used oils, and solvents. Gasoline and diesel fuel will be stored in portable storage tanks with secondary containment. Lubricant, hydraulic, and miscellaneous oils and solvents will be stored in 55-gallon or smaller containers.

Pollutants from petroleum products used during construction activities adhere easily to soil particles and other surfaces. In case of a spill or leak, soils contaminated with petroleum products will be contained and removed to a proper disposal site. Proposed soil erosion and sediment control practices will aid in retention of spills or leaks. Use of secondary containment and drip pans will reduce the likelihood of spills or leaks contacting the ground. Proposed maintenance and safe storage practices will reduce the chance of petroleum products contaminating the site. Oil wastes such as crankcase oil, cans, rags, and paper containing oils will be placed in proper receptacles and disposed of or recycled. An additional source of petroleum contamination is leaks from equipment and vehicles. Routine daily inspections will be conducted to identify leaks and initiate corrective actions, if needed.

The following guidelines for storing petroleum products will be used:

- All product containers will be clearly labeled.
- Drums will be kept off the ground within secondary containment and stored under cover if needed.
- Fuel tanks will be stored within secondary containment.
- Lids of drummed materials will be securely fastened.
- Emergency spill response procedures will be available on-site. Persons trained in handling spills will be on call at all times.
- Spill clean up and containment materials (absorbent, shovels, etc.) will be easily accessible. Spills will be immediately cleaned up and contaminated materials will be properly stored on site until they can be disposed of in accordance with applicable regulations.
- Storage areas and containers will be regularly monitored for leaks and repaired or replaced as necessary. Personnel should be reminded about proper storage and handling of materials during weekly subcontractor safety meetings.

Other Chemicals Products Management

Additional materials may be used and stored on site for use during construction of the pad. These materials will be stored appropriately and managed to minimize spills and leaks. Storage areas will be regularly inspected and any minor spills or leaks will be cleaned up immediately.

Materials Management

The construction contractor will maintain a lay-down or staging area for equipment and materials storage on site. These areas will be maintained with good housekeeping and will be inspected on a regular basis for spills, leaks, and potential contamination.

4.4.3 Construction Site Housekeeping

Housekeeping will consist of neat and orderly storage of materials and containerized fluids. Wastes will be temporarily stored in sealed containers and regularly collected and disposed of at suitable off-site facilities. If spills occur, prompt cleanup is required to minimize any co-mingling of waste materials with storm water runoff.

Routine maintenance will be limited to fueling and lubrication of equipment. Drip pans will be used during routine fueling and maintenance to contain spills or leaks. Any waste product from maintenance will be contained and transported off site for disposal or recycling. There will be no major equipment overhauls conducted on site. Equipment will be transported off site for major overhauls.

Cleanup of trash and discarded materials will be conducted at the end of each work day. Cleanup will consist of patrolling the site, access areas, and other work areas to pickup trash, scrap debris, other discarded materials, and any contaminated soil. These materials will be disposed of appropriately.

5.0 NON-STORM WATER DISCHARGES

No non-storm water discharges are anticipated from the project. Possible exceptions include fire prevention/suppression and dust control activities.

6.0 FINAL STABILIZATION

Areas which have been disturbed are considered to be stabilized when a uniform vegetative cover with a density of 70 percent of the pre-disturbance levels has been established or when an equivalent permanent, physical erosion reduction method is in place.

Areas which are not used for facilities, access roads, material storages yards, or other work areas will be stabilized with vegetation. Areas that are stabilized with vegetation will be considered to have achieved final stabilization when a uniform stand of vegetation with a density of at least 70 percent of the pre-disturbance has been established. Other Areas that may include facilities, access roads, material storage yards, and other work areas will be stabilized with the use of permanent, physical erosion reduction methods.

7.0 INSPECTIONS AND MAINTENANCE PROCEDURES

To meet requirements of the General Permit, inspection and maintenance of erosion and sediment controls must occur during the project. Continued inspection and maintenance is required for specific structures after construction is completed. The inspection program will include the following:

1. A qualified person familiar with the SWMP and control measures will conduct the inspections.
2. Inspections will cover these areas of the construction site:
   - Disturbed areas without stabilization
   - Material storage areas
   - Check dams
   - Silt fence
   - Surface water diversions
   - Down-gradient areas
   - New access roads
   - Locations where vehicles enter or exit the site.
3. Inspections will occur at least once every 14 calendar days and after a significant precipitation or snow melt event that could cause erosion.
4. Permanently stabilized areas will be inspected at least once per month.
5. A log of inspections will be maintained.
6. Disturbed areas and material storage areas that are exposed to precipitation will be inspected for evidence of pollutants entering nearby drainages.
7. BMPs will be inspected for evidence of deterioration, under-cutting, and build up of sediment. Sediment will be removed when it has built up one-third to one-half the height of the straw bales or silt fence.
8. Roads used for vehicle access will be inspected for evidence of off-site sediment transport.

MAINTENANCE

Maintenance will include prompt repairs and/or adjustments to any erosion and sediment control structures that are deteriorating or found to be performing inadequately. Repairs should be made as soon as possible and prior to the next anticipated storm event. Williams or designated contractor(s) will maintain, on-site, all materials necessary to make any reasonably expected repairs such as silt fence, straw bales, and stakes.

7.1 Records Management

All inspection forms and revisions to the NGL Storage Facility will be maintained and documented on the inspection log. The completed inspection forms will be placed into the SWMP upon inspection. The records management program will include the following:

1. Following each inspection, the SWMP will be modified as necessary to include additional controls designed to correct identified problems.
2. An inspection report summarizing the scope of the inspection, the name of the person conducting the inspection, date of inspection, and observations relating to the implementation will be prepared. Inspection reports will be retained for at least 3 years from the date that the site reaches final stabilization.
3. Actions taken to modify any storm water control measure will be recorded and maintained with the SWMP.

If no deficiencies are found during the inspection, the report will contain certification that the site is in compliance with the SWMP. Signatures will be in accordance with the General Permit Conditions, Part E. 1 (Appendix A).

8.0 CERTIFICATIONS

8.1 Owner/Applicant Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: Mr. Mike Gardner

Title: Senior Environmental Specialist/Storm Water Plan Administrator

Date: _____

Signature: _____

Name: Mr. Tom Fiore

Title: Gas Plant Manager

Date: _____

Operator Name and Address: Williams Production RMT Company
4289 County Road 215
P.O. Box 370
Parachute, CO 81635

Site Name and Location: Parachute Greasewood Express
Natural Gas Liquids Storage Facility
Section 28
Township 6 South
Range 96 West, 6th P.M.
Garfield County, Colorado

SWMP Prepared by: HRL Compliance Solutions, Inc.
216 North Avenue, Suite #1
Grand Junction, CO 81501
Phone: 970.243.3271

8.2 Contractor/Subcontractor Certification

All contractors and subcontractors that will perform construction activities that could impact storm water will be familiar with the SWMP and will sign the following certification.

Contractor Certification

I certify under penalty of law that I understand the terms and conditions of the SWMP and associated CDPS General Permit that authorizes storm water discharges associated with construction activity identified as part of this certification.

Signature: _____

Name: _____

Title: _____

Date: _____

Representing:
Company: _____

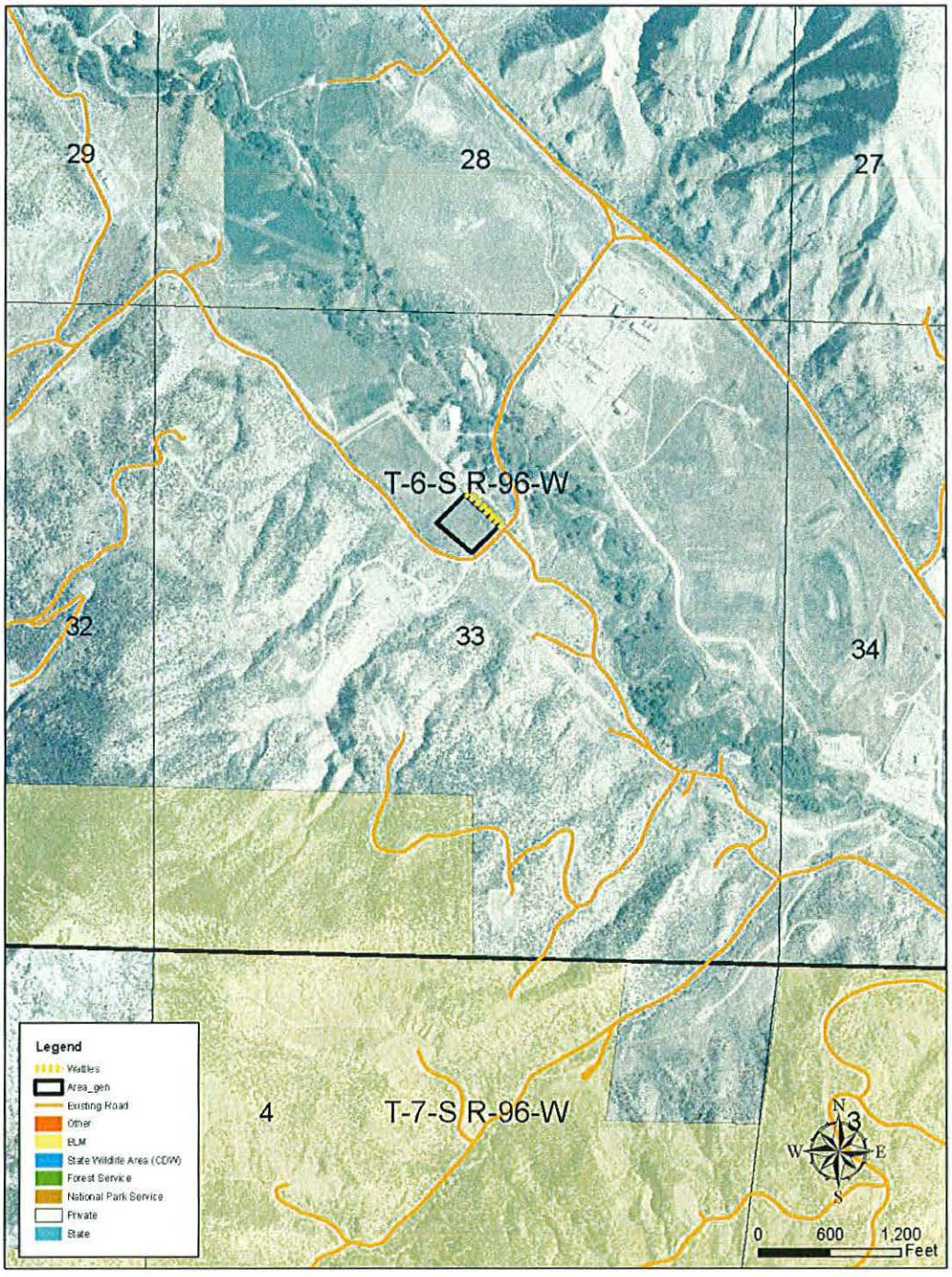
Address: _____

Address: _____

Phone: _____

APPENDIX A

PARACHUTE GREASEWOOD EXPRESS
NGL STORAGE FACILITY SITE MAP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BLM
State Wildlife Area (CDW)
Forest Service
National Park Service
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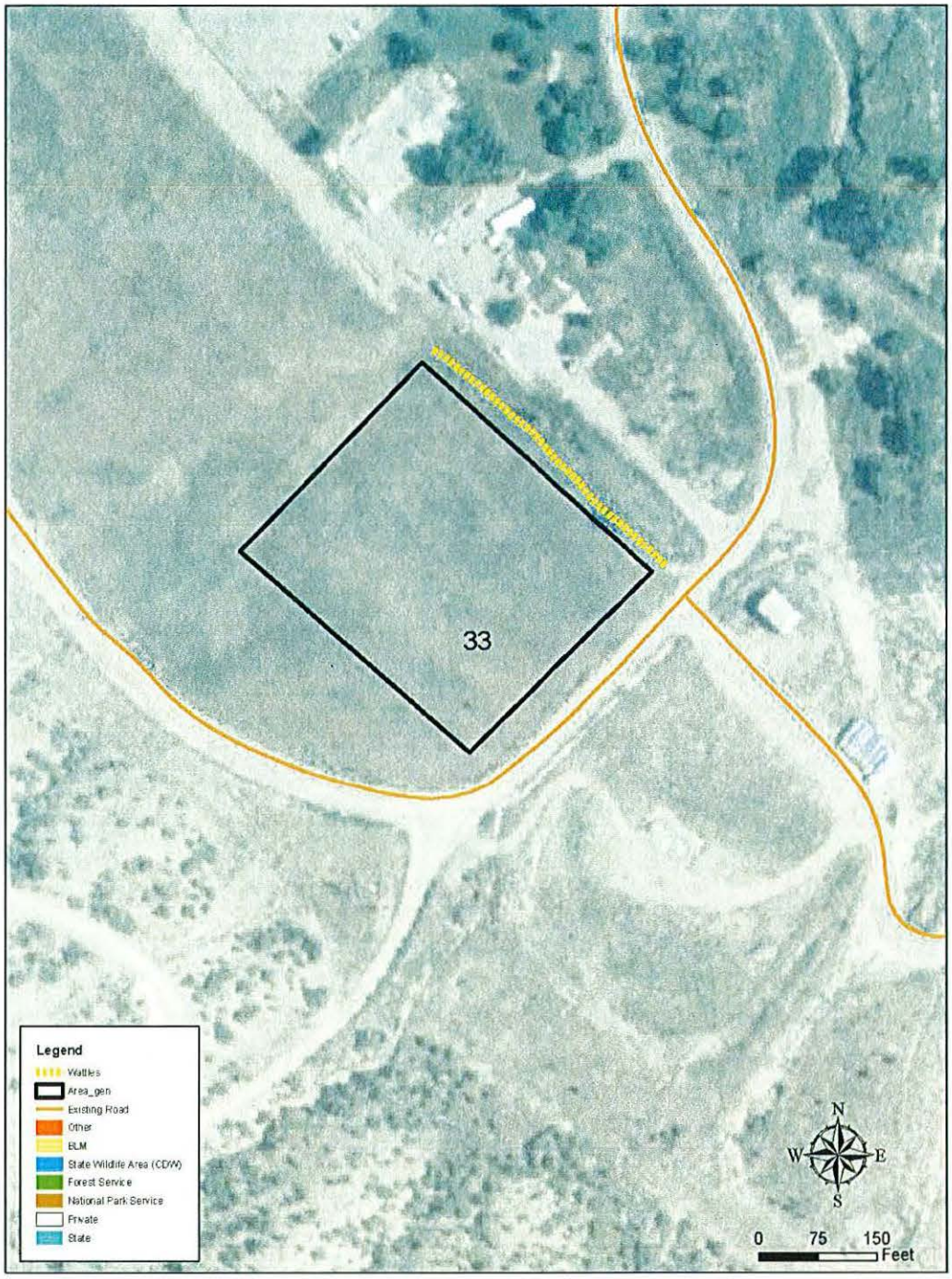
State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APPENDIX B

PARACHUTE GREASEWOOD EXPRESS
NGL STORAGE FACILITY
STORM WATER CONSTRUCTION APPLICATION FORM AND PERMIT

APPENDIX C

STORM WATER INSPECTION FORM

Williams Storm Water Inspection Checklist

Project Name	Project ID	Unique ID	Field Name
NGL Storage Facility			

Site Type	Permit Name	Permit Date	Proposed Start Date
Facility			

Latitude	Longitude	Township	Range	Section	Description

Inspection Date	Inspector	Inspection Type	Comments

Acres Disturbed	Acres Subject to Interim Reclamation	Acres Restored

Distance to Receiving Water	Name of Receiving Water(s)	Type	Estimated Runoff Coefficient

Best Management Practices

BMP #	Type	Maintenance Required	Date Maintenance Completed	Comment
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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41				

Processing Equipment

# of Tanks	# of Separators	Freeboard in Secondary Containment	Storm Water in Secondary Containment	Comment
N/A	N/A	N/A	N/A	None

Secondary Wells On Site

None	None	None	None	None
None	None	None	None	None

Other Equipment

Type of Equipment	Comment
None	None
None	None
None	None

Housekeeping/Site Trash

Materials Handling

Spills or Leaks

Vegetation

Seed Mix	Date Planted	70% Revegetated	Comment
TBD	TBD	TBD	TBD

Files

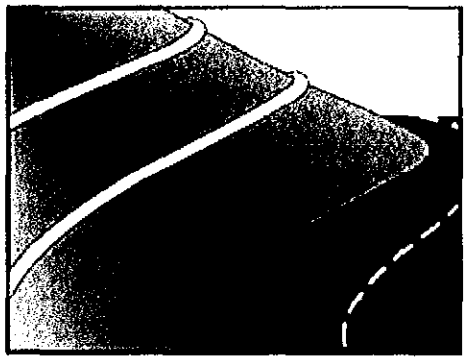
Type of File	Location

Site Complies With Storm Water Standards (Yes or No)

APPENDIX D

BMP DESCRIPTIONS AND INSTALLATION DETAILS

Fiber Rolls



Description and Purpose

A fiber roll consists of straw, flax, or other similar materials bound into a tight tubular roll. When fiber rolls are placed at the toe and on the face of slopes, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. By interrupting the length of a slope, fiber rolls can also reduce erosion.

Implementation

Fiber Roll Materials

- Fiber rolls should be either prefabricated rolls or rolled tubes of erosion control blanket.

Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 8 in. diameter.
- Bind roll at each end and every 4 ft along length of roll with jute-type twine.

Installation

- Locate fiber rolls on level contours spaced as follows:
    - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
    - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
    - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of the fiber roll.
    - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
    - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.

STATE OF COLORADO *Updated 3/2006*

GENERAL PERMIT APPLICATION

FORM ONLY

AND STORMWATER MANAGEMENT PLAN GUIDANCE FOR

STORMWATER

DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

ATTENTION

This document contains only the two-page application form for the CDPS Stormwater Construction Permit. You must follow the application instructions and the process for developing a Stormwater Management Plan (SWMP).

The complete application document is on the Division's web page at www.cdphe.state.co.us/wq/permitsunit/SWConstructionApplication.pdf

DO NOT SUBMIT YOUR SWMP

NEW FOR THIS APPLICATION

REFER TO THE COMPLETE APPLICATION AND INSTRUCTION FOR FURTHER INFORMATION

- **Site Map/Legal Description** – A site map or legal description (subdivision/block/lot) indicating the site boundaries is now required.
- **Applicant and Operator Liability** – An applicant under this permit agrees to assume liability for compliance with the requirements of the Construction General Permit for the entirety of the construction site/project described and applied for, until such time as the applicant takes the necessary actions to amend, transfer, or inactivate their certification, or the permit expires. The Application Certification language has been revised to clarify this requirement. It is the applicant's responsibility to be familiar with the requirements of the permit and ensure compliance with those requirements.
- **Restrictions on Who May Apply for and Maintain the Permit** – The applicant must be either the **owner** and/or **operator** of the construction site. An operator at a construction site who is not covered by a certification held by an appropriate entity may be held liable for operating without the necessary permit coverage. Refer to Parts B and C of the Instructions.
- **Stormwater Management Plan Guidance** – The guidance which was previously available as a separate document has now been added as Appendix A to the application. The guidance has been revised and updated.

Additional Guidance

Additional information, including further discussion on permittee and operator liability, is available in the Stormwater Fact Sheet for Construction, available from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit. If you have questions on completing this application, you may

Application Completeness: All items of the application must be completed accurately and in their entirety or the application will be deemed incomplete, and processing of the application will not begin until all information is received. (Do not include a copy of the Stormwater Management Plan, unless requested by the Division.) One original copy of the completed application (**no faxes or e-mails**) shall be submitted, only to:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-Permits-B2
4300 Cherry Creek Drive South

Denver, Colorado 80246-1530

GENERAL PERMIT **APPLICATION**
STORMWATER DISCHARGES ASSOCIATED WITH:
CONSTRUCTION ACTIVITY

For Agency Use Only
Date Received: ___ ___ / ___ ___ / ___ ___ ___ ___
Month Day Year

C O R - 0 3 ___ ___ ___ ___

Permit No. (COR-030000)

Billing Code: 9A 9B 9C(1) 9D(2) 9E(3) 9F(4)

ALL APPLICANTS MUST FOLLOW THE DIRECTIONS FOR COMPLETION OF THIS FORM IN PART D OF THE INSTRUCTIONS

Please print or type. All items must be completed accurately and in their entirety or the application will be deemed incomplete and the application returned. Processing of the application will not begin until all information is received. Please refer to the instructions for information about the required items. **Original** signatures for Parts 8 and 9 are **required.**

1. **Name and address of the permit applicant:**

Company Name Williams Production RMT Company

Mailing Address P.O Box 370

City, State and Zip Code Parachute, Colorado 81635

Phone Number (970) 285-9377 Who is applying? Owner ☐ Developer X Contractor ☐

Local Contact (familiar with facility) Mr. Tom Fiore

Title Plant Manager Phone Number (970) 285-9377

Local Contact E-mail Address tom.fiore@williams.com

Local Contact (familiar with facility) Mr. Michael Gardner

Title Senior Environmental Specialist Phone Number (970) 263-2714

Local Contact E-mail Address michael.gardner@Williams.com

2. **Location of the construction site:**

Street Address (or cross streets) N/A

City (if unincorporated, so indicate) Parachute County Garfield

Name of plan, project, or development NGL Storage Facility

Latitude/Longitude – use one of the following formats:

Latitude ___ ___ / ___ ___ / ___ ___ ___ Longitude ___ ___ ___ / ___ ___ / ___ ___ ___ (e.g., 39°42'11'', 104°55'57'')
degrees minutes seconds degrees minutes seconds

-or-

Latitude 39.482° Longitude -108.113° (e.g., 39.703°, 104.933°')
degrees (to 3 decimal places) degrees (to 3 decimal places)

3. **Legal Description (subdivision, block, and lot) or Map Indicating Site Location/Boundaries:**
If a map is attached to provide this information, this must be indicated below. Maps must be folded to 8½ x 11 inches.
Map Attached? X Yes, skip to item 4 ☐No; include legal description **per Instructions** (use separate sheet if needed):
See attached Map

4. **Area of the construction site:**

Total area of project site (acres) Approximately 2.81 acres

Area of project site to undergo disturbance (acres) Approximately 2.81 acres

Total disturbed area of Larger Common Plan of Development or Sale, if applicable (i.e., total including all phases, filings, lots, and infrastructure not covered by this application, SEE INSTRUCTIONS!) Approximately 2.81 acres.

5. **Nature of the construction activity:**

Check the appropriate box(s) or provide a brief description that indicates the general nature of the construction activities. (The 'l description of activities must be included in the Stormwater Management Plan.)

☐Single Family Residential Development

☐Multi-Family Residential Development

☐Commercial Development

XOil and Gas Production and/or Exploration (including pad sites and associated infrastructure)

☐Highway/Road Development (not including roadways associated with commercial or residential development)

☐Other, Describe: _____

_____

6. **Anticipated construction schedule:**

(SEE INSTRUCTIONS! Providing incorrect information may result in violations.)

Construction Start Date: 07/01/2007 __ __ __ __ Final Stabilization Date: Ongoing __ __ /__ __ __/

7. **The name of the receiving waters(s).** (If discharge is to a ditch or storm sewer, also include the name of the ultimate receiving water): Parachute Creek, and ultimately the Colorado River.

STOP! A Stormwater Management Plan (see Appendix A) must be completed prior to signing the following

8. **Stormwater Management Plan Certification:**

"I certify under penalty of law that a **complete Stormwater Management Plan, as described in Appendix A of this application, has been prepared for my activity.** Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the Stormwater Management Plan is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for falsely certifying the completion of said SWMP, including the possibility of fine and imprisonment for knowing violations."

_____

Signature of Legally Responsible Person (submission must include original signature) Date Signed

Mr. Michael Gardner — Storm Water Management Plan Administrator

Name (printed) — Title

9. **Signature of Applicant**

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

"I understand that submittal of this application is for coverage under the State of Colorado General Permit for Stormwater Discharges Associated with Construction Activity **for the entirety of the construction site/project described and applied for, until such time as the application is amended or the certification is transferred, inactivated, or expired.**"

_____

Signature of Legally Responsible Person (submission must include original signature) Date Signed

Mr. Tom Fiore — Plant Manager

Name (printed) — Title

Williams Midstream

Storm Water Management Plan
Parachute Greasewood Express Liquids Pipeline

May 2007

Storm Water Management Plan

Parachute Greasewood Express Liquids Pipeline

Prepared For:

Williams
WILLIAMS FIELD SERVICES

Williams Midstream
One Williams Center
P.O. Box 645, WRC 3-9
Tulsa, Oklahoma 74101-0645

Prepared By:

HRL COMPLIANCE SOLUTIONS, INC.
Environmental Consulting

HRL Compliance Solutions, Inc.
216 North Avenue, Suite 1
Grand Junction, CO 81501

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LIST OF APPENDICES

1.0 INTRODUCTION

The Parachute Greasewood Express Liquids (PGX) Pipeline Storm Water Management Plan (SWMP) has been written to comply with the Colorado Department of Public Health and Environment's (CDPHE) General Permit No. COR-03000 and related U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) storm water regulations. This SWMP addresses construction activities associated with development of the natural gas resources in the Garfield County area.

The Federal Clean Water Act [Section 402(p)] requires that discharges of pollutants to waters of the United States from any point source be regulated by NPDES permits. In November 1990, the USEPA published final regulations that established application requirements for storm water associated with construction activity for soil disturbances of 5 acres or more be regulated as an industrial activity and covered by an NPDES permit. In December 1999, the USEPA published final Phase II NPDES regulations that established application requirements for storm water associated with construction activity for soil disturbances to be regulated as an industrial activity and covered by an NPDES permit. These regulations became effective July 1, 2002.

Construction permits are required for oil and gas activities that disturb one or more acres during the life of the project or are part of a larger common plan of development. The CDPHE considers a common plan of oil and gas development to mean development of several well pads and/or related infrastructure in a contiguous area either during the same time period or under a consistent plan for long-term development.

This PGX SWMP is intended to be periodically updated as needed to address planned developments, new disturbances, and other changes needed to manage storm water and protect surface water quality.

1.1 Project Owner/Operator

The project landowners (listed by company and last names):

Chevron
EnCana Oil & Gas (USA) Inc.
Puckett Land Company
Williams Production RMT Company

The project operator is Williams Midstream.

Address: Williams Midstream
One Williams Center
P.O. Box 645 , WRC 3-9
Tulsa, Oklahoma 74101-0645

The Williams Midstream contact person(s) for the PGX Pipeline Project are Mr. Mike Gettel and Mr. Mark Bareta.

Mr. Mike Gettel, P.E.
Project Manager
Williams Midstream
Office: (918) 573-3268
Mobile:(918) 606-5985
Michael.Gettel2@Williams.com

Mr. Mark Bareta
Environmental Coordinator
Williams Midstream
Office: (918) 573-2000
Mark.Bareta@Williams.com

Williams Midstream will be in charge of all aspects of this project. Contractor(s) will do the actual construction and grading but all work will be supervised by Williams Midstream and all decisions will be made by Williams Midstream.

2.0 CONSTRUCTION SITE DESCRIPTION

2.1 Site Location

The PGX pipeline begins at the Parachute Creek Gas Plant, within Section 33 of Township 6 South, Range 96 West of the 6th PM, Garfield County, Colorado. The remainder of the pipeline is within Township 6 South, Range 96 West of the 6th PM, Garfield County, Colorado, including Sections 5, 8, 17, 20, 28, and 29. The pipeline terminates at the Williams Meter Station (Section 36, T5S, R96W). The project will consist of approximately 7.2 miles of pipeline Right-of-Way (ROW). The ROW will average approximately 50 feet in width, resulting in approximately 43.6 acres of land disturbance. The Town of Parachute, Colorado is the nearest population center. Receiving waters include the Garden Gulch and Parachute Creek. The ultimate receiving water is the Colorado River.

2.2 Site Area Characteristics

2.2.1 Runoff Characteristics and Coefficient

Runoff characteristics are based on site topography, soil type, and soil/vegetative cover. Drainage across the pipeline will vary along the length of the pipeline. According to the Natural Resources Conservation Service (NRCS), the soil along the length of the PGX pipeline consists of three general soil units.

- **Arvada Loam (6-20 percent slopes)**: Deep, well drained, moderate sloping to steep soils on fans and high terraces. Permeability is slow, and available water holding capacity is high. Runoff is rapid/ very rapid, and the hazard of water erosion is severe.
- **Torriothents-Camborthids-Rock Outcrop Complex (Steep)**: Shallow to deep soils commonly found over sandstone and shale bedrock and stony basaltic alluvium. Permeability is low to moderate, and available water holding capacity is moderate to high. Runoff is very rapid, and the hazard of water erosion is severe.
- **Nihill channery loam (6-25% slopes):** Deep, well drained, moderately sloping soil commonly found on alluvial fans and valley sides. Permeability is moderately rapid, and available water holding capacity is low. Surface runoff is slow, and the hazard of water erosion is severe.

The native understory vegetation consists of the following shrubs and grasses: western wheatgrass, mountain big sagebrush, needle and threat grass, slender wheatgrass, mountain mahogany, bitterbrush, and various bluegrasses. The native overstory canopy consists mainly of the following: One seed juniper, Utah juniper, and pinyon. The runoff coefficient value prior to construction will range from 0.30 to 0.56, depending on the topography of the pipeline ROW, and will range from 0.17 to 0.30 after construction, until 70% of pre-disturbance ground cover is achieved.(NRCS TR-55).

The estimated vegetated ground cover along this project varies from 20% to 100% depending on slope and aspect. In the western most areas directly adjacent to live water with north facing slopes, vegetative ground cover is estimated at 100%. In eastern areas with southeast facing slopes, vegetative ground cover is estimated at 55%.

2.3 CONSTRUCTION SITE CHARACTERISTICS

2.3.1 Construction Site Area Description

The vast majority of ground disturbance will be due to pipeline construction. Pipeline corridors are linear features having widths up to 100 feet and lengths of less than a mile to more than several miles. The width of disturbance may vary depending on construction needs and other topographical factors. After a pipeline origin, destination, and preferred route have been identified, the following construction sequence is generally followed:

1. Surveys: topographic, vegetation, wildlife, and archeology, as necessary.
2. Vegetation clearing (as necessary): If conducted, cleared vegetation will be placed in a windrow at the edge of the work area, removed from the construction site, or burned depending on landowner requirements.
3. Topsoil stripping: Topsoil is removed from the work area and stockpiled in a windrow near the edge of the work area.
4. General grading: For pipeline segments that occur in relatively rough terrain, general grading will be conducted to create a safe and workable ground surface. This is generally done to form a relatively level work surface on steep cross slopes and to reduce slopes in undulating terrain (arroyo and wash crossings).
5. Trench excavation: The trench needed for pipeline installation is generally located near the center of the ROW and is created by track-mounted excavators. The trench depth and width will vary on the number of pipes to be installed and the pipe diameter. Generally, a 4-5 foot deep trench will be excavated. Trench spoils are cast into a windrow.
6. Pipe welding and placement: The pipe pieces are laid beside the trench and welded. Long segments of welded pipe are placed within the trench by sideboom dozers.
7. Pipe bedding: Trench spoils are handled by excavators equipped with bedding boxes. The bedding boxes remove larger rocks and the fine material is placed beside, and over, the pipe to prevent potential damage to the pipe.
8. Trench backfill: Bulldozers move soil from the trench spoils windrow to backfill the trench.

9. General grading: If general grading was conducted to facilitate pipeline construction these materials will be replaced and graded to recreate the pre-construction topography.
10. Topsoil placement: Topsoil will be moved and redistributed across the surface of the disturbed area.
11. Vegetative material replacement/removal: Based upon landowner requirements, stripped vegetation may be hauled off-site or burned in the work area. At locations where it is required, vegetative material that was stripped and saved prior to topsoil removal will be distributed across the disturbed area. Depending on the type of vegetation and method of seeding, this may occur before or after the disturbed area is seeded.
12. Seeding: The reclaimed disturbed area is seeded. The seed mix will vary depending on location and surface ownership and will generally match the surrounding vegetation.
13. Application of erosion stabilization: Depending on terrain, (e.g. steep slopes and drainage crossings) additional measures may be applied to provide for erosion stability of the reclaimed area. Generally, rolled product will be placed on steep slopes and rolled product and/or rock will be placed at drainage crossings.

Once the pipeline has been placed in the trench and backfilled, efforts will be taken to restore the pipeline ROW to its preconstruction conditions or to mitigate for any environmental or other impacts that may have occurred during the construction process

Final stabilization is considered complete when 70 percent of the pre-construction ground cover has been re-established.

2.3.2 Schedule of Construction Activities

Construction of the necessary improvements and construction of the PGX pipeline is scheduled from August 1, 2007 to TBD. Existing and future disturbances are included in this SWMP. BMPs will be installed prior to, during, and immediately following construction as practicable, with considerations given to construction staging, safety, access, and ground conditions at the time of construction. Soil and aggregate materials will be managed so that erosion and sediment transport are minimized. Nearby drainages and water courses will be protected in all cases by appropriate measures.

2.3.3 Materials Handling, Loading, and Storage Areas

Fuels, pesticides or herbicides, paints or solvents, and other industrial materials associated with construction activities must be handled and stored in a manner as to prevent storm water impacts from occurring. All liquids shall be stored in appropriate containers and properly protected form adverse weather or storm events. By following good housekeeping and best management practices (BMPs), discharges of impacted storm water can be averted. Industrial wastewater shall be properly disposed and not allowed to be discharged to storm water conveyances.

2.3.4 Adjacent Property Descriptions

Surrounding land use is primarily for oil and gas exploration and production and, to a lesser extent, for seasonal livestock grazing, farming, and irrigation pasture.

3.0 POTENTIAL POLLUTION SOURCES

Potential pollution sources associated with construction sites and natural gas development include:

- Sediment resulting from erosion of soil stockpiles and other areas cleared of vegetation;
- Leakage of fuels and lubricants from equipment and spills from re-fueling;
- Trash and debris from clearing activities, construction materials, and workers.

The most common source of pollution from pipeline construction is sediment, which can be carried away from the work site with storm water runoff and impact the water quality of a receiving stream. Clearing, grading, and otherwise altering previously undisturbed land can increase the rate of soil erosion over pre-disturbance rates.

Petroleum products can also be potential storm water pollutants. These products are used in construction activities to power or lubricate equipment and include: fuel, gear oil, anti-freeze, hydraulic oil, brake fluid, and grease.

Debris from material staging areas, residue from equipment cleaning and maintenance, and solid waste generated from land clearing operations and human activity (trees, brush, trash, etc.) present other potential pollution sources within the construction site.

4.0 STORM WATER MANAGEMENT CONTROLS

Structural BMPs will be installed, inspected, and maintained as required by law (refer to section 7.0 "Inspection and Maintenance"). This SWMP will be revised as needed to address new disturbances. Depending on the type and location of new infrastructure there may be a need for inclusion of new and/or different BMPs. In general, new development should be planned with consideration for storm water quality (e.g. minimize disturbed area and maximize distance from surface water drainages, as practicable).
Other developments on the property, primarily existing and/or improved roads, not currently or specifically addressed in the SWMP will be periodically checked for erosion and drainage problems. This is especially important for ROW located within 100 feet of surface drainages or creeks. If problems are noted, they should be reported to the Site Manager and/or SWMP administrator. Problem areas may be addressed through road maintenance activities, but will likely need to be addressed through BMPs, which will be added to the plan as needed.

4.1 Soil Erosion and Sediment Controls

The objective of erosion and sediment controls is to mitigate the release of sediments in storm water runoff. This can be accomplished through the use of structural and/or nonstructural controls. This section describes erosion and sediment controls to be used before and during construction of the PGX Pipeline to minimize possible sediment impacts in storm water runoff.

The proposed erosion control features include:

- Placement of any topsoil stockpiles along the upstream edge of the ROW to divert run-on.
- Installation of silt fence, straw wattles, or straw bales as needed below the top of disturbed slopes (depending on slope gradient, length, and proximity to sensitive areas).
- Installation of straw bale/rock check dams as needed in areas of concentrated flow.
- Construction of flumes at drainage crossings.
- Placement of rolled products, as needed, depending on site-specific conditions.
- Permanent seeding of reclaimed pipeline corridors and areas not needed for long-term work access.

The types and location of structural BMPs for each disturbed area will be determined as development progresses and construction plans are prepared. BMPs generally function to control sediment through diverting run-on water away from disturbed areas, to control runoff water generated from disturbed areas, or to control erosion by stabilizing the soil surface.

- Run-on controls are those features that serve to collect and/or direct run-on water away from disturbed areas. Run-on controls typically include diversion berms, channels, and flumes.
- Runoff controls are those features that serve to collect and/or direct runoff water that comes from disturbed areas. These features serve to collect and/or retain runoff water and remove sediment. Runoff controls may include straw bales, check dams, silt fence, straw wattles, diversion berm/channels, catch basins, and slope drains.
- Erosion controls are those features that serve to retain soil in-place. Erosion controls may include gravel surfacing, rolled products, rock protection, and vegetation.

4.1.1 Land Grading

Grading techniques are a non-structural practice implemented for temporary erosion control and will be used to minimize erosion and facilitate infiltration and plant growth. Techniques should include: surface roughening, terracing slopes, water bars to shorten slope length, embankment protection, diversion berms, etc. Steeper slopes can be terraced. Excavated material will be efficiently moved to areas needing fill or stockpiled.

4.1.2 Straw Bale Check Dams

Straw bale check dams, at a minimum, will be installed in areas of concentrated flow. Straw bale check dams are temporary structural controls that should be installed at suitable locations along the pipeline ROW.

Straw bale check dams will be necessary at the following locations:

- N39.51161°, W108.13153°
- N39.50972°, W108.13157°
- N39.49316°, W108.12638°
- N39.49308°, W108.12627°
- N39.49254°, W108.12546°
- N39.49167°, W108.12480°
- N39.49108°, W108.12448°
- N39.48967°, W108.12305°
- N39.48944°, W108.12289°
- N39.53176°, W108.12946°

4.1.3 Rock Check Dams

Rock check dams are structural controls that will be installed in areas of concentrated flow. Rock check dams may be used instead of straw bale check dams in areas where steep slopes, high flows, or long-term exposure are expected to result in failure or frequent maintenance of a straw bale structure. Rock check dams are permanent BMP that will be installed post pipeline construction. As the necessary locations of rock check dams are determined, the respective information will be updated into this SWMP.

4.1.4 Soil Berms

Soil berms are structural controls that may be used to divert drainage away from areas of concern or to direct flow toward sediment control structures. Where used, soil berms shall be constructed of soil with sufficient fines to minimize flow through the berm. Berms shall be at least 18-inches tall and will be compacted in place by wheel rolling with suitable rubber-tired, heavy equipment.

4.1.5 Uphill Topsoil Stockpile/Diversion Berm

In order to divert surface runoff from up gradient areas away from the pipeline, salvaged topsoil may be placed on the uphill side of the pipeline. The topsoil stockpile may be placed and graded to form a diversion berm that will direct surface water away from the pipeline. Uphill topsoil stockpile and diversion berms are recommended in all areas of steep slopes.

4.1.6 Culvert Inlet and Outlet Protection

Installation of culverts is a structural control that may be needed in certain areas where the pipeline intersects ephemeral drainages. The culvert inlet area will include a sediment sump that is at least 4 feet by 4 feet by 1.5 feet deep. The culvert outlet area will include an energy dissipation feature. Acceptable energy dissipation will include rock lining or turf reinforcement matting (TRM). Rock lining will be 2 to 4-inch diameter rock at least 6 inches deep and having plan dimensions of at least 4 feet wide by 10 feet long.

The area of rock lining should be prepared by removing 6 to 8-inches of soil. The shallow excavation should be filled with rock and the rock secured in-place by bucket tamping or wheel-rolling. The rock outlet should be installed to promote lateral spreading of water as it flows across the rock.

Culvert inlet/outlet protection is necessary at the following locations:

- N39.53176°, W108.12946°

4.1.7 Right of Way (ROW) Drainage Relief

Culverts, rolling dips, terraces, or water bars are a structural control that may be used to provide drainage of water from ROW surfaces as needed to drain low areas or to reduce the amount of water flowing on the ROW surface. ROW drainage relief should be provided as needed and in accordance with generally accepted practices. Depending on the location and type of drainage relief installed, additional sediment control features may be needed such as sediment removal at the inlet and erosion protection at the outlet.

4.1.8 Silt Fence

Silt fences are a structural control that will be installed at the down gradient edge of the ROW and other fill slopes located within 100 feet of a surface drainage. Silt fences may also be required in areas where steep slopes below the ROW will likely result in fast flow of water from the location to nearby drainages.

4.1.9 Straw Wattles/Straw Bale Barriers

Straw wattles/bales are structural controls that upon implementation will capture and keep sediment on the slopes. Straw wattles/bales are useful to temporarily stabilize slopes by reducing soil creep and sheet and rill erosion until permanent vegetation can be established.

Straw bale barriers are necessary at the following locations:

- N39.54875°. W108.12086°

Straw Wattles are necessary at the following locations:

- N39.51916°, W108.13261°
- N39.49702°, W108.12816°
- N39.48197°, W108.11322°
- N39.48227°, W108.11264°
- N39.48228°, W108.11220°
- N39.48228°, W108.11176°
- N39.55073°, W108.12074°

4.1.10 Seeding of Disturbed Areas

Project areas disturbed by construction will be revegetated as a non-structural control as soon as practicable following construction. Areas that will be revegetated will primarily be cut and fill slopes associated with grading activities. The permanent mix, rate, application method, and supplemental materials will be selected by the reclamation contractor. It is anticipated that this will include suitable grass species supplemented by cereal crops.

4.1.11 Mulching

Long–stemmed straw or hay mulch is a non-structural control that will be applied evenly at a rate of 1.5 to 2 tons per acre and crimped into the soil. Method of application will depend on the slopes to be mulched. A mechanical crimper is limited to slopes 3:1 and flatter. Hydraulic mulching may be necessary for steeper slopes, difficult installations, and in areas with limited access. All mulching activities will occur post seeding.

4.1.12 Erosion Control Blankets

Erosion control blankets are porous fabrics and are manufactured by weaving or bonding fibers from organic or synthetic materials. Erosion control blankets are a non-structural control that is installed on steep slopes or in channels to prevent erosion until final vegetation is established. However, blankets can also be used as separators or to aid in plant growth by holding seeds, fertilizers, and topsoil in place. Erosion control blankets are permanent storm water BMPs that are installed post pipeline construction. As the necessary locations of erosion control blankets are determined, the respective information will be updated into this SWMP.

4.2 Additional BMP References

The structural and non-structural BMPs listed below are intended to include all BMPs that may be used for gas gathering projects. However, there may be situations where a BMP is needed but not included below or project personnel may need additional information on the use, specifications, and maintenance of BMPs. Additional BMP references can be obtained using:

- For oil and gas operations, the Bureau of Land Management and U.S. Forest Service have developed "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development," "Gold Book." The most recent version (fourth edition) of this is available on the internet at: http://www.blm.gov./bmp/GoldBook_Draft_v12.pdf.

- For construction BMPs and surface stabilization methods, the Alabama Soil and Water Conservation Committee has developed "Erosion Control, Sediment Control and Storm Water Management on Construction Sites and Urban Areas, Volume 1 Developing Plans and Designing Best Management Practices." This information is available on the internet at: http://www.blm.gov/bmp/field%20guide.htm

- For access roads, the US Forest Service and Bureau of Land Management have developed "Low-Volume Roads Engineering, Best Management Practices Field Guide," which is available on the internet at: http://www.blm.gov/bmp/field%20guide.htm

- A stormwater BMP fact sheet for structural and nonstructural BMPs provided by the EPA is available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/site_29.cfm

- An international stormwater BMP database is available online at: http://www.bmpdatabase.org

4.3 SWMP Administrator

The SWMP Administrator is responsible for:

- Authority for dedicating the necessary financial and human resources to implement the SWMP
- Implementing spill clean ups
- Notifying local authorities and local residents in the event that a significant release of storm water occurs that leaves the location
- Signatory authority
- Coordinating various stages of plan development and implementation
- Conducting inspections
- Coordinating employee training programs
- Maintaining all records
- Making certain that all appropriate reports are submitted as necessary
- Coordinating the implementation of the preventive maintenance program
- Supervising spill response and housekeeping measures

4.4 Other Controls

4.4.1 Waste Management and Disposal

Pipeline construction and development will generate various other wastes. Other wastes may include the following:

- Trees and shrubs from clearing operations
- Trash and debris from construction materials and workers
- Sanitary sewage

Each of these wastes will be managed so as to not contribute to storm water pollution. Trees and shrubs will be stacked along the downgrading slope to provide additional sediment control. Construction trash and debris will be collected in containers and hauled off-site for disposal in suitable landfills. Sanitary waste will be contained in portable toilets or other storage tanks with waste materials and regularly pumped and transported off-site for disposal at approved facilities.

4.4.2 Fuels and Materials Management

Fuels and materials management will comply with Williams policy and procedures.

4.4.2.1 Spill Response/Clean-Up Procedures

In the event a spill occurs during construction, immediate spill response will consist of the following procedures:

- Stopping the spill
- Stopping the spill from leaving the ROW

- Contact a Williams Environmental Coordinator immediately

Petroleum Products

Petroleum products which may be present at the construction site include: gasoline, diesel fuel, lubricant oils, hydraulic oils, used oils, and solvents. Gasoline and diesel fuel will be stored in portable storage tanks with secondary containment. Lubricant, hydraulic, and miscellaneous oils and solvents will be stored in 55-gallon or smaller containers.

Pollutants from petroleum products used during construction activities adhere easily to soil particles and other surfaces. In case of a spill or leak, soils contaminated with petroleum products will be contained and removed to a proper disposal site. Proposed soil erosion and sediment control practices will aid in retention of spills or leaks. Use of secondary containment and drip pans will reduce the likelihood of spills or leaks contacting the ground. Proposed maintenance and safe storage practices will reduce the chance of petroleum products contaminating the pipeline ROW. Oil wastes such as crankcase oil, cans, rags, and paper containing oils will be placed in proper receptacles and disposed of or recycled. An additional source of petroleum contamination is leaks from equipment and vehicles. Routine daily inspections will be conducted to identify leaks and initiate corrective actions, if needed.

The following guidelines for storing petroleum products will be used:

- All product containers will be clearly labeled.
- Drums will be kept off the ground within secondary containment and stored under cover if needed.
- Fuel tanks will be stored within secondary containment.
- Lids of drummed materials will be securely fastened.
- Emergency spill response procedures will be available on-site. Persons trained in handling spills will be on call at all times.
- Spill clean up and containment materials (absorbent, shovels, etc.) will be easily accessible. Spills will be immediately cleaned up and contaminated materials will be properly stored on site until they can be disposed of in accordance with applicable regulations.
- Storage areas and containers will be regularly monitored for leaks and repaired or replaced as necessary. Personnel should be reminded about proper storage and handling of materials during weekly subcontractor safety meetings.

Other Chemicals Products Management

Additional materials may be used and stored on site for use during construction of the pipeline. These materials will be stored appropriately and managed to minimize spills and leaks. Storage areas will be regularly inspected and any minor spills or leaks will be cleaned up immediately.

Materials Management

The construction contractor will maintain a lay-down or staging area for equipment and materials storage on site. These areas will be maintained with good housekeeping and will be inspected on a regular basis for spills, leaks, and potential contamination.

4.4.3 Construction Site Housekeeping

Housekeeping will consist of neat and orderly storage of materials and containerized fluids. Wastes will be temporarily stored in sealed containers and regularly collected and disposed of at suitable off-site facilities. If spills occur, prompt cleanup is required to minimize any co-mingling of waste materials with storm water runoff.

Routine maintenance will be limited to fueling and lubrication of equipment. Drip pans will be used during routine fueling and maintenance to contain spills or leaks. Any waste product from maintenance will be contained and transported off site for disposal or recycling. There will be no major equipment overhauls conducted on site. Equipment will be transported off site for major overhauls.

Cleanup of trash and discarded materials will be conducted at the end of each work day. Cleanup will consist of patrolling the ROW, access areas, and other work areas to pickup trash, scrap debris, other discarded materials, and any contaminated soil. These materials will be disposed of appropriately.

5.0 NON-STORM WATER DISCHARGES

No non-storm water discharges are anticipated from the project. This project intersects two perennial streams; however, these streams will be flumed briefly until construction surrounding them is completed. Possible exceptions include fire prevention/suppression and dust control activities.

6.0 FINAL STABILIZATION

Areas which have been disturbed are considered to be stabilized when a uniform vegetative cover with a density of 70 percent of the pre-disturbance levels has been established or when an equivalent permanent, physical erosion reduction method is in place.

Areas which are not used for facilities, access roads, material storages yards, or other work areas will be stabilized with vegetation. Areas that are stabilized with vegetation will be considered to have achieved final stabilization when a uniform stand of vegetation with a density of at least 70 percent of the pre-disturbance has been established. Other Areas that may include facilities, access roads, material storage yards, and other work areas will be stabilized with the use of permanent, physical erosion reduction methods.

7.0 INSPECTIONS AND MAINTENANCE PROCEDURES

To meet requirements of the General Permit, inspection and maintenance of erosion and sediment controls must occur during the project. Continued inspection and maintenance is required for specific structures after construction is completed. The inspection program will include the following:

1. A qualified person familiar with the SWMP and control measures will conduct the inspections.
2. Inspections will cover these areas of the construction site:
   - Disturbed areas without stabilization
   - Material storage areas
   - Check dams
   - Silt fence
   - Surface water diversions
   - Down-gradient areas
   - New access roads
   - Locations where vehicles enter or exit the site.
3. Inspections will occur at least once every 14 calendar days and after a significant precipitation or snow melt event that could cause erosion.
4. Permanently stabilized areas will be inspected at least once per month.
5. A log of inspections will be maintained.
6. Disturbed areas and material storage areas that are exposed to precipitation will be inspected for evidence of pollutants entering nearby drainages.
7. Check dams, silt fences, and other BMPs will be inspected for evidence of deterioration, under-cutting, and build up of sediment. Sediment will be removed when it has built up one-third to one-half the height of the straw bales or silt fence.
8. Roads used for vehicle access will be inspected for evidence of off-site sediment transport.

MAINTENANCE

Maintenance will include prompt repairs and/or adjustments to any erosion and sediment control structures that are deteriorating or found to be performing inadequately. Repairs should be made as soon as possible and prior to the next anticipated storm event. Williams or designated contractor(s) will maintain, on-site, all materials necessary to make any reasonably expected repairs such as silt fence, straw bales, and stakes.

7.1 Records Management

All inspection forms and revisions to the PGX pipeline will be maintained and documented on the inspection log. The completed inspection forms will be placed into the SWMP upon inspection. The records management program will include the following:

1. Following each inspection, the SWMP will be modified as necessary to include additional controls designed to correct identified problems.
2. An inspection report summarizing the scope of the inspection, the name of the person conducting the inspection, date of inspection, and observations relating to the implementation will be prepared. Inspection reports will be retained for at least 3 years from the date that the site reaches final stabilization.
3. Actions taken to modify any storm water control measure will be recorded and maintained with the SWMP.
4. If no deficiencies are found during the inspection, the report will contain certification that the site is in compliance with the SWMP. Signatures will be in accordance with the General Permit Conditions, Part E. 1 (Appendix A).

8.0 CERTIFICATIONS

8.1 Owner/Applicant Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: Mr. Mike Gettel, P.E.

Title: Senior Engineer/Project Manager

Date: _____

Operator Name and Address: Williams Midstream
One Williams Center
P.O. Box 645, WRC 3-9
Tulsa, Oklahoma 74101-0645

Site Name and Location: Parachute Greasewood Express Liquids Pipeline
Township 5 & 6 South
Range 96 West
Garfield County, Colorado

SWMP Prepared by: HRL Compliance Solutions, Inc.
216 North Avenue, Suite #1
Grand Junction, CO 81501
Phone: 970.243.3271

8.2 Contractor/Subcontractor Certification

All contractors and subcontractors that will perform construction activities that could impact storm water will be familiar with the SWMP and will sign the following certification.

Contractor Certification

I certify under penalty of law that I understand the terms and conditions of the SWMP and associated CDPS General Permit that authorizes storm water discharges associated with construction activity identified as part of this certification.

Signature: _____

Name: _____

Title: _____

Date: _____

Representing:
Company: _____

Address: _____

Address: _____

Phone: _____

APPENDIX A

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE MAP

APPENDIX B

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE STORM WATER CONSTRUCTION APPLICATION FORM AND PERMIT

APPENDIX C

STORM WATER INSPECTION FORM

Williams Midstream Storm Water Inspection Checklist

Project Name	Project ID	Unique ID	Field Name
PGX Pipeline			

Site Type	Permit Name	Permit Date	Proposed Start Date
Pipeline			

Latitude	Longitude	Township	Range	Section	Description

Inspection Date	Inspector	Inspection Type	Comments

Acres Disturbed	Acres Subject to Interim Reclamation	Acres Restored

Distance to Receiving Water	Name of Receiving Water(s)	Type	Estimated Runoff Coefficient

Best Management Practices

BMP #	Type	Maintenance Required	Date Maintenance Completed	Comment
1				
2				
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Processing Equipment

# of Tanks	# of Separators	Freeboard in Secondary Containment	Storm Water in Secondary Containment	Comment
N/A	N/A	N/A	N/A	None

Secondary Wells On Site

None	None	None	None	None
None	None	None	None	None

Other Equipment

Type of Equipment	Comment
None	None
None	None
None	None

Housekeeping/Site Trash

Materials Handling

Spills or Leaks

Vegetation

Seed Mix	Date Planted	70% Revegetated	Comment
TBD	TBD	TBD	TBD

Files

Type of File	Location

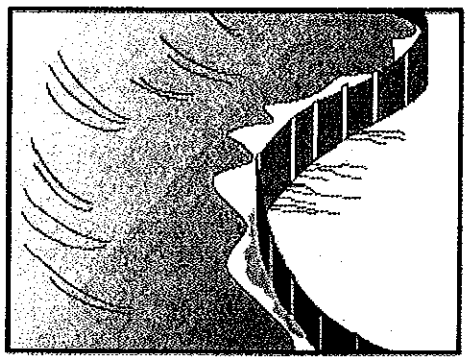
Site Complies With Storm Water Standards (Yes or No)

Comments:

APPENDIX D

BMP DESCRIPTIONS AND INSTALLATION DETAILS

Silt Fence



Description and Purpose

A silt fence is made of a filter fabric that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence

Implementation

A silt fence is a temporary sediment barrier consisting of filter fabric stretched across and attached to supporting posts, entrenched, and, depending upon the strength of fabric used, supported with plastic or wire mesh fence. Silt fences trap sediment by intercepting and detaining small amounts of sediment-laden runoff from disturbed areas in order to promote sedimentation behind the fence.

Silt fences are preferable to straw bale barriers in many cases. Laboratory work at the Virginia Highway and Transportation Research Council has shown that silt fences can trap a much higher percentage of suspended sediments than can straw bales. While the failure rate of silt fences is lower than that of straw bale barriers, there are many instances where silt fences have been improperly installed. The following layout and installation guidance can improve performance and should be followed:

- Use principally in areas where sheet flow occurs.
- Don't use in streams, channels, or anywhere flow is concentrated. Don't use silt fences to divert flow.
- Don't use below slopes subject to creep, slumping, or landslides.
- Select filter fabric that retains 85% of soil by weight, based on sieve analysis, but that is not finer than an equivalent opening size of 70.
- Install along a level contour, so water does not pond more than 1.5 ft at any point along the silt fence.
- The maximum length of slope draining to any point along the silt fence should be 200 ft or less.
- The maximum slope perpendicular to the fence line should be 1:1.

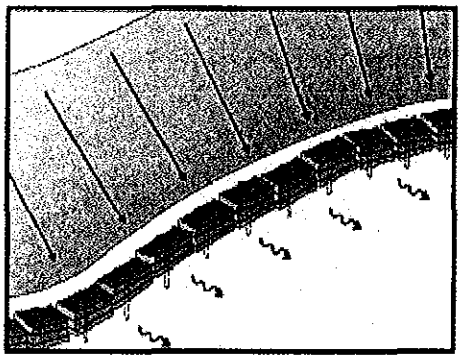
Implementation Continued

- Provide sufficient room for runoff to pond behind the fence and to allow sediment removal equipment to pass between the silt fence and toes of slopes or other obstructions. About 1200 ft^2 of ponding area should be provided for every acre draining to the fence.
- Turn the ends of the filter fence uphill to prevent storm water from flowing around the fence.
- Leave an undisturbed or stabilized area immediately down slope from the fence where feasible.
- Silt fences should remain in place until the disturbed area is permanently stabilized.

Materials

- Silt fence fabric should be woven polypropylene with a minimum width of 36 in. and a minimum tensile strength of 100 lb force. The fabric should conform to the requirements in ASTM designation D4632 and should have an integral reinforcement layer. The reinforcement layer should be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric should be between 0.1 sec-1 and 0.15 sec-1 in conformance with the requirements in ASTM designation D4491.
- Wood stakes should be commercial quality lumber of the size and shape shown on the plans. Each stake should be free from decay, splits or cracks longer than the thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.
- Staples used to fasten the fence fabric to the stakes should be not less than 1.75 in. long and should be fabricated from 15 gauge or heavier wire. The wire used to fasten the tops of the stakes together when joining two sections of fence should be 9-gauge or heavier wire. Galvanizing of the fastening wire will not be required.
- There are new products that may use prefabricated plastic holders for the silt fence and use bar reinforcement instead of wood stakes. If bar reinforcement is used in lieu of wood stakes, use number four or greater bar. Provide end protection for any exposed bar reinforcement.

Straw Bale Barrier



Description and Purpose

A straw bale barrier is a series of straw bales placed on a level contour to intercept sheet flows. Straw bale barriers pond sheet- flow runoff, allowing sediment to settle out.

Implementation

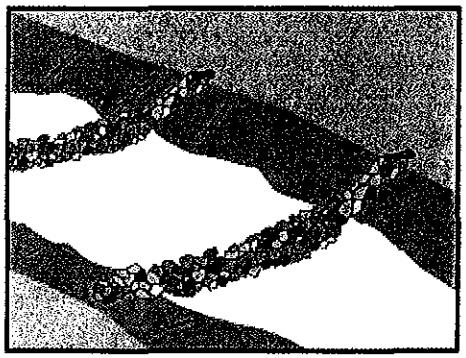
A straw bale barrier consists of a row of straw bales placed on a level contour. When appropriately placed, a straw bale barrier intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding provides quiescent conditions allowing sediment to settle. Straw bale barriers also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets, which erode rills, and ultimately gullies, into disturbed, sloped soils.

Straw bale barriers have not been as effective as expected due to improper use. These barriers have been placed in streams and drainage ways where runoff volumes and velocities have caused the barriers to wash out. In addition, failure to stake and entrench the straw bale has allowed undercutting and end flow. Use of straw bale barriers in accordance with this BMP should produce acceptable results.

Materials

- ***Straw Bale Size***: Each straw bale should be a minimum of 14 in. wide, 18 in. in height, 36 in. in length and should have a minimum mass of 50 lbs. The straw bale should be composed entirely of vegetative matter, except for the binding material.
- ***Bale Bindings***: Bales should be bound by steel wire, nylon or polypropylene string placed horizontally. Jute and cotton binding should not be used. Baling wire should be a minimum diameter of 14-gauge. Nylon or polypropylene string should be approximately 12-gauge in diameter with a breaking strength of 80 lbs force.
- ***Stakes***: Wood stakes should be commercial quality lumber of the size and shape shown on the plans. Each stake should be free from decay, splits or cracks longer than the thickness of the stake, or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.

Check Dams



Description and Purpose

A check dam is a small barrier constructed of rock, gravel bags, sandbags, straw bales, fiber rolls, or reusable products, placed across a constructed swale or drainage ditch. Check dams reduce the effective slope of the channel, thereby reducing the velocity of flowing water, allowing sediment to settle and reducing erosion.

Implementation

General

Check dams reduce the effective slope and create small pools in swales and ditches that drain 10 acres or less. Reduced slopes reduce the velocity of storm water flows, thus reducing erosion of the swale or ditch and promoting sedimentation. Use of check dams for sedimentation will likely result in little net removal of sediment because of the small detention time and probable scour during longer storms. Using a series of check dams will generally increase their effectiveness. A sediment trap may be placed immediately upstream of the check dam to increase sediment removal efficiency.

Design and Layout

Check dams work by decreasing the effective slope in ditches and swales. An important consequence of the reduced slope is a reduction in capacity of the ditch or swale. This reduction in capacity must be considered when using this BMP, as reduced capacity can result in overtopping of the ditch or swale and resultant consequences. In some cases, such as a "permanent" ditch or swale being constructed early and used as a "temporary" conveyance for construction flows, the ditch or swale may have sufficient capacity such that the temporary reduction in capacity due to check dams is acceptable. When check dams reduce capacities beyond acceptable limits, there are several options:

- Don't use check dams. Consider alternative BMPs.
- Increase the size of the ditch or swale to restore capacity.

Maximum slope and velocity reduction is achieved when the toe of the upstream dam is at the same elevation as the top of the downstream dam. The center section of the dam should be lower than the edge sections so that the check dam will direct flows to the center of the ditch or swale.

Check dams are usually constructed of rock, gravel bags, sandbags, and fiber rolls. A number of products manufactured specifically for use as check dams are also being used, and some of these products can be removed and reused. Check dams can also be constructed of logs or lumber, and have the advantage of a longer lifespan when compared to gravel bags, sandbags, and fiber rolls. Straw bales can also be used for check dams and can work if correctly installed; but in practice, straw bale check dams have a high failure rate. Check dams should not be constructed from straw bales or silt fences, since concentrated flows quickly wash out these materials.

Rock check dams are usually constructed of 8 to 12 in. rock. The rock is placed either by hand or mechanically, but never just dumped into the channel. The dam must completely span the ditch or swale to prevent washout. The rock used must be large enough to stay in place given the expected design flow through the channel.

Log check dams are usually constructed of 4 to 6 in. diameter logs. The logs should be embedded into the soil at least 18 in. Logs can be bolted or wired to vertical support logs that have been driven or buried into the soil.

Gravel bag and sandbag check dams are constructed by stacking bags across the ditch or swale, shaped as shown in the drawings at the end of this fact sheet.

Manufactured products should be installed in accordance with the manufacturer's instructions. If grass is planted to stabilize the ditch or swale, the check dam should be removed when the grass has matured (unless the slope of the swales is greater than 4%).

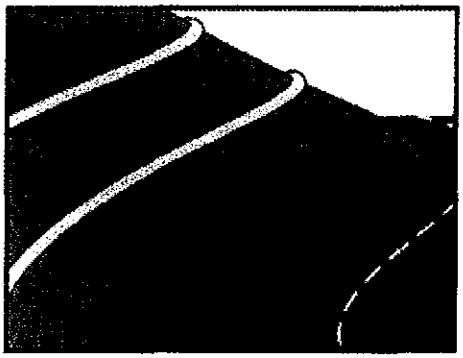
The following guidance should be followed for the design and layout of check dams:

- Install the first check dam approximately 16 ft from the outfall device and at regular intervals based on slope gradient and soil type.
- Check dams should be placed at a distance and height to allow small pools to form between each check dam.
- Backwater from a downstream check dam should reach the toes of the upstream check dam.
- A sediment trap provided immediately upstream of the check dam will help capture sediment. Due to the potential for this sediment to be re-suspended in subsequent storms, the sediment trap must be cleaned following each storm event.
- High flows (typically a 2-year storm or larger) should safely flow over the check dam without an increase in upstream flooding or damage to the check dam.
- Where grass is used to line ditches, check dams should be removed when grass has matured sufficiently to protect the ditch or swale.
- Gravel bags may be used as check dams with the following specifications:

Materials

Gravel bags used for check dams should conform to the requirements of gravel bag berms. Sandbags used for check dams should conform to sandbag barrier guidelines. Fiber rolls used for check dams should conform to fiber roll requirements. Straw bales used for check dams should conform to straw bale barrier requirements.

Fiber Rolls



Description and Purpose

A fiber roll consists of straw, flax, or other similar materials bound into a tight tubular roll. When fiber rolls are placed at the toe and on the face of slopes, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. By interrupting the length of a slope, fiber rolls can also reduce erosion.

Implementation

Fiber Roll Materials

- Fiber rolls should be either prefabricated rolls or rolled tubes of erosion control blanket.

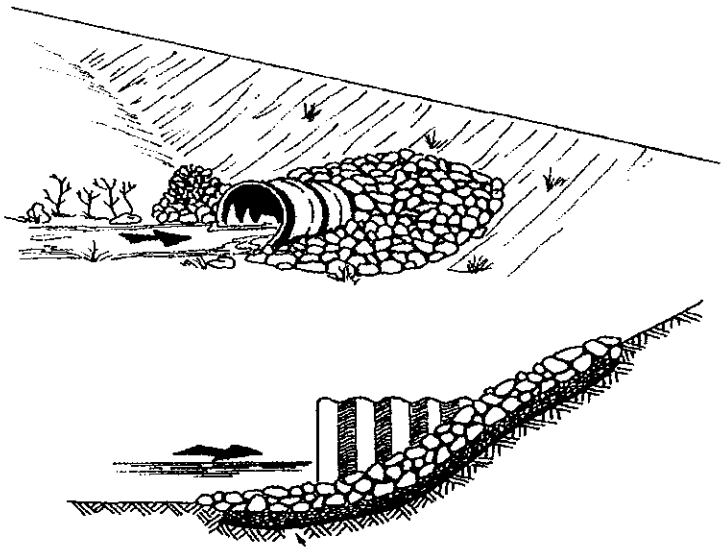
Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 8 in. diameter.
- Bind roll at each end and every 4 ft along length of roll with jute-type twine.

Installation

- Locate fiber rolls on level contours spaced as follows:
    - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
    - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
    - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of the fiber roll.
    - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
    - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.

Culvert Inlet/Outlet Protection



a. Normal metal culvert installation using riprap around the inlet and outlet of culverts. Also use geotextile (filter fabric) or gravel filter beneath the riprap for most installations. (*Adapted from Wisconsin's Forestry Best Management Practice for Water Quality, 1995*)

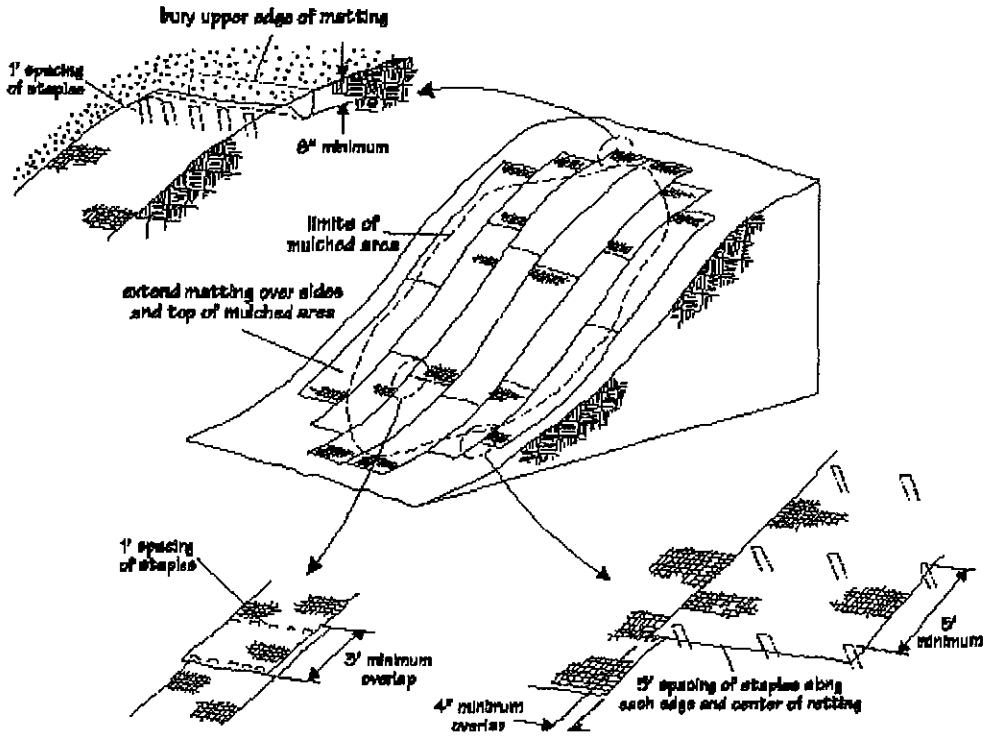
Description and Purpose

Culvert inlet/outlet protection typically consists of gravel riprap that act as energy dissipation features, thus allowing for the settling of sediments, while preventing piping form occurring at the inlet or outlet. Riprap should consist of small to medium gravels that layered to achieve uniform density.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Repair or fill any unnecessary gaps or holes in the inlet/outlet of culverts

Erosion Control Blankets



Description and Purpose

Made out of environmentally friendly, biodegradable material, erosion control blankets are installed on disturbed slopes that are requiring stability. They stabilize slopes, and provide for an increased water holding capacity, which ultimately increased the rate and establishment of desired vegetative cover.

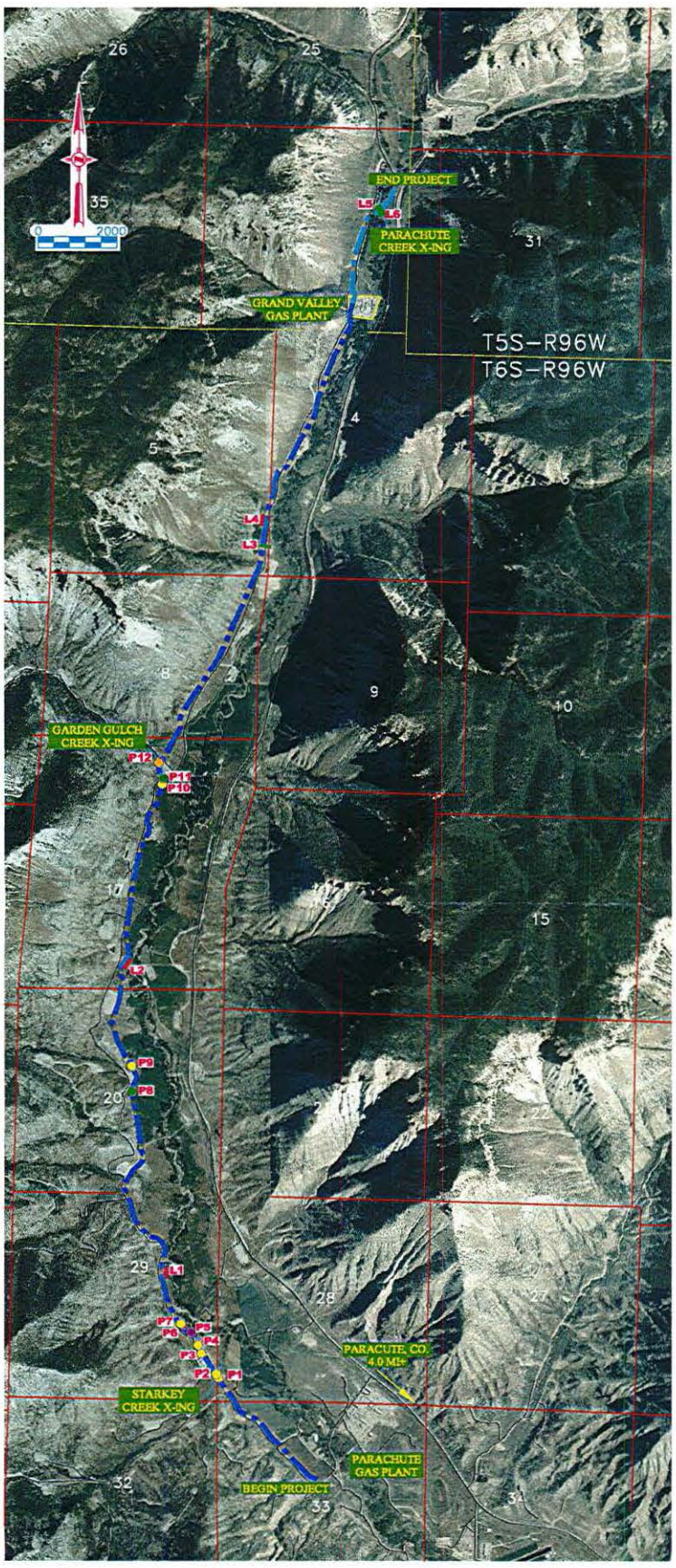
Implementation

Erosion control blankets should installed smoothly on the surface of the soil, loose enough to allow for vegetation establishment. The blankets are to be in complete contact with the soil to prevent any tenting. The upslope end of the blanket should be buried in a trench with ideal dimensions of 6"x6". Where one blanket ends and another begins, there should be 4-6 inches of overlap.

Inspection and Maintenance

- Inspect blankets prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Repair any unnecessary gaps or holes in the blankets.
- Inspect to make sure that there is uniform contact with the soil.

PROJECT AREA MAP



TABULATED VALUES

POINT NAME	STATE PLANE, CO. CENTRAL, NAD27, FEET		UTM, NAD83, ZONE 12, METERS		NAD83		TYPE
	NORTHING	EASTING	NORTHING	EASTING	LATITUDE	LONGITUDE	
L1	616625.5620	1258608.7260	4375868.7280	746949.4740	39.496990	108.128150	Wattles
L2	624721.1610	1257585.9610	4378313.7230	746488.1150	39.519126	108.132604	Wattles
L3	635462.4660	1261210.4470	4381650.1060	747392.0860	39.548891	108.120859	Straw Bale Barrier
L4	636129.2770	1261261.8770	4381854.0080	747395.3730	39.550725	108.120745	Wattles
L5	644173.3650	1264112.4070	4384355.1450	748113.7480	39.573025	108.111460	Straw Bale Barrier
L6	644203.2710	1264138.8680	4384364.7380	748121.2460	39.573109	108.111369	Straw Bale Barrier
P1	613835.4560	1260012.8460	4375045.5520	747428.5480	39.489445	108.122890	Check Dam Straw Bale
P2	613918.8070	1259970.1920	4375070.1300	747414.0210	39.489670	108.123050	Check Dam Straw Bale
P3	614438.0200	1259587.8170	4375221.0720	747288.0170	39.491065	108.124457	Check Dam Straw Bale
P4	614660.1220	1259503.6380	4375287.1110	747258.2800	39.491668	108.124778	Check Dam Straw Bale
P5	614983.9570	1259321.5300	4375382.2990	747196.8510	39.492542	108.125457	Check Dam Rock
P6	615183.6700	1259099.1460	4375438.9620	747125.4640	39.493072	108.126265	Check Dam Rock
P7	615216.3520	1259066.8710	4375448.3110	747115.0350	39.493159	108.126382	Check Dam Straw Bale
P8	621281.9640	1257811.6930	4377271.1670	746620.5760	39.509706	108.131451	Culvert Inlet Protection
P9	621951.1480	1257798.7660	4377474.5980	746604.2360	39.511541	108.131565	Check Dam Straw Bale
P10	629298.2250	1258582.2110	4379725.2480	746706.4700	39.531766	108.129543	Check Dam Straw Bale
P11	629451.9820	1258608.2090	4379772.5270	746711.5310	39.532190	108.129467	Culvert Inlet Protection
P12	629850.7410	1258499.7000	4379891.8800	746671.1120	39.533276	108.129892	Low Water Crossing - flume drainage

LEGEND

- CHECK DAM STRAW BALE
- CULVERT INLET PROTECTION
- FLUME DRAINAGE
- ROCK DAM
- STRAW BALE BARRIER
- WATTLES
- PROPOSED 6" PIPELINE
- PROPOSED 8" PIPELINE
- ACCESS ROAD

NO.	DATE	REVISIONS	BY	CHK	APPR
0	05/15/07	ISSUED FOR CLIENT REVIEW AND COMMENT	SLS	WRS	

Williams
WILLIAMS FIELD SERVICES

DRG RIFFIN & ASSOCIATES, INC.
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901

PARACHUTE GREASEWOOD EXPRESS LIQUIDS PIPELINE

PIPE STORMWATER BMP MAP

GARFIELD COUNTY, COLORADO

SCALE: 1" = 2000'	DRAWN BY: SLS
DATE: 05/15/07	CHECKED BY: WRS
JOB No.: 15115	DWG# DRG-SW3P01-15116
APPROVED:	SHEET 1 OF 1

STATE OF COLORADO *Updated 3/2006*

GENERAL PERMIT APPLICATION

FORM ONLY

AND STORMWATER MANAGEMENT PLAN GUIDANCE FOR

STORMWATER

DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

ATTENTION

This document contains only the two-page application form for the CDPS Stormwater Construction Permit. You must follow the application instructions and the process for developing a Stormwater Management Plan (SWMP).

The complete application document is on the Division's web page at www.cdphe.state.co.us/wq/permitsunit/SWConstructionApplication.pdf

DO NOT SUBMIT YOUR SWMP

NEW FOR THIS APPLICATION

REFER TO THE COMPLETE APPLICATION AND INSTRUCTION FOR FURTHER INFORMATION

- **Site Map/Legal Description** – A site map or legal description (subdivision/block/lot) indicating the site boundaries is now required.
- **Applicant and Operator Liability** – An applicant under this permit agrees to assume liability for compliance with the requirements of the Construction General Permit for the entirety of the construction site/project described and applied for, until such time as the applicant takes the necessary actions to amend, transfer, or inactivate their certification, or the permit expires. The Application Certification language has been revised to clarify this requirement. It is the applicant's responsibility to be familiar with the requirements of the permit and ensure compliance with those requirements.
- **Restrictions on Who May Apply for and Maintain the Permit** – The applicant must be either the **owner** and/or **operator** of the construction site. An operator at a construction site who is not covered by a certification held by an appropriate entity may be held liable for operating without the necessary permit coverage. Refer to Parts B and C of the Instructions.
- **Stormwater Management Plan Guidance** – The guidance which was previously available as a separate document has now been added as Appendix A to the application. The guidance has been revised and updated.

Additional Guidance

Additional information, including further discussion on permittee and operator liability, is available in the Stormwater Fact Sheet for Construction, available from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit. If you have questions on completing this application, you may

Application Completeness: All items of the application must be completed accurately and in their entirety or the application will be deemed incomplete, and processing of the application will not begin until all information is received. (Do not include a copy of the Stormwater Management Plan, unless requested by the Division.) One original copy of the completed application (**no faxes or e-mails**) shall be submitted, only to:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-Permits-B2
4300 Cherry Creek Drive South

Denver, Colorado 80246-1530

GENERAL PERMIT **APPLICATION**
STORMWATER DISCHARGES ASSOCIATED WITH:
CONSTRUCTION ACTIVITY

For Agency Use Only
Date Received: ___ ___ / ___ ___ / ___ ___ ___ ___
Month Day Year

C O R - 0 3 ___ ___ ___ ___

Permit No. (COR-030000)

Billing Code: 9A 9B 9C(1) 9D(2) 9E(3) 9F(4)

ALL APPLICANTS MUST FOLLOW THE DIRECTIONS FOR COMPLETION OF THIS FORM IN PART D OF THE INSTRUCTIONS

Please print or type. All items must be completed accurately and in their entirety or the application will be deemed incomplete and the application returned. Processing of the application will not begin until all information is received. Please refer to the instructions for information about the required items. **Original** signatures for Parts 8 and 9 are **required.**

1. **Name and address of the permit applicant:**

Company Name Williams Midstream

Mailing Address One Williams Center, P.O. Box 645, WRC 3-9

City, State and Zip Code Tulsa, Oklahoma 74101-0645

Phone Number (918) 573-3268 Who is applying? Owner ☐ Developer X Contractor ☐

Local Contact (familiar with facility) Mike Gettel, P.E.

Title Project Manager Phone Number (918) 573-3268

Local Contact E-mail Address Michael.Gettel2@Williams.com

Legally Responsible Person (application signer) E-mail Address As Above

2. **Location of the construction site:**

Street Address (or cross streets) N/A

City (if unincorporated, so indicate) Parachute County Garfield

Name of plan, project, or development Parachute Greasewood Express (PGX) Pipeline

Latitude/Longitude – use one of the following formats:

Latitude ___ ___ / ___ ___ / ___ ___ ___ Longitude ___ ___ ___ / ___ ___ / ___ ___ ___ (e.g., 39°42'11", 104°55'57")
degrees minutes seconds degrees minutes seconds

-or-

Latitude N39.519° ___ ___ ___ Longitude W108.132° ___ ___ ___ (e.g., 39.703°, 104.933°)
degrees (to 3 decimal places) degrees (to 3 decimal places)

3. **Legal Description (subdivision, block, and lot) or Map Indicating Site Location/Boundaries:**
If a map is attached to provide this information, this must be indicated below. Maps must be folded to 8½ x 11 inches.
Map Attached? X Yes, skip to item 4 ☐ No; include legal description **per Instructions** (use separate sheet if needed):

Subdivision(s), Lot(s), Block(s): _____

_____

4. **Area of the construction site:**

Total area of project site (acres) 43.6

Area of project site to undergo disturbance (acres) 43.6

Total disturbed area of Larger Common Plan of Development or Sale, if applicable (i.e., total including all phases, filings, lots, and infrastructure not covered by this application, SEE INSTRUCTIONS!) _____

5. **Nature of the construction activity:**
Check the appropriate box(s) or provide a brief description that indicates the general nature of the construction activities. (The full description of activities must be included in the Stormwater Management Plan.)

☐Single Family Residential Development

☐Multi-Family Residential Development

☐Commercial Development

XOil and Gas Production and/or Exploration (including pad sites and associated infrastructure)

☐Highway/Road Development (not including roadways associated with commercial or residential development)

☐Other, Describe: _____

_____

6. **Anticipated construction schedule:**
(SEE INSTRUCTIONS! Providing incorrect information may result in violations.)

Construction Start Date: 08 (month) / 01 (day) / 2007 (year) Final Stabilization Date: Ongoing (month) ___ (day) / ___ ___ (year)

7. **The name of the receiving waters(s).** (If discharge is to a ditch or storm sewer, also include the name of the ultimate receiving water): Garden Gulch, Parachute Creek. Ultimate receiving water is the Colorado River

STOP! A Stormwater Management Plan (see Appendix A) must be completed prior to signing the following

8. **Stormwater Management Plan Certification:**

"I certify under penalty of law that a **complete Stormwater Management Plan, as described in Appendix A of this application, has been prepared for my activity**. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the Stormwater Management Plan is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for falsely certifying the completion of said SWMP, including the possibility of fine and imprisonment for knowing violations."

_____
Signature of Legally Responsible Person (submission must include original signature) Date Signed

Mr. Mike Gettel, P.E. — Name (printed)
Senior Engineer Project Manager — Title

9. **Signature of Applicant**

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

"I understand that submittal of this application is for coverage under the State of Colorado General Permit for Stormwater Discharges Associated with Construction Activity **for the entirety of the construction site/project described and applied for, until such time as the application is amended or the certification is transferred, inactivated, or expired.**"

_____
Signature of Legally Responsible Person (submission must include original signature) Date Signed

Mr. Mike Gettel P.E. — Name (printed)
Senior Engineer Project Manager — Title

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 23- Response letter regarding Development Plan Review Standards and Criteria for Approval. 9.07.06

Please find below a response to each of the checklist items that are required to be reviewed by the Garfield County Building and Planning Department.

A. Right-of-way locations related to perimeters of surface property ownerships. 9.07.06 (1)

Please see Tab 2- Vicinity Map- 9.07.04 (1)

B. Colorado Oil and Gas Conservation Commission Rules and Regulations, Section 802, Noise Abatement. 9.07.06 (2)

Please see attached an "Analysis of Parachute Greasewood Express Pipeline Installation Noise" report. This report was prepared by Hankard Environmental Inc. and notes that our activity will comply with section 802 of the COGCC rules.

C. Minimize visual impact and disturbance of the land surface. 9.07.06 (3)

We have located the new pipeline in existing, disturbed right-of-way to limit surface disturbance to previously disturbed areas.

All equipment, above-ground piping and exterior materials on the buildings will be painted in "Desert Brown" color.

An 8 ft. chain link fence will be installed at the exterior of the Parachute NGL Storage Facility for security purposes.

D. Access Points to public roads. 9.07.06 (4)

Please see Tab 16- Traffic Impact- 9.07.04 (15)

E. Impact on endangered species. 9.07.06 (5)

Please see Tab 11- Sensitive Area Survey- 9.07.04 (10)

F. Air contaminant emissions. 9.07.06 (6)

Williams Field Services Company, Inc. agrees to meet the control provisions set forth by the Colorado Air Quality Control Program, Title 25, Article 7, C.R.S. Please see the APCD and the Fugitive Dust Permit in Tab 7- 9.07.04 (6).

G. Compliance with Colorado State Public Health and Environment, Water Quality Control standards. 9.07.06 (7)

Please see Tab 7- Regulatory Permit Requirements- 9.07.04 (6). Williams Field Services Company, LLC has applied for and will receive a CDPS permit from the CDPHE for the project.

H. Compliance with Garfield County Individual Sewage Disposal System regulations. 9.07.06 (8)

There will not be ISDS installed at this project. Please see Tab 22- Construction Management Plan- Page 23- Waste Disposal and sanitation to note the use of portable chemical toilets for human waste during the construction of the pipeline.

I. Reclamation plan. 9.07.06 (9)

Please see Tab 13- Revegetation Plan- 9.07.04 (12)

J. Abandoned pipeline removal. 9.07.06 (10)

Abandoned pipeline will be abandoned as per the most current Colorado Oil & Gas Conservation Commission regulations at the time of abandonment.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

ORIGINAL

HANKARD ENVIRONMENTAL
ACOUSTICS AND VIBRATION CONSULTING

May 24, 2007

Phil Vaughan
Phil Vaughan Construction Management, Inc.
Construction Manager
1038 County Road 323
Rifle, CO 81650

RE: Analysis of Parachute Greasewood Express Pipeline Installation Noise

Dear Mr. Vaughan,

Per you request, we predicted the noise levels that will be generated during the installation of the Parachute Greasewood Express Pipeline in order to determine if the project would be in compliance with applicable noise regulations.

SUMMARY

The 7.2 mile long Parachute Greasewood Express Pipeline will be located along Parachute Creek, with the nearest terminal approximately 3.8 miles to the northwest of the town of Parachute, Colorado. Noise from construction of the pipeline must adhere to Garfield County Zoning Resolution 9.07.06 (2), which refers to the Colorado Oil and Gas Conservation Commission (COGCC) Rules and Regulations, Section 802, Noise Abatement. The COGCC Rule 802 says that the maximum noise level from the construction of a pipeline must be at or below 80 dBA (daytime) at a distance of 350 feet away.

Based on our analysis, noise levels at a distance of 350 feet from the installation of the Parachute Greasewood Express Pipeline will range from 57 dBA to 68 dBA, which is below the maximum daytime level of 80 dBA. Thus, noise from this project is projected to be in compliance with the COGCC Rule 802 and Garfield County Zoning Resolution 9.07.06 (2).

ORIGINAL

HANKARD ENVIRONMENTAL
ACOUSTICS AND VIBRATION CONSULTING

APPLICABLE NOISE REGULATIONS

Section 9.07.06 (2) of the Garfield County Development Review policy states: *Any equipment used in the construction or operation of a pipeline must comply with Colorado Oil and Gas Conservation Commission (COGCC) Rules and Regulations, Section 802, Noise Abatement.* This regulation goes on to discuss noise mitigation efforts for any areas where a *substantial* noise impact is anticipated.

The COGCC Section 802 (Revision: November 30, 2006) specifically discusses the maximum permissible noise levels for the installation of a pipeline and says that such an installation is subject to the maximum permissible noise levels for an Industrial Zone. Table 1 provides the COGCC maximum permissible noise levels per land use zone. This pipeline project will be completed during daytime hours (7:00 a.m. to 6:00 p.m.), and no impulsive type sounds are anticipated. Thus, the maximum permissible noise level is 80 dBA at a distance of 350 feet from the pipeline installation. This was verified with COGCC staff.

TABLE 1

COGCC MAXIMUM PERMISSIBLE NOISE LEVELS - dBA

Zone	Daytime [1], [2] (7:00am to 7:00pm)	Nighttime [2] (7:00pm to 7:00am)
Residential	55	50
Commercial	60	55
Light Industrial	70	65
Industrial	80	75

[1] During the daytime, the noise level can be increased by 10 dBA for 15 minutes in any one-hour period

[2] Noise level limit decreased by 5 dBA for impulsive type sounds.

PROJECT AND SITE DESCRIPTION

The proposed 7.2 mile long Parachute Greasewood Express Pipeline will be located along Parachute Creek with the nearest terminal approximately 3.8 miles to the northwest of the town of Parachute, Colorado. Based on a review of mapping and input from the project team, there are no known residences or noise sensitive areas located near the project.

For the purposes of the noise analysis, the construction of the pipeline was broken down into six phases. For each phase, the type of equipment to be used, its maximum noise level, and percentage of use is listed in Table 2. The equipment to be used for each phase was based on a review of the development plan for this project and on input from the project team. The usage percentage for each piece of equipment (duration equipment is at maximum power while in use) was based on other construction noise analyses and input from the project team. This information was used to calculate the noise emissions at various distances from the project site.

TABLE 2

Noise Sources for Parachute Greasewood Express Pipeline Installation

PHASE	EQUIPMENT	NOISE LEVEL (dBA)	NUMBER OF DEVICES	USAGE (%)
CLEARING AND GRADING	dozer	82	1	40
(brush clearing, soils removal, and grading)	brush hog	78	1	20
	backhoe	84	2	40
	patrol grader	85	1	40
TRENCHING	backhoe	84	2	40
(trenching and boring ditches)	boring machine	83	1	40
PIPELINE INSTALLATION	flat bed trucks	74	2	40
(pipe delivery, unloading, bending, welding)	side booms	81	2	16
	pipe bending machine	80	1	40
	welding	74	4	40
BACKFILLING	side booms	81	2	16
(lower pipe, material delivery, backfill, compacting)	dump truck	76	1	40
	dozer	82	1	40
	backhoes	84	2	40
HYDROSTATIC TESTING	air compressor	78	1	40
(pushing, cleaning, drying pigs)				
CLEANUP & RESTORATION	drill seeder	85	1	50
(seeding)				

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NOISE ANALYSIS RESULTS

To calculate the noise emissions from the pipeline installation, input data from Table 2, above, and the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) v1 were used. This construction noise model uses an extensive database of noise measurements and calculations developed for the Central Arterial/Tunnel project in Boston, MA, which included the most comprehensive noise specification ever developed in the United States. Noise levels for each phase of the installation were calculated for a distance of 350 feet from the pipeline as per the COGCC Rule 802. The results of these calculations are shown in Figure 1. These predicted noise levels range from 57 dBA to 68 dBA, and are below the maximum permissible noise level of 80 dBA specified by the COGCC Rule 802. Thus, this project is within compliance of the COGCC Rule 802 and subsequently Section 9.07.06 (2) of the Garfield County Development Review for Pipeline Right-of-Way.

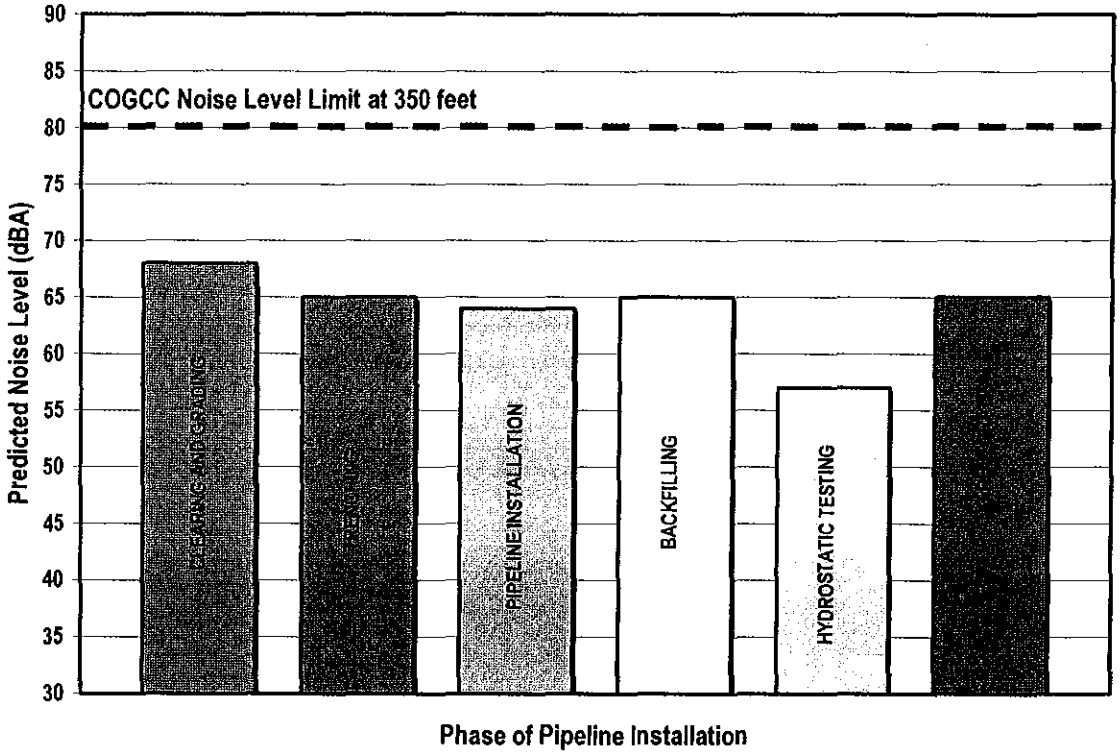

FIGURE 1 – PREDICTED NOISE LEVELS 350 FEET FROM THE INSTALLATION OF THE PARACHUTE GREASEWOOD EXPRESS PIPELINE

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Please call if you have any questions.

Sincerely,

Jeff M. Cerjan
Senior Engineer

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 24. Contact person for Williams Production RMT Co. for Garfield County to contact for Garfield County inspection. 9.07.11

Williams Field Services Company, LLC- Authorized Representative
Mr. Mike Gettel
One Williams Center
P.O. Box 645, WRC 3-9
Tulsa, OK 74101-0645
Phone: 918-573-3268
Cell Phone: 918-606-5985
Email: Michael.gettel2@williams.com

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI

PVCMI
Land Planning Division
1038 County Road 323
Rifle, CO 81650
Ph. 970-625-5350
Fax 970-625-4522
Email: pvcm@hughes.net

Project: Parachute Greasewood Express Pipeline

Submittal Item Tab 25. Colorado Professional Engineer responsible for statement and certification of project, including a digital copy of the surveyed pipeline as-built. 9.07.11

DR Griffin & Associates, Inc.- Project Designer and Surveyor
Mr. Larry Bodyfelt, PELS
Engineering Manager
D. R. Griffin & Associates, Inc.
Professional Engineers & Land Surveyors
1414 Elk Street, Suite 202
Rock Springs, WY 82901
Phone: 307-362-5028
Fax: 307-362-1056
Cell: 307-389-0371
Email: lbodyfelt@drg-wy.com

Mr. Bodyfelt and his staff will prepare the information noted in 9.07.11.

Please contact me with any questions.

Sincerely,

Philip B. Vaughan
President
PVCMI