Pond 13 E/W
Centralized E&P Waste Management Facility
Limited Impact Review Application

Garfield County, Colorado

OXY USA WTP LP

November 12, 2013

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Index

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506
TEL 970.263.7800
FAX 970.263.7456
www.olssonassociates.com

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General Application Materials

OXY USA WTP LP

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Garfield County

Community Development Department
108 8th Street, Suite 401
Glenwood Springs, CO 81601
(970) 945-8212
www.garfield-county.com

LAND USE CHANGE PERMIT APPLICATION FORM

TYPE OF APPLICATION

☐ Administrative Review	☐ Development in 100-Year Floodplain
■ Limited Impact Review	☐ Development in 100-Year Floodplain Variance
☐ Major Impact Review	☐ Code Text Amendment
☐ Amendments to an Approved LUCP ☐ LIR ☐ MIR ☐ SUP	☐ Rezoning ☐ Zone District ☐ PUD ☐ PUD Amendment
☐ Minor Temporary Housing Facility	☐ Administrative Interpretation
☐ Vacation of a County Road/Public ROW	☐ Appeal of Administrative Interpretation
☐ Location and Extent Review	☐ Areas and Activities of State Interest
☐ Comprehensive Plan Amendment ☐ Major ☐ Minor	☐ Accommodation Pursuant to Fair Housing Act
☐ Pipeline Development	☐ Variance
☐ Time Extension (also check type of original application)	

INVOLVED PARTIES

Owner/Applicant

Name: OXY USA WTP LP **Phone:** (970) 263.3637

Mailing Address: 760 Horizon Drive, Suite 101

City: Grand Junction **State:** CO **Zip Code:** 81506

E-mail: daniel_padilla@oxy.com

Representative (Authorization Required)

Name: Craig Richardson **Phone:** (970) 462.6989

Mailing Address: 760 Horizon Drive, Suite 102

City: Grand Junction **State:** CO **Zip Code:** 81506

E-mail: crichardson@olssonassociates.com

PROJECT NAME AND LOCATION

Project Name:

Pond 13 E/W Centralized E&P Waste Management Facility

Assessor's Parcel Number: 2 1 6 9 - 0 4 4 - 0 0 - 0 0 3

Physical/Street Address: ~15 miles N of DeBeque off of Conn Creek Rd

Legal Description: NE SE Section 4, T6S, R97W, 6th P.M.

Zone District: Resource Lands - Plateau (RL-P) **Property Size (acres):** 640

PROJECT DESCRIPTION

Existing Use: Natural gas development and seasonal cattle grazing

Proposed Use (From Use Table 3-403): Material handling

Description of Project: This facility will be used to store produced water that would be either recycled for well completions or eventually disposed at a permitted facility.

REQUEST FOR WAIVERS

Submission Requirements

☐ The Applicant requesting a Waiver of Submission Requirements per Section 4-202. List:

Section: 4-203.F Landscape Plan Section: 4-203.J Development Agreement

Section: 4-203.K Improvements Agreement Section: _____

Waiver of Standards

☒ The Applicant is requesting a Waiver of Standards per Section 4-118. List:

Section: Section 7-107 Access and Roadways Section: _____

Section: _____ Section: _____

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

_____ 8/13/13

Signature of Property Owner **Date**

OFFICIAL USE ONLY

File Number: _____-_____ **Fee Paid: $**_____

Garfield County

PAYMENT AGREEMENT FORM

GARFIELD COUNTY ("COUNTY") and Property Owner ("APPLICANT") OXY USA WTP LP _____ agree as follows:

1. The Applicant has submitted to the County an application for the following Project: _____ Pond 13 E/W Centralized E&P Waste Management Facility.

2. The Applicant understands and agrees that Garfield County Resolution No. 98-09, as amended, establishes a fee schedule for each type application, and the guidelines for the administration of the fee structure.

3. The Applicant and the 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. The Applicant agrees to make payment of the Base Fee, established for the Project, and to thereafter permit additional costs to be billed to the Applicant. The 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, the Applicant shall pay additional billings to the County to reimburse the County for the processing of the Project. The Applicant acknowledges that all billing shall be paid prior to the final consideration by the County of any Land Use Change or Division of Land.

I hereby agree to pay all fees related to this application:

Billing Contact Person: Daniel Padilla Phone: (970) 263.3637

Billing Contact Address: 760 Horizon Drive, Suite 101

City: Grand Junction State: CO Zip Code: 81506

Billing Contact Email: daniel_padilla@oxy.com

Printed Name of Person Authorized to Sign: Daniel I Padilla

_____ 8/13/13

(Signature) (Date)

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OXY USA WTP LP and OXY USA Inc.
Subsidiaries of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

August 13, 2013

Ms. Tamra Allen
Community Development Department
Garfield County
108 8th Street, Suite 401
Glenwood Springs, CO 81601

RE: Agent Authorization for the Proposed Pond 13 E/W Centralized E&P Waste Management Facility; Garfield County, Colorado

Dear Ms. Allen,

OXY USA WPT LP (Oxy) authorizes Craig Richardson, Jeff Hofman, and Olsson Associates (Olsson) to act on behalf of and represent Oxy in matters related to land use permitting for the proposed Pond 13 E/W Centralized E&P Waste Management Facility located in Garfield County, Colorado.

Please contact me if you have any questions, comments, concerns, or if you require additional information. I can be reached at 970.263.3637 or at daniel_padilla@oxy.com.

Sincerely,

Daniel I. Padilla
Regulatory Advisor

Cc: file
Olsson

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11/25/2008 04:14:38 PM Jean Alberico
1 of 1 Rec Fee:$6.00 Doc Fee:0.00 GARFIELD COUNTY CO

STATEMENT OF AUTHORITY

Daniel I. Padilla, as Regulatory Coordinator for OXY USA WTP LP, a Delaware limited partnership ("OXY"), is authorized to act on behalf of, and represent OXY in all matters related to applications for special use permits, conditional use permits, administrative permits, and land use change permits (and may execute such applications) submitted to Garfield County, Colorado until such time as OXY files of record a statement that Mr. Padilla no longer has such authority. OXY acknowledges that when any such permits are issued by Garfield County, Colorado, the County may choose to file them of record and such permits may contain certain covenants that run with the particular lands identified in such permits.

OXY USA WTP LP
By: OXY USA Inc., its general partner

By: _____

Name: Harry Hufft

Title: Vice President

STATE OF TEXAS

COUNTY OF HARRIS

This instrument was acknowledged before me on this 14th day of November, 2008, by Harry Hufft, Vice President of OXY USA Inc., a Delaware corporation, on behalf of OXY USA WTP LP, a Delaware limited partnership.

_____
Notary Public, State of Texas

IRMA E. SANDATE
MY COMMISSION EXPIRES
APRIL 23, 2012

Land Use Compliance
826 21½ Road
Grand Junction 81505

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12/21/2006 04:14:32 PM B:1876 P:0752 Mildred Alsdorf
1 of 8 Rec Fee:$41.00 Doc Fee:68.45 GARFIELD COUNTY CO

PERSONAL REPRESENTATIVES' DEED

THIS DEED is made by Karen Lee Latham and Ginger Latham, as co-Personal Representatives of the Estate of Charles Harvey Latham, Deceased ("Estate"), (collectively the "Grantors"), to OXY USA WTP LP, a Delaware limited partnership, whose address is 5 Greenway Plaza, Suite 110, Houston, Texas 77046-0506, ("Grantee").

WHEREAS, the above-named decedent in his lifetime made and executed his Last Will and Testament dated February 21, 2002, which Will was duly admitted to informal probate on April 28, 2004, by the District Court in and for the County of Mesa, State of Colorado, Probate No. 04 PR 116; and

WHEREAS, Grantors were duly appointed Co-Personal Representatives of said Estate on April 28, 2004, and are now qualified and acting in said capacity;

NOW, THEREFORE, pursuant to the powers conferred upon Grantors by the Colorado Probate Code, Grantors do hereby sell, assign, transfer, convey and set over unto Grantee, for and in consideration of Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is acknowledged, the following described real property (the "Real Property"):

1. All of Grantors' right, title and interest in and to the following described real property located in Garfield County, Colorado:

Township 6 South, Range 97 West 6th PM,

Section 3: Lots 6-11, 14-16, SW1/4, containing 573.08 Acres, more or less

Section 4: Lots 10-15, E1/2SW1/4, SE1/4, containing 480 Acres, more or less

including, but not limited to, all of Grantors' right, title and interest in: (i) rights-of-way, easements, road use agreements, rights of access, surface agreements, servitudes and similar interests acquired or used in connection with the above described real property; (ii) timber; (iii) any contracts affecting the above described real property which are specified on Exhibit "A" attached hereto; (iv) any permits, authorizations, and licenses of any nature owned, held or operated in connection with the surface of the above described real property; (v) Redd Spring No. 2 located in SE1/4NW1/4 Section 3 T6S R97W, of the 6th P.M., being 1800' East of the West Section line and 1800' South of the North Section line.

0610107-CWT

After recording return to:
OXY USA WTP LP
ATTN: GREG KOPEL
5 GREENWAY PLAZA STE. 110
HOUSTON TX 77046-0506

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Source of water – Spring tributary of Little Creek which is a tributary of Light Gulch which is a tributary of Parachute Creek which is a tributary of the Colorado River. Amount of water – 0.009 c.f.s absolute; and Redd Spring No. 5 located in NE1/4SE1/4 Section 4 T6S R97W, of the 6th P.M., being 200' West of the East Section line and 3020' South of the North Section line. Source of water – Spring tributary of Little Creek which is a tributary of Light Gulch which is a tributary of Parachute Creek which is a Tributary of the Colorado River. Amount of water – 0.011 c.f.s. absolute; and (vi) all rights and privileges appurtenant to the above described real property, regardless of whether those rights and privileges appurtenant to the above described real property are specifically identified herein.

2. The Real Property does not include Grantors' right, title and interest, if any, in and to the subsurface of the Real Property, including, but not limited to: (i) any oil, gas, hardrock, and/or other minerals; (ii) rights-of-way, easements, roaduse agreements, surface agreements, servitudes and similar interests acquired or used in connection with the use of the subsurface of the Real Property; (iii) any other surface and subsurface water and water rights, belonging to, utilized for, or appurtenant to the Real Property, whether adjudicated or not adjudicated; and (iv) surface and subsurface sand and gravel (collectively referred to herein as the "Mineral Rights"). Grantors are assigning the Mineral Rights to the Grantee via a separate Quitclaim Deed.

It is the intent of the Grantors to sell, assign, transfer and convey, and Grantee to accept and acquire, all of the Grantors' right, title and interest in the Real Property.

TO HAVE AND TO HOLD the Real Property, with all its appurtenances, unto Grantee, its, heirs, successors and assigns, forever, subject to the following terms, covenants and conditions:

1. Conveyance Effective Date. This Personal Representatives' Deed shall be effective as of the Closing Date, which occurred on December 18, 2006.

2. Taxes. Grantors shall be responsible for all taxes relating to the Real Property prior to the Effective Date. Grantee shall be responsible for all taxes (exclusive of federal, state or local income taxes due by Grantors) relating to the Real Property from and after the Effective Date.

3. Ownership and Operations. Upon Closing, Grantee shall assume and perform all the rights, duties, obligations and liabilities of ownership of the Real Property, including without limitation: (i) responsibility for compliance with all applicable laws, ordinances, rules and regulations pertaining to the Real Property, and the procurement and maintenance of all permits required by public authorities in connection with the Real Property accruing after the Closing Date; and (ii) all other obligations

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assumed by Grantee under this Agreement. Grantors remain responsible for all rights, duties, obligations, and liabilities of ownership and operation of the Real Property which accrue before the Closing Date provided that the Grantors' responsibility for matters relating to the title to the Real Property shall be limited to persons claiming by, through and under the Grantors and no others.

4. Indemnities:

a. Definition of Claims. As used in this Personal Representatives' Deed, the term "Claims" means any and all losses, liabilities, damages, obligations, expenses, fines, penalties, costs, claims, causes of action and judgments arising out of, or related to, (i) breaches of contract; (ii) loss or damage to property, injury to or death of persons, and other tortious injury; and (iii) violations of applicable laws, rules, regulations, orders or any other legal right or duty actionable at law or equity. The term "Claims" also includes attorneys fees and court costs resulting from the defense of any claim or cause of action within the scope of the indemnities in this Personal Representatives' Deed.

b. Application of Indemnities. All indemnities set forth in this Personal Representatives' Deed extend to the officers, directors, employees and affiliates of the party indemnified, and cover the acts and omissions of the officers, directors, employees, contractors, successors, assigns, heirs, and trustees of the indemnifying party.

c. Grantee's Indemnity. Grantee shall indemnify, defend and hold Grantors harmless from and against any and all Claims caused by, resulting from or incidental to: (i) the rights, duties, obligations and liabilities assumed by Grantee in Section 3 and pertaining to the Real Property; (ii) any obligations for broker's fees incurred by Grantee in connection with the purchase of the Real Property; (iii) any failure by Grantee to comply after Closing with applicable laws, ordinances, rules and regulations pertaining to the Real Property, and procure and maintain permits required by public authorities in connection with the Real Property; and (iv) the breach of any representation or warranty by Grantee.

d. Grantors' Indemnity. Grantors shall indemnify, defend and hold Grantee harmless from and against any and all Claims caused by, resulting from or incidental to: (i) the rights, duties, obligations and liabilities retained by Grantors as stated in Paragraph 3; (ii) any failure by Grantors to comply with applicable laws, ordinances, rules and regulations pertaining to the Real Property prior to the Effective Date, and failure to procure and maintain permits required by public authorities in connection with the Real Property and (iii) the breach of any representation or warranty by Grantors.

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5. Special Warranty. Grantors shall and will WARRANT AND FOREVER DEFEND the above bargained Real Property in the quiet and peaceable possession of the Grantee, its heirs, successors and assigns, against all and every person or persons lawfully claiming the whole or any part thereof by, through or under said Grantors, except the Permitted Encumbrances set forth on Exhibit B, attached hereto and by this reference made a part hereof

6. Headings for Convenience. Headings used herein are for convenience only and do not constitute part of this Personal Representatives' Deed.

7. Successors and Assigns. The terms and conditions of this Personal Representatives' Deed shall extend to and be binding upon the heirs, executors, administrators, successors of, or assigns of the respective parties hereto, and shall be covenants that run with the land. However, no assignment by any party shall relieve any party of any duties or obligations under this Personal Representatives' Deed.

8. Survival. The terms and provisions of that certain Purchase and Sale Agreement, dated October 31, 2006, by and between Karen Lee Latham and Ginger Latham, co-personal representatives of the Estate of Charles Harvey Latham, and Thomas F. Latham, Grantors, and OXY USA WTP LP, Grantee ("Purchase and Sale Agreement"), survive the execution and delivery of this Personal Representatives' Deed and the transfer of the Real Property to Grantee. If Grantee sells or assigns all or a portion of the Real Property to a subsequent purchaser, the Purchase and Sale Agreement and all rights and obligations therein will remain in effect between Grantee and Grantors as to all of the Real Property, notwithstanding such sale or assignment.

In the event of a conflict between the terms and provisions of this Personal Representatives' Deed, and the terms and provisions of the Purchase and Sale Agreement, the terms and provisions of the Purchase and Sale Agreement shall prevail.

9. Further Assurances. Grantors and Grantee agree to execute and deliver from time to time such further instruments and do such other acts as may be reasonably necessary to effectuate the intents and purposes of this Personal Representatives' Deed.

10. Governing Law. This Personal Representatives' Deed is governed by and must be construed in accordance with the laws of the State of Colorado excluding any conflicts-of-law rule or principle that might apply the law of another jurisdiction.

11. Defined Terms. Undefined terms herein are defined as those terms are defined in the Purchase and Sale Agreement.

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IN WITNESS WHEREOF, Grantors have executed this Deed on December 18, 2006.

Karen Lee Latham

Karen Lee Latham, as Co-Personal Representative of the Estate of Charles Harvey Latham, Deceased

Ginger Latham

Ginger Latham, as Co-Personal Representative of the Estate of Charles Harvey Latham, Deceased

STATE OF COLORADO)
)ss.
COUNTY OF MESA)

The foregoing Personal Representatives' Deed was executed before me on this 18th day of December, 2006, by Karen Lee Latham and Ginger Latham as Co-Personal Representatives of the Estate of Charles Harvey Latham, Deceased, Seller.

WITNESS my hand and official seal.

My commission expires: 10-24-10

NOTARY PUBLIC JOAN L. CARRICO STATE OF COLORADO

Joan L Carrico

Notary Public

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EXHIBIT A
(CONTRACTS AFFECTING REAL PROPERTY)

Grant of Easements, dated May 31, 2004, by and between Thomas F. Latham and the Charles H. Latham Estate, Ginger Latham and Karen Latham, Co-Representatives, "Owner", and Williams Production RMT Company, "Grantee", dated May 31, 2004, and recorded at Book 1842, Page 15 of the real property records, Garfield County, Colorado

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EXHIBIT B
(PERMITTED ENCUMBRANCES)

Following are the Permitted Encumbrances except for item 19, which the Buyer has waived for the sole and limited purpose of the closing of this transaction; provided, however, that the Estate assumes no obligation with respect to the cure of the claimed defect in item 19. Buyer expressly reserves any and all rights, claims and/or defenses available to it, at law or in equity, relevant to the validity or invalidity of item 19.

1. Rights or claims of parties in possession not shown by the Public records.
2. Easements, or claims of easements, not shown by the public records.
3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts, which a correct survey and inspection of the premises would disclose, and which are not shown by the public records.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this commitment.
6. Any and all unpaid taxes, assessments and unredeemed tax sales.
7. Any lien or charge on account of the inclusion of subject property in an improvement district.
8. Any and all water rights, claims, or title to water, whether or not the matters excepted are shown by the public record.
9. Right of way for ditches or canals constructed by the authority of the United States, as reserved in United States Patent recorded January 25, 1928 in Book 112 at Page 464.
10. Reservation of all oil and gas and all shale or other rock valuable as a source of petroleum and nitrogen, together with the right to prospect for, mine and remove the same pursuant to the provisions and limitations of the Act of July 17, 1914 in the United States Patent recorded June 25, 1928 in Book 112 at Page 464, and any and all interests therein or assignments thereof.
11. Right of way for ditches or canals constructed by the authority of the United States, as reserved in United States Patent recorded January 25, 1928 in Book 112 at Page 465.
12. Reservation of all coal and other minerals, together with the right to prospect for, mine and remove the same pursuant to the provisions and limitations of the Act of December 29, 1916 in the United States Patent recorded June 25, 1928 in Book 112 at Page 465, and any and all interests therein or assignments thereof.
13. Right of way for ditches or canals constructed by the authority of the United States, as reserved in United States Patent recorded February 17, 1956 in Book 291 at Page 360.
14. Reservations, conditions and stipulations contained in United States Patent No. 1431391 recorded February 17, 1956 in Book 291 at Page 360 as follows:
    -That the grant hereby made is restricted in its exterior limits to the boundaries of the said mining premises, and to any veins or lodes of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper and other valuable deposits which may have been discovered within said limits subsequent to and which were not known to exist on August 7, 1953.
    -That should any vein or lode of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper or other valuable deposits, be claimed or known to exist within the above-described premises at said last-named dated, the same is expressly excepted and excluded from these presents.
15. Reservation of an undivided 5% interest in all oil and gas by Delos D. Potter and Gertrude I. Potter, in Warranty Deed recorded March 9, 1956 in Book 291 at Page 563, and any and all interests therein or assignments thereof.
16. Reservation of all oil and gas and all shale or other rock valuable as a source of petroleum and nitrogen, together with the right to prospect for, mine and remove the same by Cities Service Oil Company in Quit Claim Deed recorded May 14, 1958 in Book 308 at Page 471, and any and all interests therein or assignments thereof.
17. Reservation of all oil and gas, oil shale and minerals, together with the right to use so much of the surface as may be necessary in removing, mining and refining the same and depositing residual waste resulting therefrom and the building of roads and impounding of surface waters in connection with mining operations in Warranty Deed recorded May 29, 1961 in Book 334 at Page 264, and any and all interests therein or assignments thereof.

(Continued)

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EXHIBIT B
(PERMITTED ENCUMBRANCES)
(Continued)

18. Reservation of all minerals, together with the right to prospect for, mine and remove the same by Redd Ranches in Warranty Deed recorded December 20, 1963 in Book 355 at Page 5, and any and all interests therein or assignments thereof.

19. Conveyance to Ruth Latham of an undivided one-half interest in and to all minerals owned by Latham Ranches in Warranty Deed recorded August 20, 1987 in Book 719 at Page 510, and any and all interests therein or assignments thereof.

20. Easements granted to Williams Production RMT Company as described in Grant of Easements recorded September 12, 2006 in Book 1842 at Page 15.

21. Lack of a right of access to and from the subject property.

Preapplication Conference Summary

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

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FAX 970.263.7456

www.olssonassociates.com

GARFIELD COUNTY
Community Development Department
108 8th Street, Suite 201
Glenwood Springs, Colorado 81601
Telephone: 970.945.8212 Facsimile: 970.384.3470
www.garfield-county.com

PRE-APPLICATION CONFERENCE SUMMARY

TAX PARCEL NUMBER: 2169-214-00-026 **DATE:** May 2, 2013

PROJECT: Pond 13 Production Water Storage Facility

OWNER: OXY USA WTP LP

REPRESENTATIVE: Daniel Padilla, OXY USA WTP LP
Craig Richardson, Olsson & Associates

PRACTICAL LOCATION: Section 4, T6S, R97W
North of DeBeque off of County Road 213

ZONING: Resource Lands - Plateau

TYPE OF APPLICATION: Limited Impact Review – Water Impoundment and Storage

I. GENERAL PROJECT DESCRIPTION

The Application proposes the conversion of two existing water storage ponds to centralized water impoundments for production water. It is anticipated that the water being stored will have been separated or gravity filtered.

The facility will be located on a 17.67 acre site as part of an overall 10,303 acre property owned by OXY USA WTP LP. Two separate impoundments exist labeled east and west on the site plan. Both are estimated to be at or slightly less than one acre of surface area. Each has greater than 1 million gallons of storage capacity. The facility is served by existing pipelines.

The site plan will include a pipe storage area, solar panels, natural gas generators, pumps, and pipelines for operation of the facility. The impoundment will be upgraded with double lining, leak detection, and monitoring wells. Wildlife fencing is in place. Operational staff are anticipated to be on site only for monitoring and when water transfer/conveyance is being conducted.

II. WAIVERS

Some waivers may be appropriate given the current improvements on the site and the limited area of additional disturbance. Potential waivers from landscaping plans, water supply plans, and elements of the impact report were discussed. Application submissions need to clearly request waivers and include justification based on the review criteria contained in Sections 4-117 and 4-202 of the ULUR.

III. REGULATORY PROVISIONS APPLICANT IS REQUIRED TO ADDRESS

- Garfield County Unified Land Use Resolution of 2008, as amended
  - Article III, Zoning
    - Resource Lands Zone District (Table 3-201 & Use Tables 3-503)
  - Article IV, Application and Review Procedures
    - Limited Review Process (Section 4-104 and 4-101)
    - Submittal Requirements, Article 4, Division 2, Section 4-203 and Table 4-201
    - Waiver Provisions (Sections 4-117 & 4-202)
  - Article VII, Standards
    - Divisions 1-3 including noise, drainage and roadway standards
    - Additional Standards Applicable to Industrial Uses (Section 7-1101) and Storage (Section 7-1104)
  - Article XVI, Definitions
- CDPHE Regulations Pertaining to Storm Water Management and Air Quality as applicable
- COGCC Regulations and/or demonstration of compliance including SPCC Plans
- Garfield County Comprehensive Plan 2030: An excerpt from the Future Land Use Map is attached and shows the site in the RPN - Resource Production/Natural (RPN) area.

IV. REVIEW PROCESS

1. Pre-application Conference
2. Application submittal
3. Determination of Completeness
4. Provision of additional copies of the application for referrals
5. Scheduling of Board of County Commissioners Public Hearing and completion of public notice requirements
6. Evaluation by Director/Staff Review and Report Generation
7. Board of County Commissioners Public Hearing, Review and Action by the Board
8. A Resolution will be prepared and the Land Use Change Permit issues when conditions of approval have been met.

V. SUBMITTAL REQUIREMENTS

- Submittal requirements are detailed in Article 4, Division 2, Section 4-203 and Table 4-201
- Additional Submittal Requirements include: Application forms and fees, payment agreement form, listing of all property owners (with addresses) within 200 ft., an excerpt from the Assessor's Office mapping showing the ownerships, a listing of any mineral rights owners on the property (with addresses), authorization to represent statements/letters, evidence of ownership.

VI. APPLICATION REVIEW

a. Review by: Staff for completeness recommendation and referral agencies for additional technical review

b. Public Hearing:
___ Planning Commission
_X_ Board of County Commissioners
___ Board of Adjustment

c. Referral Agencies: May include Garfield County Road and Bridge Department, CDPHE Water Quality Division (Storm Water), Grand Valley Fire Protection District, Garfield County Environmental Health Manager, Garfield County Vegetation Manager, Garfield County Consulting Engineer, Town of DeBeque.

VII. APPLICATION REVIEW FEES

a. Planning Review Fees: $ 400

b. Referral Agency Fees: $ TBD – consulting engineer/civil engineer fees

c. Total Deposit: $ 400 (additional hours are billed at hourly rate)

General Application Processing
Planner reviews case for completeness and sends to referral agencies for comments. Case planner contacts applicant and sets up a site visit. Staff reviews application to determine if it meets standards of review. Case planner makes a recommendation of approval, approval with conditions, or denial to the appropriate hearing body.

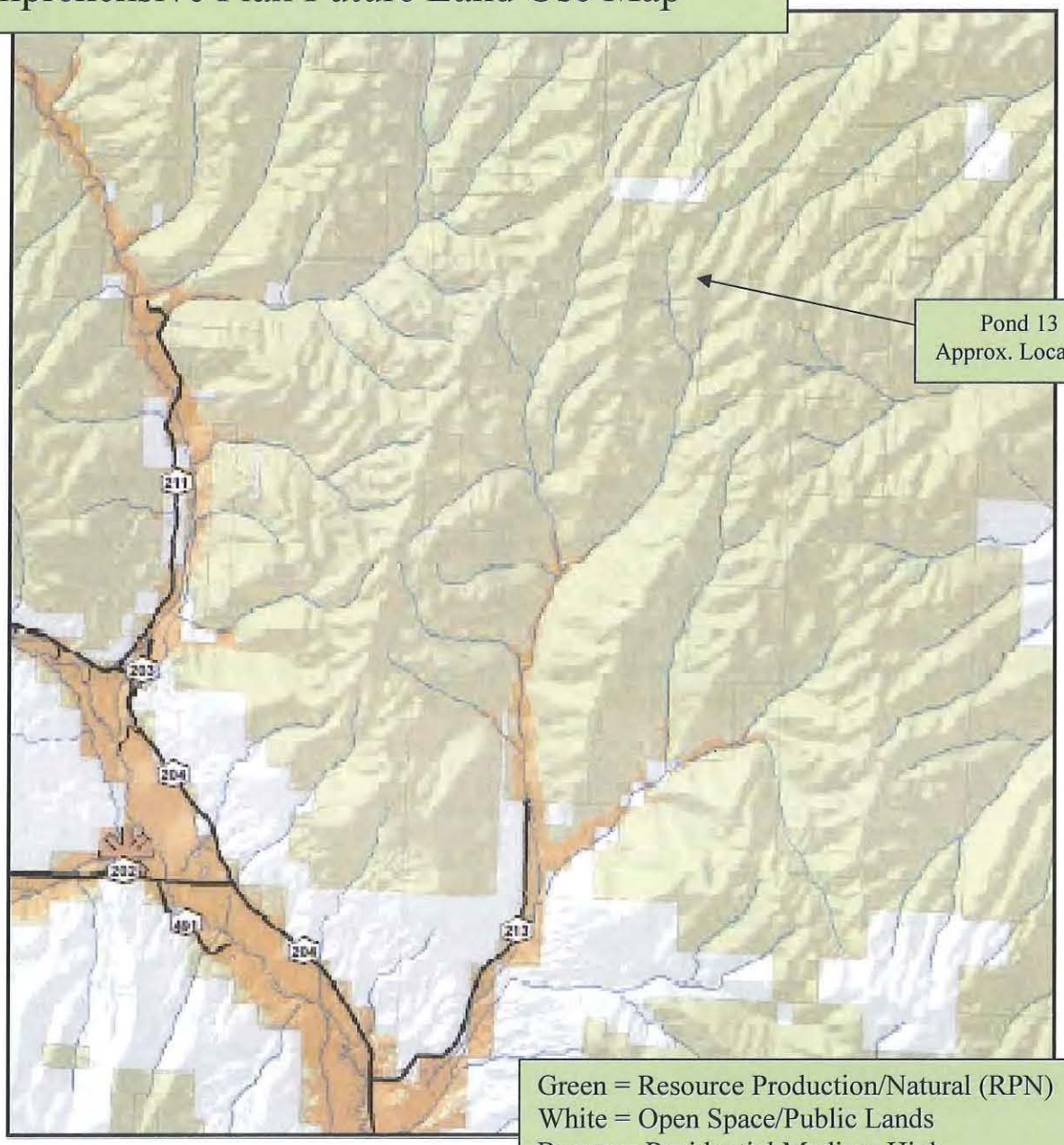
Disclaimer
The foregoing summary is advisory in nature only and is not binding on the County. The summary is based on current zoning, which is subject to change in the future, and upon factual representations that may or may not be accurate. This summary does not create a legal or vested right.

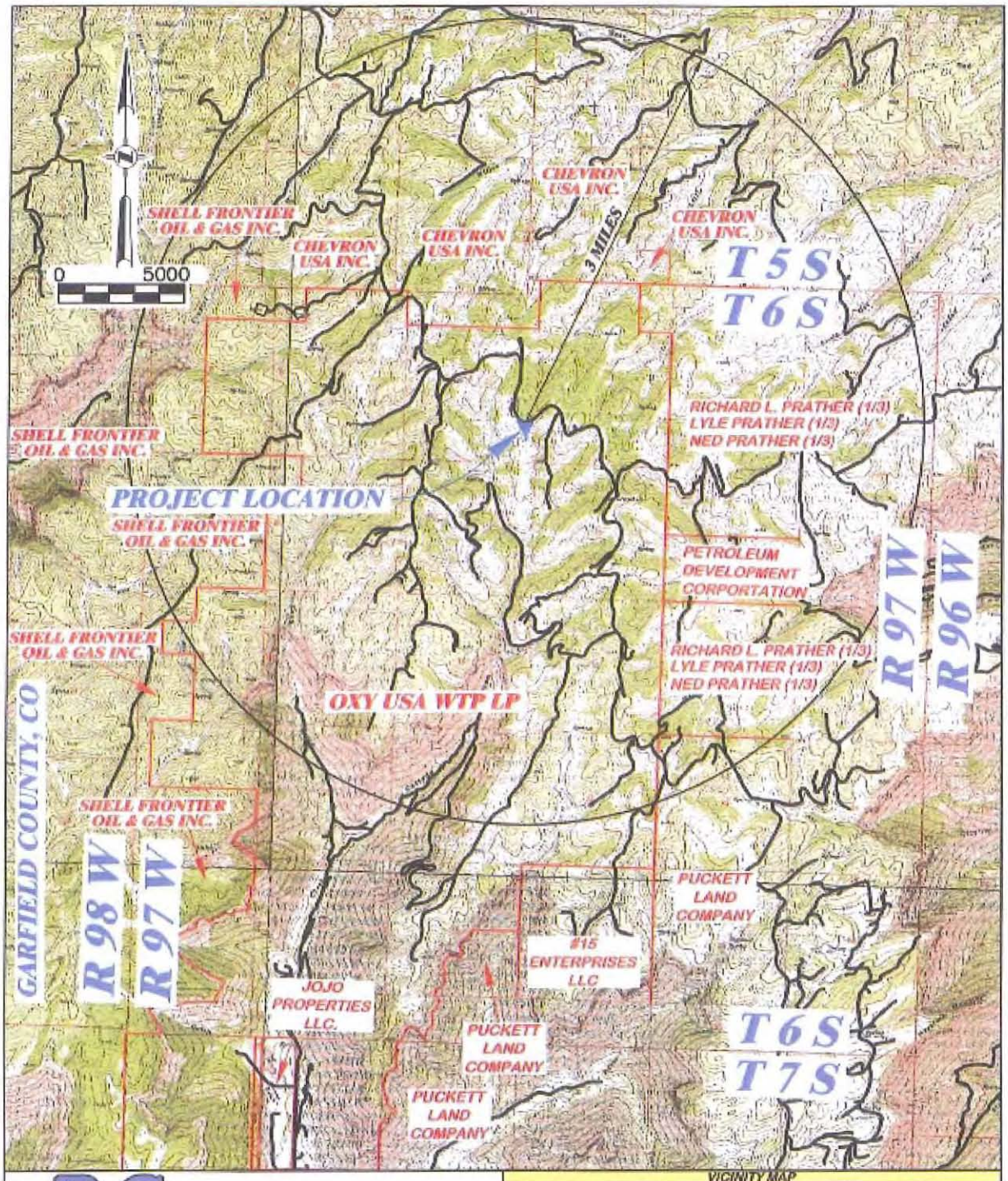
Pre-application Summary Prepared by:

5/17/13

Date

Comprehensive Plan Future Land Use Map





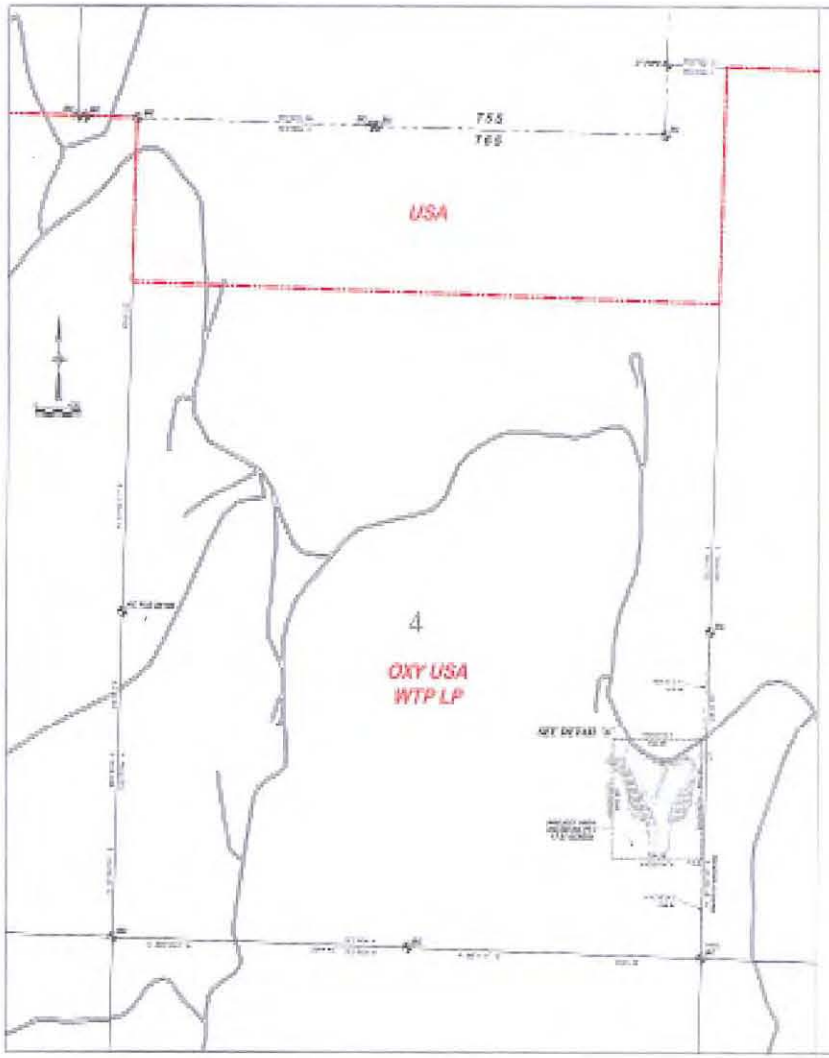
VICINITY MAP

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

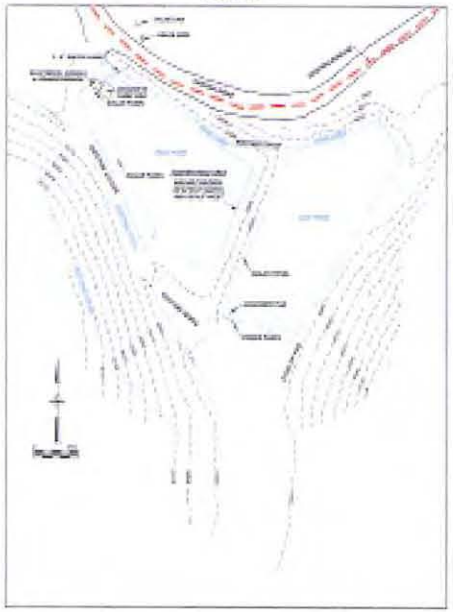
DRAWN: 4/16/2013 - RAS	SCALE: 1" = 5000'
REVISED: N/A	JOB No. 19810
	VICINITY MAP

OXY USA, WTP LP.
POND 13 LIMITED IMPACT REVIEW VICINITY MAP
SECTION 4, T.6 S., R.97 W., 6th P.M.,
GARFIELD COUNTY, COLORADO

PROPOSED LOCATION ---- EXISTING ROAD ——



DETAIL "A"



BASIS OF BEARINGS/ELEVATION

PROJECT AREA DESCRIPTION:

PRELIMINARY
FOR REVIEW AND
COMMENT

PROJECT APPLICANT:
OXY USA WTP LP
5 GREENWAY PLAZA,
SUITE 110
HOUSTON, TEXAS
77046-0506

OXY USA WTP LP
POND 13
LIMITED
IMPACT REVIEW
SITE PLAN
T 6S, R 97W
CARBON COUNTY, COLORADO

Project Description

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

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OXY USA WTP LP

Pond 13 East and West Centralized E&P Waste Management Facility

Project Narrative (Expanded)

Project Location and Background

OXY USA WTP LP (Oxy) requests approval to convert their existing Pond 13 East (Facility ID 414403) and Pond 13 West (Facility ID 414404) multi-well production pits into a Centralized Exploration and Production (E&P) Waste Management Facility (Facility). Per the Garfield County Unified Land Use Resolution, Oxy is requesting a Limited Impact Review (LIR) permit for "Materials Handling and Water Impoundment". The project area is situated in the Resource Land-Plateau zone district. The water to be handled at this facility is produced from drilling, completion and production operations associated with natural gas wells within Oxy's Cascade Creek Operations. Water that is produced from these operations is classified as an exploration and production (E&P) waste by the COGCC. Pursuant to COGCC Rule 908, this facility will also be permitted as a Centralized E&P Waste Management Facility with the COGCC. The existing produced water impoundments are currently permitted as a Form 15 use by the COGCC. Oxy is pursuing permitting for the existing water impoundments as E&P Waste Management facilities and is in the process of submitting a Form 28 to the COGCC for their review. All water stored at this location will be from a nontributary water source within the Williams Fork Formation.

The Ponds are located in the NE ¼ of the SE ¼ and the SE ¼ of the SE ¼ of Section 4, Township 6 South, Range 97 West, of the 6th Principal Meridian, in unincorporated Garfield County, Colorado.

The proposed Facility will allow for effective reuse of water volumes to conserve resources, improve safety and environmental exposure, and reduce costs. The goal of this water impoundment project is to conserve water by recycling flow-back and produced water for reuse in well stimulations or drilling. The ability to temporarily store water at this location has several key benefits:

- Reduced trucking/improved safety
- Use of engineering controlled transfer system
- Reduction in volumes of disposed water sent off site
- Conservation of freshwater

760 Horizon Drive, Suite 102 TEL 970.263.7800
Grand Junction, CO 81506 FAX 970.263.7456 www.olssonassociates.com

- Reduced road maintenance
- Reduction in overall development and operating cost

Details of this request along with the information required by Garfield County's (GarCo) LIR application are provided within the context of this submittal.

Since this application is to convert an existing production pond into a Centralized E&P Waste Management Facility, no proposed Facility structures, access roads, or surface water diversion structures will be required. The Facility has been constructed to contain 121,480 barrels of produced water which does not include the required two feet of freeboard, 68,010 barrels for Pond 13 East and 53,470 barrels for Pond 13 West. The Facility utilizes a 60-mil high-density polyethylene (HDPE) liner and a geocomposite base liner to provide sufficient bedding material for the liner. Once the Facility is approved by the COGCC for conversion, Oxy will install a leak detection system and a second 60-mil HDPE liner. The leak detection system will allow for fluid monitoring between the two HDPE liners at the Facility.

In addition to the water impoundment, storage areas as depicted on the site plan are being requested. The proposed storage area will be utilized to store equipment and supplies on-site for convenient access as needed for Oxy's natural gas drilling and production activities. Hazardous materials will not be stored at this location. The proposed use will not require additional surface disturbance. Oxy employees and contractors will be on-site for short intervals picking up or dropping off supplies. Sanitation facilities and office space have not been proposed. Portable toilets are provided throughout the area for use by field employees.

Vicinity Map

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

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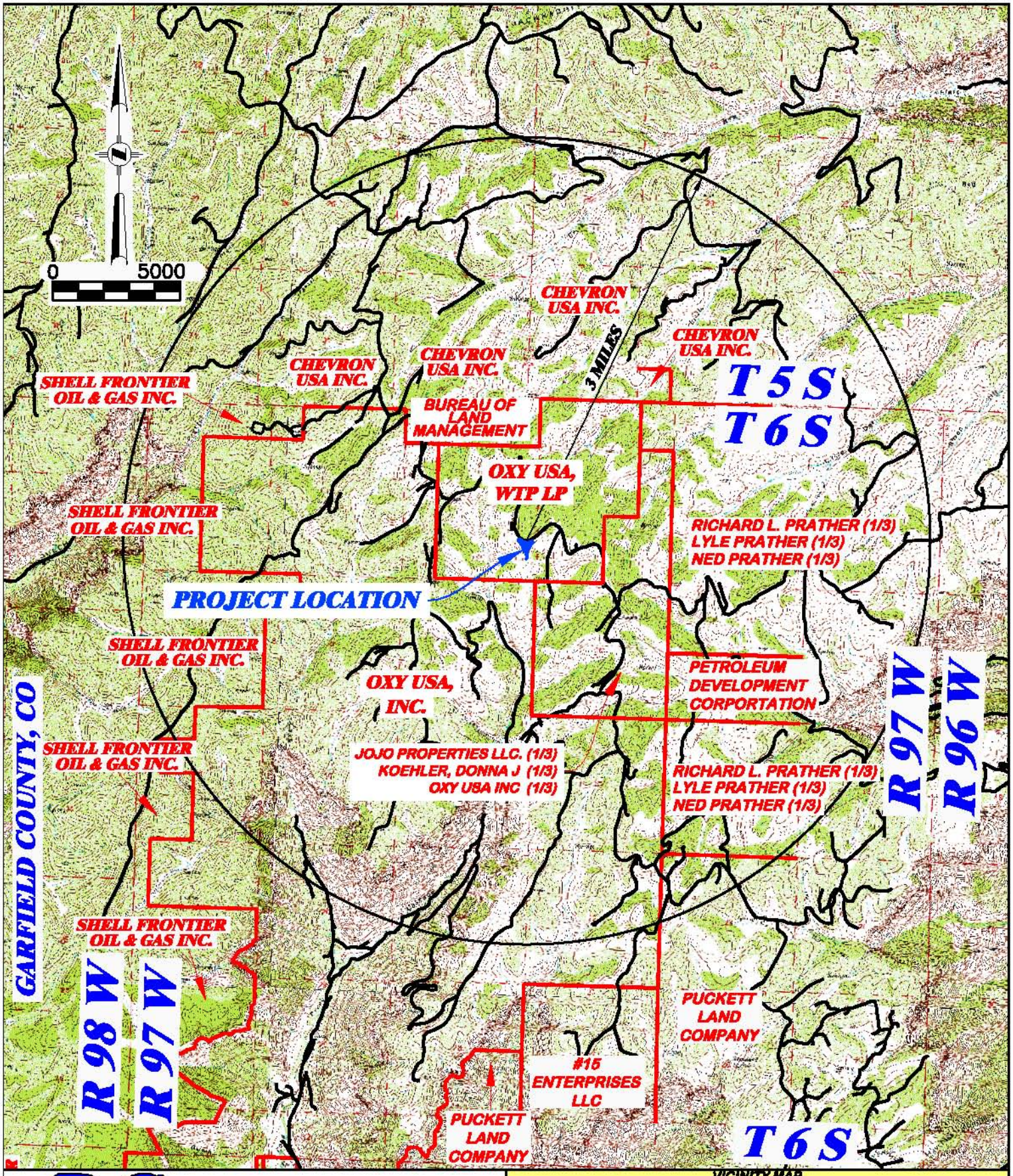

VICINITY MAP

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

OXY USA, WTP LP.
POND 13 LIMITED IMPACT REVIEW VICINITY MAP
SECTION 4, T.6 S., R.97 W., 6th P.M.,
GARFIELD COUNTY, COLORADO

DRAWN: 4/16/2013 - RAS	SCALE: 1" = 5000'
REVISED: 9/5/2013 - RAS	JOB No. 19810
UPDATE OWNERSHIP	VICINITY MAP

PROPOSED LOCATION ---- EXISTING ROAD ——

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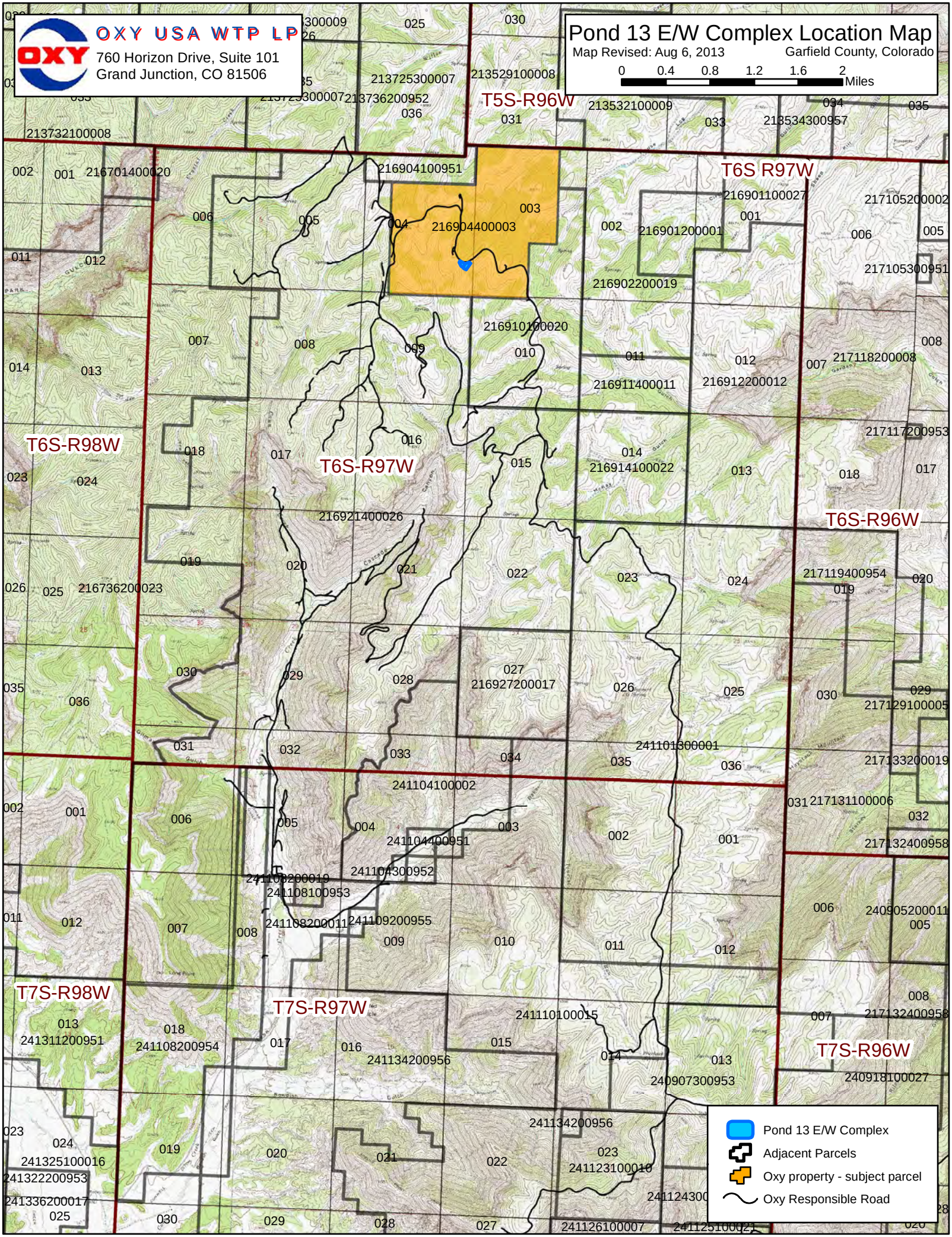
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex Location Map
Map Revised: Aug 6, 2013
Garfield County, Colorado
0 0.4 0.8 1.2 1.6 2 Miles
T5S-R96W
T6S R97W
T6S-R98W
T6S-R97W
T6S-R96W
T7S-R98W
T7S-R97W
T7S-R96W
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241134200956
241110100015
240907300953
241123100010
241325100016
241322200953
241336200017
241126100007
241125100021
Pond 13 E/W Complex
Adjacent Parcels
Oxy property - subject parcel
Oxy Responsible Road

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Site Plan

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

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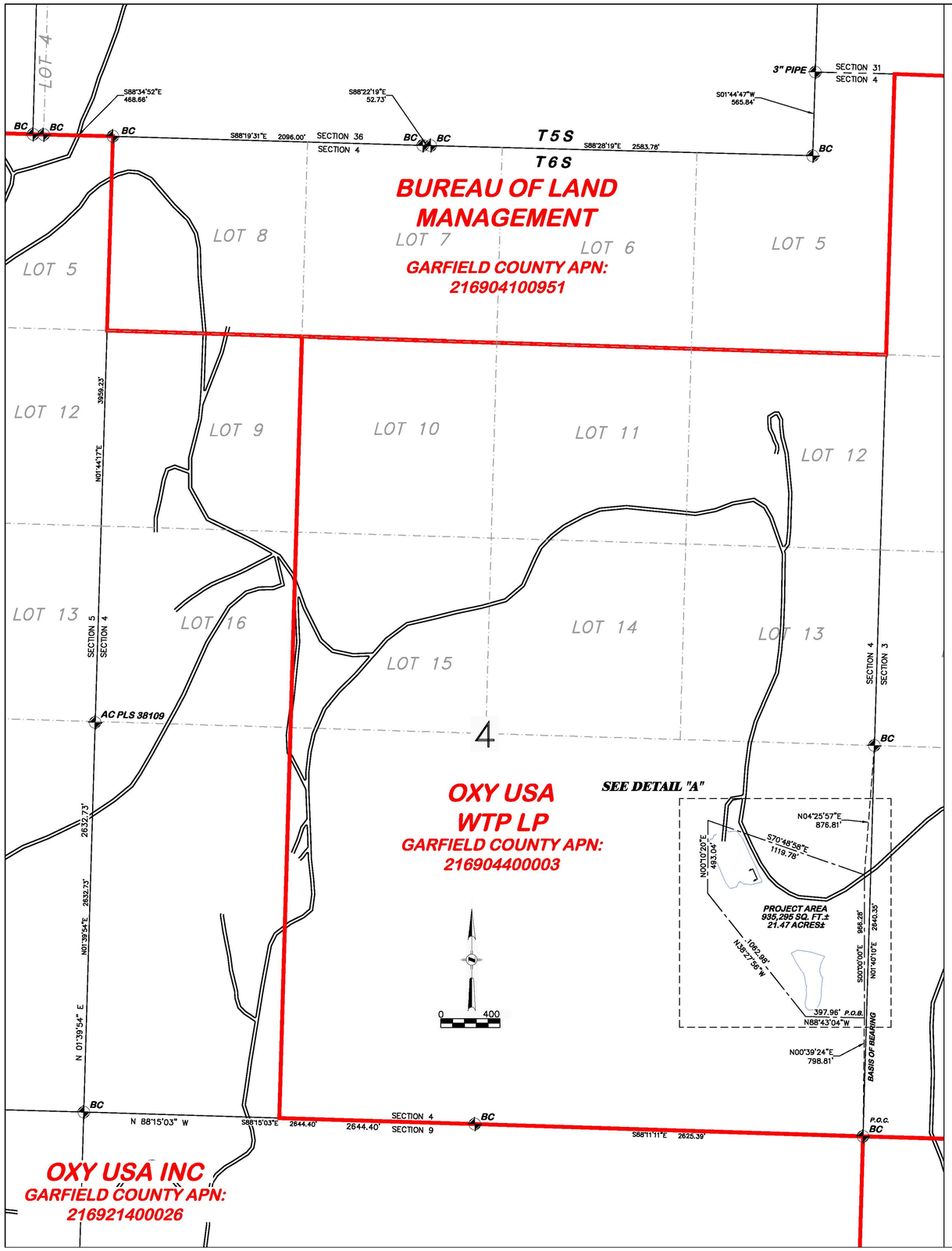
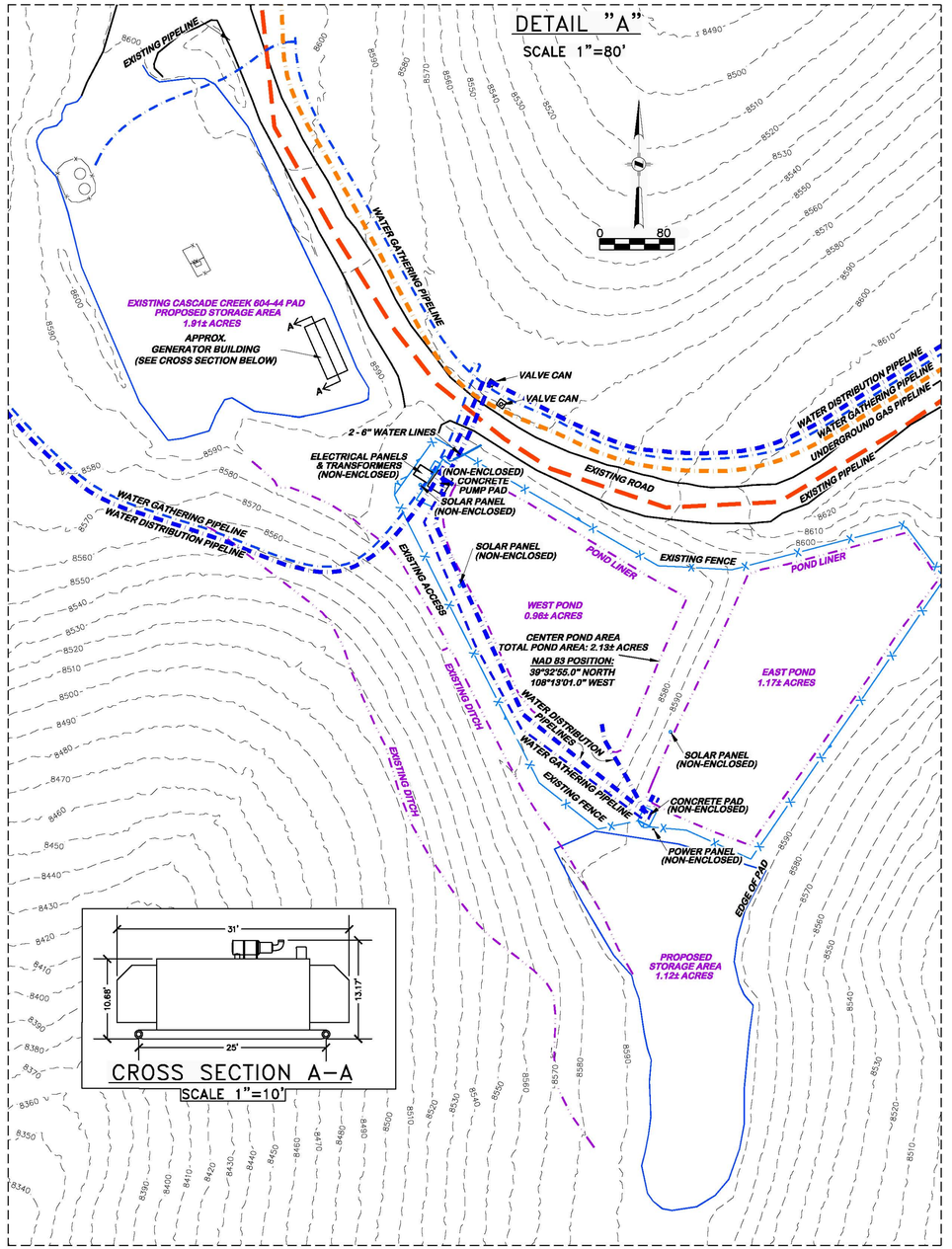




BASIS OF BEARINGS/ELEVATION

THE BASIS OF BEARINGS FOR THIS SURVEY IS REFERENCED TO THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 4, T. 6 S., R. 97 W. OF THE 6TH P.M. AS BEARING N 01°40'10" E, THE TERMINUS OF THE SAID LINE BEING MONUMENTED WITH GLO BRASS CAPS AS SHOWN.

THE BASIS OF ELEVATIONS FOR THIS SURVEY IS REFERENCED FROM USGS STATION SHALE LOCATED IN THE SOUTHWEST QUARTER OF SECTION 13, T. 7 S., R. 97 W. WITH AN ELEVATION OF 8949 FEET.

PROJECT AREA DESCRIPTION:

AN AREA OF LAND SITUATE IN THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 6 SOUTH, RANGE 97 WEST OF THE 6TH P.M., GARFIELD COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 4;
THENCE NORTH 00°39'24" EAST A DISTANCE OF 798.81 FEET TO THE POINT OF BEGINNING;
THENCE NORTH 88°43'04" WEST A DISTANCE OF 397.96 FEET;
THENCE NORTH 38°27'56" WEST A DISTANCE OF 1062.98 FEET;
THENCE NORTH 00°10'20" EAST A DISTANCE OF 493.04 FEET;
THENCE SOUTH 70°48'55" EAST A DISTANCE OF 1119.78 FEET TO A POINT FROM WHENCE THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION BEARS, NORTH 04°25'57" EAST A DISTANCE OF 876.81 FEET;
THENCE SOUTH 00°00'00" EAST A DISTANCE OF 986.28 FEET TO THE POINT OF BEGINNING;

SAID AREA OF LAND CONTAINING 935,295 SQUARE FEET OR 21.47 ACRES MORE OR LESS AND SUBJECT TO ANY EASEMENTS, OR ENCUMBRANCES OF RECORD.

LEGAL DESCRIPTION:
OXY USA, INC TO OXY USA WTP LP
PARCEL NO. 216904400003
RECEPTION 713682
GARFIELD COUNTY, COLORADO

TOWNSHIP 6 SOUTH, RANGE 97 WEST

SECTION 3: SW¼, LOTS 6–11,14–16
CONTAINING 573.08 ACRES MORE OR LESS

SECTION 4: E1/2SW1/4, SE¼, LOTS 10–15
CONTAINING 480 ACRES MORE OR LESS

NOTE: ZONING DESCRIPTION – RESOURCE LANDS

SURVEYOR'S NOTE

A PORTION OF IMPROVEMENTS SHOWN HEREON WHERE TAKEN FROM PHOTOGRAPHS PROVIDED BY OXY USA WTP LP. NO LIABILITY IS HEREBY ASSUMED BY D.R. GRIFFIN & ASSOCIATES, OR DAVID E. HENDERHAN, PLS FOR THE ACCURACY AND/OR COMPLETENESS OF THE SAID IMPROVEMENTS.

LEGEND

- OXY–UNDERGROUND GAS PIPELINE (APPROX.)
- OXY–WATER DISTRIBUTION PIPELINE (APPROX.)
- OXY–WATER GATHER PIPELINE (APPROX.)
- OXY USA WTP LP LAND
- OXY ROADS
- EXISTING DITCH
- UNDERGROUND PIPELINE
- FOUND SECTION & TRACT CORNER

REVISIONS	
EXTENDED COVERAGE AREA – DEH	5/15/13
MISC. CORRECTIONS – RAS	6/05/13
ADDED PUMP/GENERATOR – RAS	6/18/13
MISC. REVISIONS – RAS	9/5/13
ADDED SKETCHED PIPELINES – RAS	9/16/13
MISC. REVISIONS – RAS	9/17/13
ADDED SKETCHED PIT PIPELINES – RAS	10/9/13
MISC. PIPELINE REV. – DEH	10/14/13

SURVEYOR'S STATEMENT

I, DAVID E. HENDERHAN, AN EMPLOYEE AND AGENT FOR D.R. GRIFFIN & ASSOCIATES, INC. STATE THE PLAT HEREON IS A CORRECT REPRESENTATION OF A TOPOGRAPHIC SURVEY MADE UNDER MY AUTHORITY COMMENCING ON APRIL 15, 2013

FOR REVIEW AND COMMENT

COLORADO LICENSED PROFESSIONAL LAND SURVEYOR 38109

PROJECT APPLICANT:
OXY USA WTP LP
5 GREENWAY PLAZA,
SUITE 110
HOUSTON, TEXAS
77046-0506

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

OXY USA WTP LP
POND 13
LIMITED
IMPACT REVIEW
SITE PLAN
T.6 S., R.97 W.
GARFIELD COUNTY, COLORADO

SCALE:1"=400'	DRAWN BY: RAS
DATE: 4/16/2013	CHECKED BY: DEH
JOB No.: 19810	PLOT SCALE: 1"=400'
APPROVED:	SHEET 1 OF 1

Grading and Drainage Plan

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

August 13, 2013

Daniel Padilla
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81601

Re: Garfield County Grading and Drainage Plan
Pond 13 and Storage Area

Dear Mr. Padilla:

Olsson Associates (Olsson) has conducted a review of the existing conditions for the preparation of the Grading and Drainage Plan.

The project has been designed in accordance with the Colorado Oil and Gas Conservation Commission (COGCC) standards. The planned use of the site is a water impoundment and storage area. A Reclamation Plan has been prepared by Olsson Associates to accommodate this project.

Grading and Drainage Plan

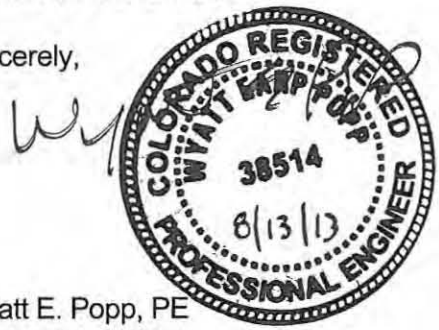
1. Site Map: The proposed site will not differ from the existing site. The existing site features are identified within the Reclamation Plan.
2. Drainage Structures: Additional design is not anticipated since the proposed site and the existing site are the same. Additional disturbance is not anticipated.
3. Topography: The attached exhibit within the Reclamation Plan illustrates the existing topography of the site. Additional grading is not anticipated.
4. Grading Plan: The existing topography is anticipated to remain.
5. Soil Stockpile and Snow Storage Areas: Soil stockpiles and snow storage is not anticipated to differ from the existing use.
6. Drainage Plan: The existing drainage patterns are not anticipated to be modified.
7. Equipment Storage Areas: A proposed use of the facility is for storage. No hazardous material is expected to be stored at the site. Best management practices outlined within the stormwater management plan referenced in the Reclamation Plan will be followed.
8. Temporary Roads: Temporary roads are not anticipated with the development. The existing infrastructure is expected to serve the site.
9. Areas of Steep Slope: The existing side slopes surrounding the site are steeper than 20% and are expected to remain undisturbed.
10. Construction Schedule: A construction schedule is not anticipated since the site currently exists.
11. Permanent Stabilization: The site is currently stabilized through the use of existing vegetation.

12. Erosion Control Measures: Erosion control measures are not anticipated since the site is currently stabilized.
13. Estimated Cost: Construction was under an APD. This is an existing site and no new construction is anticipated.
14. Calculations: Drainage design is not included since there are no anticipated changes to drainage patterns.
15. Neighboring Areas: The site is surrounded by oil and gas activity.
16. Stormwater Management: Stormwater management will be in accordance with the previously prepared stormwater management plan referenced within the Reclamation Plan.
17. Stormwater Management Plan: A copy of the permit is included within the Reclamation Plan.
18. Reclamation Plan: A Reclamation Plan is included with the submittal.
19. Hydraulic Calculations: Drainage design is not included since there are no anticipated changes to drainage patterns.
20. Maintenance Requirements: Maintenance requirements are discussed within the stormwater management plan referenced within the Reclamation Plan.
21. Spill Prevention Control and Countermeasures Plan: Not applicable.
22. Additional Information: None.
23. Signature Block: See below.

Additional construction is not anticipated, therefore, the previously stabilized areas are not anticipated to be disturbed.

If you should have any questions regarding the site observations or the documents provided please let me know.

Sincerely,



Wyatt E. Popp, PE
Olsson Associates
Senior Project Engineer

760 Horizon Drive, Suite 102
Grand Junction, CO 81506
TEL 970.263.7800
FAX 970.263.7456
www.oaconsulting.com

RECLAMATION AND EROSION CONTROL PLAN

POND 13

GARFIELD COUNTY, COLORADO

PREPARED FOR:
OXY USA WTP LP
760 HORIZON DRIVE, SUITE 101
GRAND JUNCTION, CO 81505
PH: (970) 263-3668
CONTACT: DANIEL PADILLA

PREPARED BY:
OLSSON ASSOCIATES
CONTACT: WYATT E. POPP, PE

AUGUST 13, 2013

OLSSON ASSOCIATES
PROJECT NO. 013-0655

760 Horizon Drive, Suite 102 | Grand Junction, CO 81506 | 970.263.7800 | Fax 970.263.7456

TABLE OF CONTENTS

LIST OF ATTACHMENTS

Reclamation Plan

Oxy has developed a water impoundment, Pond 13, and storage area. Upon closure of the site, revegetation activities are anticipated to take no longer than forty (40) days weather permitting. Upon closure of the site, the disturbed area will be re-contoured at slopes no greater than 2:1 to catch the existing terrain. Topsoil will be replaced on the disturbed areas. The entire disturbed area will be reseeded with the following seed mixture:

Mixed Mountain Shrubland, Including Oakbrush

Common Name	Scientific Names	Form	PLS lbs/acre*
Thickspike Wheatgrass	*Elymus lanceolatus ssp. lanceolatus, Agropyron dasystachyum*	Sod-forming	3.4
Bluebunch Wheatgrass	*Pseudoroegneria spicata, Agropyron spicatum*	Bunch	3.7
Bottlebrush Squirreltail	*Elymus elymoides, Sitanion hystrix*	Bunch	2.7
Slender Wheatgrass	*Elymus trachycaulus, Agropyron trachycaulum*	Bunch	3.3
Canby Bluegrass	*Poa canbyi, P. secunda*	Bunch	0.6
Mutton Bluegrass	*Poa fendleriana*	Bunch	0.6
Letterman Needlegrass	*Achnatherum [Stipa] lettermanii*	Bunch	1.7
Columbia Needlegrass	*Achnatherum [Stipa] nelsonii, Stipa Columbiana*	Bunch	1.7
Indian Ricegrass	*Achnatherum [Oryzopsis] hymenoides*	Bunch	1.9
Junegrass	*Koeleria macrantha, K. cristata*	Bunch	0.1

***Based on 60 pure live seeds (PLS) per square foot, drill-seeded. Double this rate (120 PLS per square foot) if broadcast or hydroseeded.**

Top Soil Management

Topsoil has been reutilized during the initial construction of the site for initial reclamation. During closure of the site the topsoil will be re-stockpiled so that it will not interfere with closure activities. Should the reclamation activities during the closure phase exceed forty (40) days, appropriate measures will be taken to protect all topsoil stockpiles (covering, seeding, windbreaks, etc.).

Following final contouring, all disturbed areas will be covered evenly with the stockpiled topsoil. The topsoil will be heavily pocked using the excavator bucket to form an uneven soil surface

complex which will aid in revegetation. Soil amendments or import of new topsoil is not anticipated. Review of the vegetation establishment will be required to determine whether soil amendments are required at a later date. (Attachment A).

Seeding Procedures and Schedules

As recommended grass mixture reseeding will be done in late autumn in order to take advantage of natural precipitation for the region. The reseeding rate should be doubled for broadcast application. Oxy's contractor will utilize a no-till-drill without any soil preparation other than simple grading to slope and waterbars, where applicable. It is anticipated that the disturbed areas will be returned to match the original vegetative state.

Seeding will be conducted by means of drilling the prescribed seed mix according to the recommended rate. The seed will be drilled with a common range drill at a depth of 0.25 – 0.5 inch beneath the soil surface. The reseeding will be monitored and reseeded as appropriate until the reclamation standards are acceptable to Garfield County Vegetation Management. The reclaimed site will be monitored for stormwater and noxious weeds.

Disturbance area

The project has an anticipated total disturbance of approximately 3.25 acre. (141,570 square feet).

Engineer's Opinion of Probable Cost

Below is a table that outlines the estimated costs associated with the revegetation of the project during final closure. There are no costs associated with the initial reclamation. The estimate is an opinion of probable cost and may vary based upon site conditions encountered or market conditions related to the unit cost.

Olsson Associates
760 Horizon Drive, Suite 102
Grand Junction, CO 81506

REVEGETATION COST SUMMARY

PROJECT: Pond 13
LOCATION: Garfield County, CO
DATE: 8/13/13

Item Description (Source of Cost)	**Cost/ Acre**
Garfield County Vegetation Management	$2,500
Total Acres	3.3
Estimated Total Cost (costs have been provided by Garfield County Vegetation Management)	$8,250

Drainage and Erosion Control Plan

The primary disturbance anticipated with the closure Pond 13 is re-grading. Topsoil will be stockpiled so that it will not interfere with closure activities. Should the construction activities during the closure phase exceed forty (40) days, appropriate measures will be taken to protect all topsoil stockpiles (covering, seeding, windbreaks, etc.). The final reclamation plans prepared by D.R. Griffin and Associates, Inc illustrate the proposed final grades.

Drainage

Nolte Associates prepared the *Regional Drainage* Analysis. The improvements associated with this project are located within the CA04 and OS18 drainage basins as described within the *Regional Drainage Analysis*. This project is not anticipated to significantly alter the drainage patterns or flow rates described within the *Regional Drainage Analysis*. Additional analysis may be warranted due to the nature of construction activity associated with this project. However, it is expected that existing drainage measures will be maintained. Deviation from the *Regional Drainage* Analysis is not expected, however, if site conditions dictate a deviation then a Colorado Registered Professional Engineer shall be consulted. The *Regional Drainage Analysis* prepared by Nolte Associates demonstrating drainage patterns for the project area is included as Attachment B.

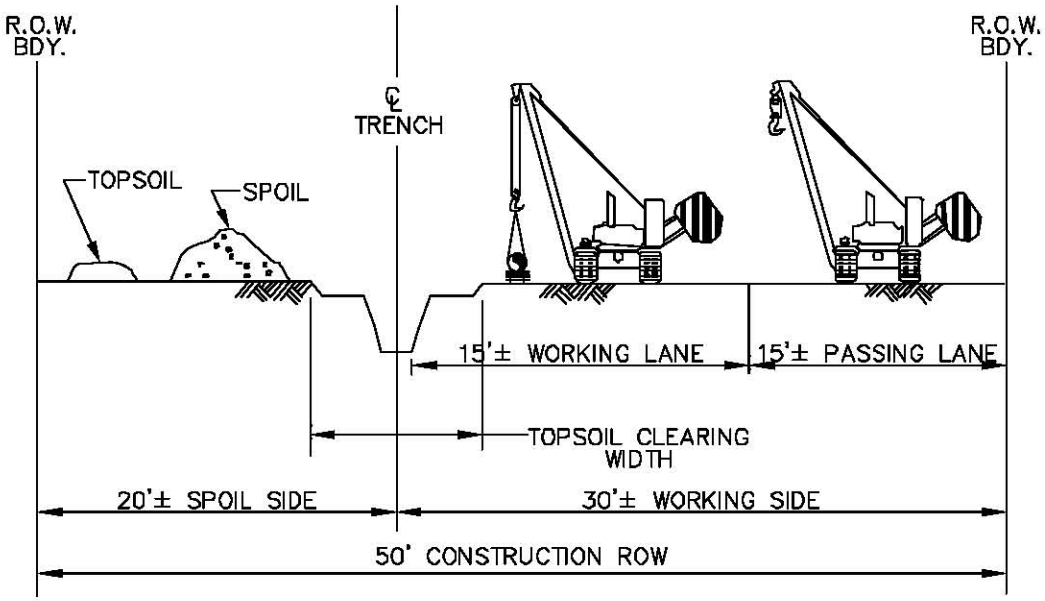
Erosion Control Measures

Olsson Associates prepared a *Stormwater Management Plan (SWMP) for Cascade Creek Development*. It is anticipated that the project will be in conformance with Oxy's *SWMP (permit no. COR038414)*. The *Stormwater Management Plan* will be revised accordingly. An exhibit demonstrating approximate locations of anticipated erosion control measures is included as Attachment C. Closure will be completed as described in the Reclamation Plan and SWMP.

The recommendations associated with the Reclamation Plan and review of the Drainage and Erosion Control Plan were prepared on behalf of Olsson Associates under the supervision of:

Wyatt E. Popp, PE
Olsson Associates

Attachment A
Top Soil Salvage



– 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 BACKHOLE OR WHEELED DITCHER.

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.

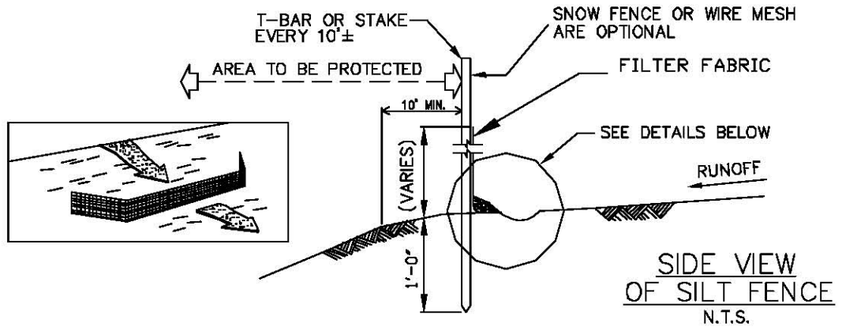
TYPICAL
R.O.W. SECTION BLADE WIDTH
TOPSOIL SALVAGE

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

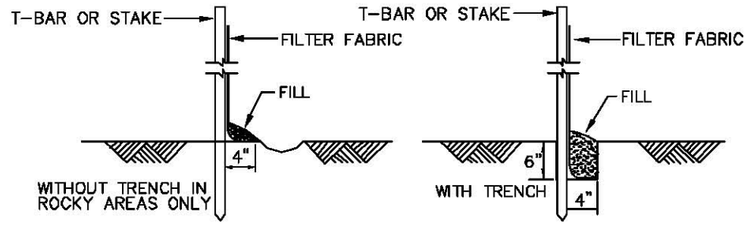
SCALE: NONE
C&E No.: 9145
DATE:

REVISIONS

NO.	DATE	DESCRIPTION	DRF	CHK	APR



SIDE VIEW OF SILT FENCE
N.T.S.



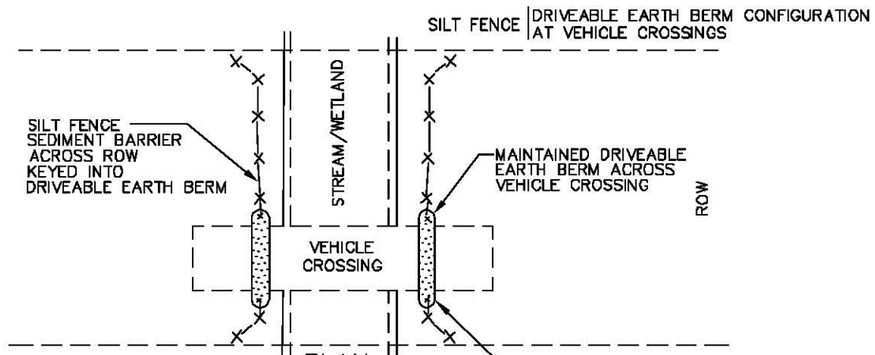
NOTE:

1. GENERALLY WHEN A LONG SEDIMENT BARRIER IS REQUIRED, SILT FENCE WILL BE UTILIZED RATHER THAN STRAW BALES AT:
   - A. THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND PERENNIAL AND INTERMITTENT STREAMS.
   - B. THE DOWN SLOPE ROW EDGE WHERE ANY OF THE ABOVE MENTIONED LOCATIONS ARE IMMEDIATELY ADJACENT TO THE ROW, AS REQUIRED BY THE COMPANY.
   - C. BETWEEN SPOIL STOCKPILES AND FLOWING STREAMS OR WETLANDS WHERE BUFFER ZONE REQUIREMENTS CANNOT BE MET.
   - D. AS DIRECTED BY THE COMPANY
2. THE FOLLOWING SILT FENCE SHALL BE CONSTRUCTED AS FOLLOWS:
   - A. FABRIC USED FOR THE SILT FENCE SHALL BE A "STANDARD STRENGTH" GEOTEXTILE, SUCH AS MIRAFI 100X OR AN APPROVED EQUIVALENT.
   - B. THE FABRIC SHALL BE CUT FROM A CONTINUOS FABRIC ROLL.
   - C. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36".
   - D. SPLICES SHALL ONLY BE DONE AT POSTS AND SHALL CONSIST OF A MINIMUM OF 6" OF OVERLAP WITH BOTH ENDS SECURED TO THE POST.
   - E. POSTS SHALL BE POSITIONED A MAXIMUM OF 10' APART.
   - F. POSTS SHALL CONSIST OF 2" x 2" WOODEN STAKES OF SUFFICIENT LENGTH TO EXTEND A MINIMUM OF 12" INTO THE GROUND.
   - G. FABRIC SHALL BE STAPLED OR WIRED TO POSTS, A MINIMUM OF EVERY 9".
3. THE SILT FENCE SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER OR AS FOLLOWS:
   - A. A TRENCH, 4" WIDE AND 6" DEEP, SHALL BE EXCAVATED ALONG THE CONTOUR. THE POSTS SHALL BE DRIVEN INTO THE BOTTOM OF THE TRENCH ON THE DOWNSTREAM SIDE OF THE FILTER FABRIC. THE TRENCH SHALL BE BACK FILLED AND COMPACTED, ENSURING 6" OF FENCE IS BURIED WITHIN THE TRENCH.
   - B. IN AREAS WHERE THE TERRAIN IS TOO ROCKY FOR TRENCHING A 4" GROUND FLAP WITH ROCK FILL TO HOLD IT IN PLACE SHALL BE USED.

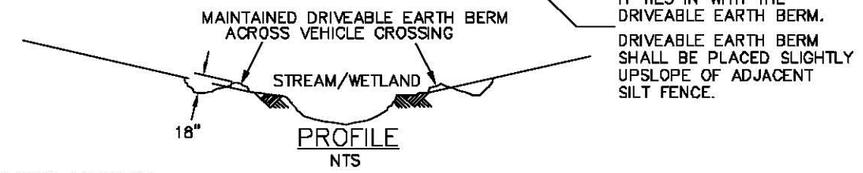
NOTES:

3. C. 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 INCREASE PONDING.
   - A. 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.
   - B. UPON THE REQUEST OF THE COMPANY., SNOW FENCE, STRAW BALES OR WIRE MESH SHALL BE USED IN CONJUNCTION WITH THE SILT FENCE. IF WIRE MESH OR SNOW FENCE ARE USED, THE WIRE SHALL BE ATTACHED TO THE POSTS USING WIRE TIES OR HEAVY DUTY STAPLES PRIOR TO INSTALLATION OF THE FABRIC. THE WIRE OR SNOW FENCE SHALL BE "KEYED" INTO THE TRENCH AT LEAST 2" AND EXTEND UP THE POSTS TO THE TOP OF THE FABRIC.
   - C. IF REQUIRED, A 15' 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 24" 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 INSPECTION REVEAL SEDIMENT LOADING AT OR NEAR 40% CAPACITY, THE SEDIMENT SHALL BE REMOVED AND PLACED IN AN AREA WHERE IT SHALL NOT REENTER 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.

SILT FENCE | DRIVEABLE EARTH BERM CONFIGURATION AT VEHICLE CROSSINGS



PLAN
NTS



PROFILE
NTS

ENDS OF SILT FENCE SHALL BE TURNED UPSLOPE WHERE IT TIES IN WITH THE DRIVEABLE EARTH BERM.

DRIVEABLE EARTH BERM SHALL BE PLACED SLIGHTLY UPSLOPE OF ADJACENT SILT FENCE.

DRIVEABLE BERM NOTES:

A MAINTAINED DRIVEABLE EARTH BERM MAY BE INSTALLED ACROSS VEHICLE CROSSINGS IN LIEU OF SILT FENCE. BERM MUST BE TIED INTO SILT FENCE.

3. BERM MUST BE MAINTAINED TO ENSURE SEDIMENT TRAPPING CAPACITY.

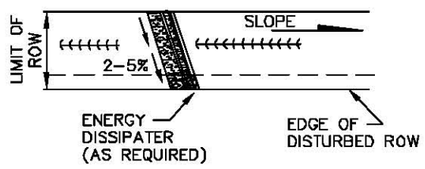
TYPICAL SILT FENCE SEDIMENT BARRIOR

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

SCALE: NONE
C&E No: 9108
DATE:

REVISIONS

NO.	DATE	DESCRIPTION	DRF	CHK	APR



PLAN VIEWS
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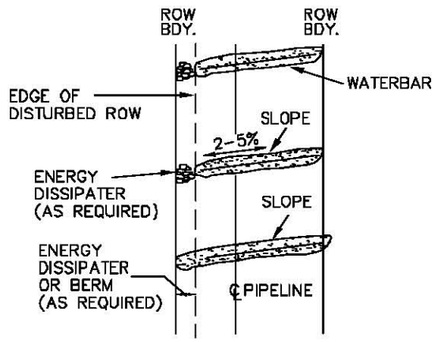

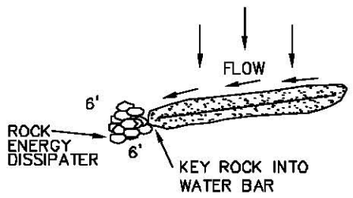

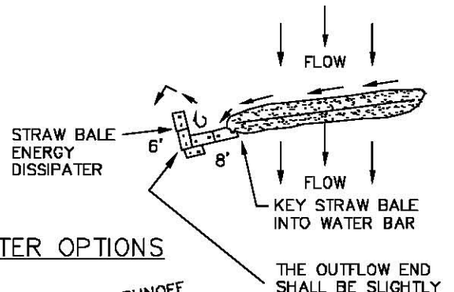

FLOW ENERGY DISSIPATER OPTIONS
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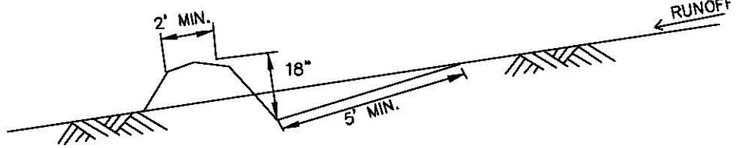


WATER BAR X–SECTION DETAIL
N.T.S.

NOTES:

1. WATERBARS SHALL BE INSTALLED ON THE RIGHT–OF–WAY AND DIRT ROADS AT LOCATIONS AND SPACINGS STATED IN THE BLM R.O.W. STIPULATIONS, CONTRACT SPECIFICATIONS, THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY COMPANY.
2. WATERBARS SHALL BE ORIENTED AS SHOWN OR OTHER PATTERN AS DIRECTED BY THE COMPANY TO DIRECT THE WATER FROM THE SLOPE.
3. WATERBARS SHALL BE CONSTRUCTED AT A 2–5%
4. THE WATERBAR SHALL BE 18" DEEP (AS MEASURED FROM THE TROUGH TO TOP OF WATERBAR). THE TROUGH WILL BE A MINIMUM OF 5' 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.

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 PERMITS (AND AN ENERGY DISSIPATER IS NOT REQUIRED), THE BERM (AND NOT THE TROUGH) SHALL EXTEND 5' 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 REGULAR MONITORING, WATERBARS SHALL BE CHECKED FOR INTEGRITY PROBLEMS. IF NECESSARY, BERMS SHALL BE REPAIRED AND SEDIMENT REMOVED FROM THE TROUGH.
10. WATERBARS WILL NOT BE INSTALLED IN CULTIVATED OR IRRIGATED FIELDS.

FLOW ENERGY DISSIPATER NOTES:

1. THE OUTLET SHALL CONTAIN AN ENERGY DISSIPATER IF COMPANY REPRESENTATIVE DETERMINES EXISTING VEGETATION IS NOT SUFFICIENTLY STABLE TO PREVENT EROSION. THE ENERGY DISSIPATER SHALL BE CONSTRUCTED AS FOLLOWS:
   IF SILT FENCE OR STRAW BALE DISSIPATOR IS USED:
   - OUTFALL END OF DISSIPATER SHOULD BE LOWER THAN THE POINT WHERE THE DISSIPATOR TIES INTO THE WATERBAR.
   - SILT FENCE OR STRAW BALE DISSIPATER SHALL BE EITHER KEYED INTO END OF WATERBAR, OR PLACED SLIGHTLY DOWNSLOPE OF WATERBAR.
   - PROVIDE ENOUGH AREA INSIDE "L" TO CAPTURE AND HOLD SEDIMENT.
2. TEMPORARY WATERBARS SHALL BE INSTALLED IMMEDIATELY AFTER INITIAL GRADING, AND WILL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL REPLACED BY PERMANENT WATERBARS. TEMPORARY WATERBARS SHALL BE INSTALLED ABOVE STREAMS, WETLANDS, AND ROADS. ENVIRONMENTAL AND CONSTRUCTION INSPECTOR MAY REQUIRE INSTALLATION OF TEMPORARY WATERBARS ON OTHER SLOPES OR AT CLOSER SPACINGS THAN SPECIFIED BELOW IF WARRANTED 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. ENVIRONMENTAL AND CONSTRUCTION INSPECTORS 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)
< 5%	NONE
5–15	300'
16–30	200'
>30%	100'

PRIVATE & STATE LANDS

SLOPE (%)	SPACING (FT)
0–2	400'
2–5	300'
5–10	200'
10–20	100'
20+	50'

FEDERAL LANDS

5. SPACING AND OTHER WATERBAR REQUIREMENTS STATED IN THE BLM R.O.W. GRANT STIPULATIONS AND LANDOWNER AGREEMENTS, IF ANY, SHALL SUPERCEDE THE ABOVE.

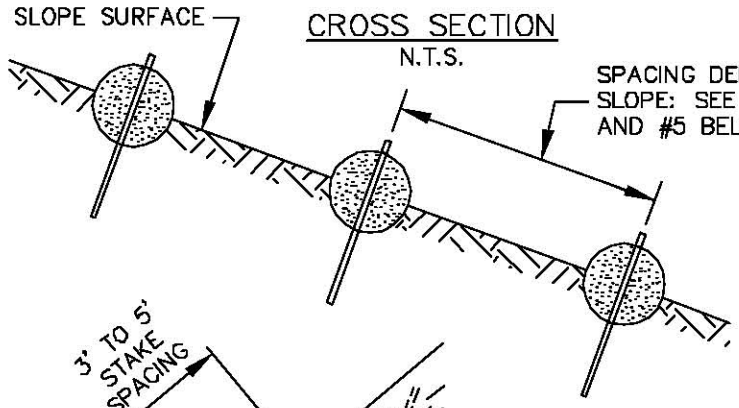
TYPICAL WATERBAR (SLOPE BREAKER)

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

SCALE: NONE
C&E No: 9110
DATE:

REVISIONS

NO.	DATE	DESCRIPTION	DRF	CHK	APR



CROSS SECTION
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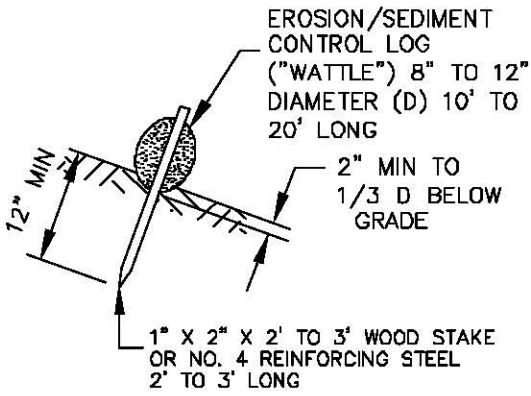

DETAIL 1
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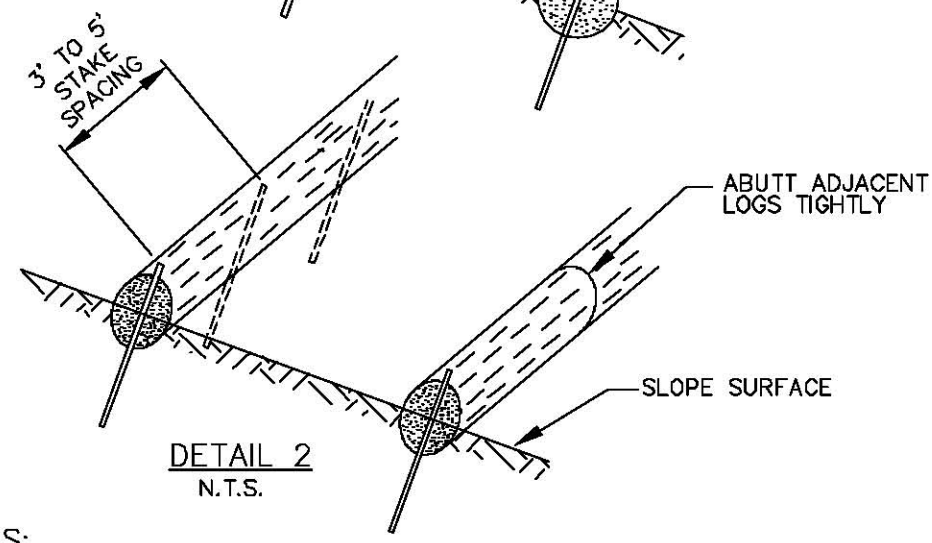


DETAIL 2
N.T.S.

NOTES:

1. EROSION CONTROL/SEDIMENT ("WATTLE") LOGS SHALL BE INSTALLED ON SLOPES AS SHOWN ON THE ALIGNMENT SHEETS, DESIGNATED IN THE PROJECT STORM WATER MANAGEMENT PLAN (SWMP) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
2. EROSION CONTROL/SEDIMENT LOGS SHALL BE MADE OF SHREDDED ASPEN, STRAW, OR SIMILAR VEGETATIVE MATERIAL FREE OF THISTLE AND OTHER NOXIOUS WEEDS AND WRAPPED IN TUBULAR BLACK PLASTIC NETTING OR OTHER APPROVED ENCLOSURE. THE NETTING SHALL HAVE A STRAND THICKNESS OF ABOUT 0.03", A KNOT THICKNESS OF ABOUT 0.055", AND WEIGHT OF ABOUT 0.35 OZ/FT. THE NETTING SHALL BE MADE OF 85% HIGH-DENSITY POLYETHYLENE, 14% ETHYL VINYL ACETATE, AND 1% COLOR FOR UV INHIBITION OR OTHER APPROVED COMPOSITION.
3. COMMERCIAL PRODUCTS THAT SATISFY THESE REQUIREMENTS INCLUDE AMERICAN EXCELSIOR LOGS, STRAW LOGS BY GREENFIX AMERICA OR STRAW WATTLES BY CALIFORNIA STRAW WORKS.
4. WHERE DESIGINATED FOR INSTALLATION ON THE ALIGNMENT SHEETS, IN THE SWMP OR REQUESTED BY THE ENVIRONMENTAL INSPECTOR, EROSION CONTROL/SEDIMENT LOGS SHALL BE INSTALLED AT THE FOLLOWING SPACINGS:

PRIVATE & STATE LANDS

SLOPE (%)	SPACING (FT)
< 5%	NONE
5-15	300'
16-30	200'
>30%	100'

FEDERAL LANDS

SLOPE (%)	SPACING (FT)
0-2	400'
2-5	300'
5-10	200'
10-20	100'
20+	50'

5. SPACING REQUIREMENTS STATED IN THE BLM R.O.W. GRANT STIPULATIONS AND LANDOWNER AGREEMENTS, IF ANY, SHALL SUPERCEDE THE ABOVE.

TYPICAL EROSION CONTROL / SEDIMENT ("WATTLE") LOGS

GRIFFIN & ASSOCIATES, INC.

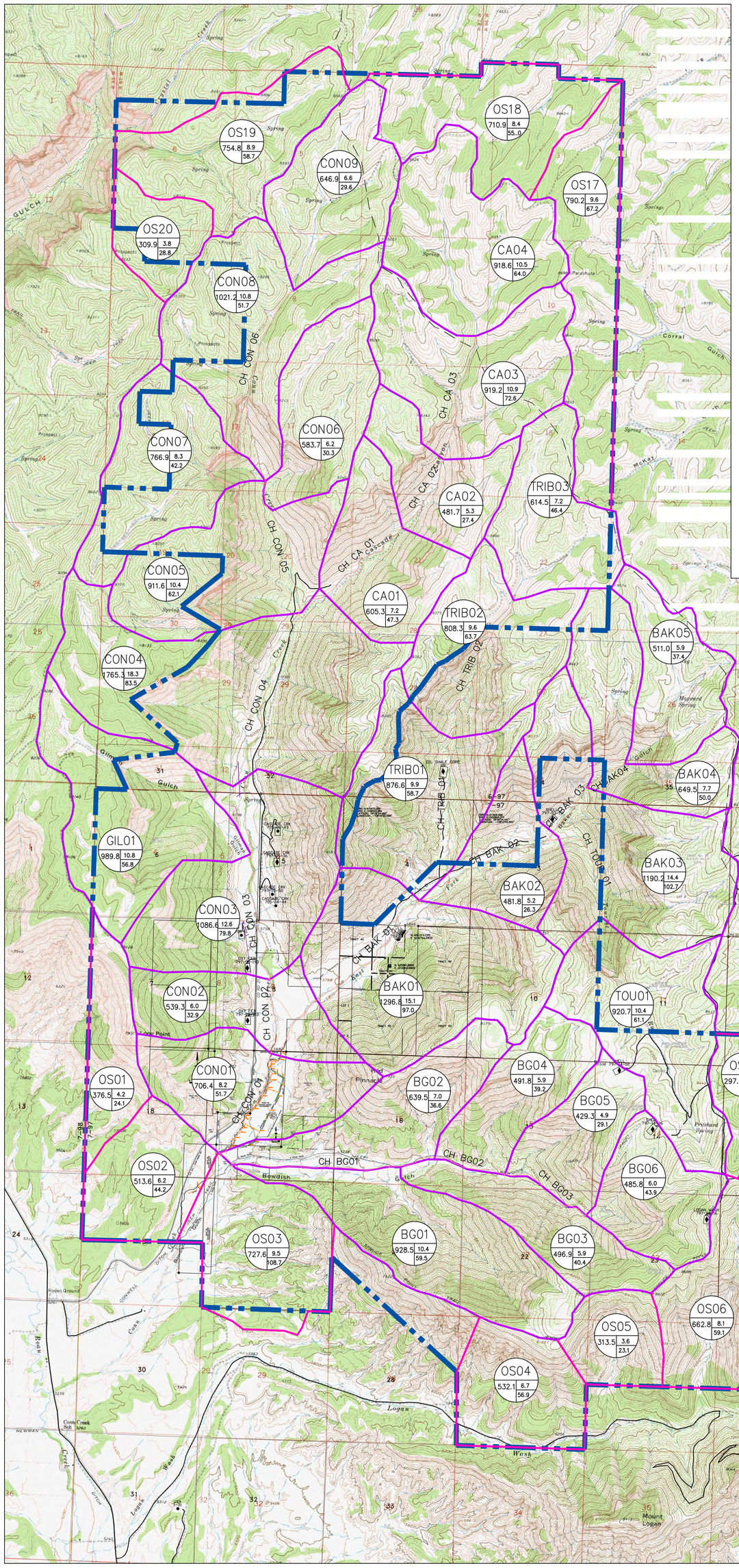
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

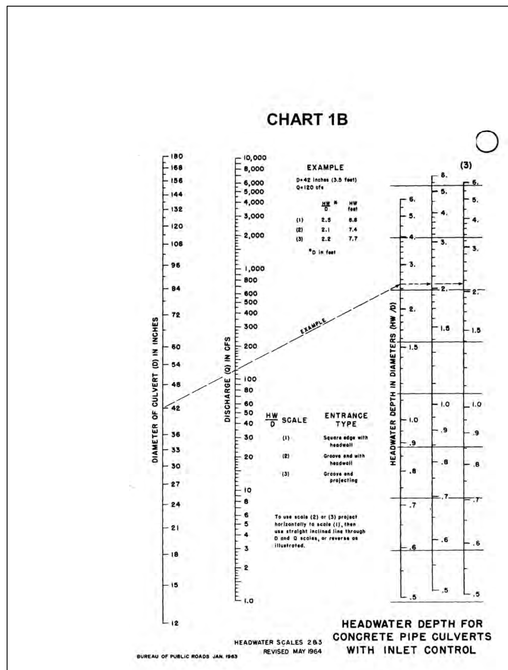
SCALE: NONE
C&E No.: 9167
DATE:

REVISIONS

NO.	DATE	DESCRIPTION	DRF	CHK	APR

Attachment B
Regional Drainage Analysis





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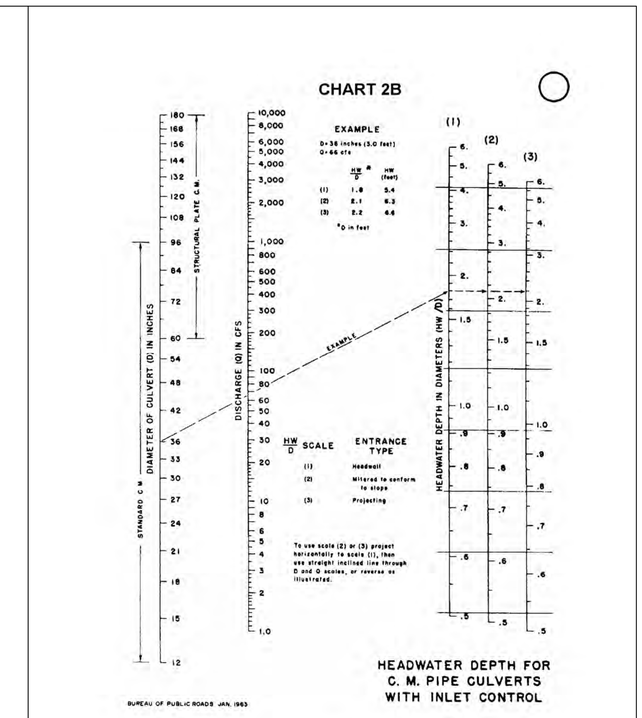

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COMBINED CHANNEL FLOW SUMMARY TABLE

Combined Outfall	247.8	1143.1
Bowdish Gulch		
CH BG 01	39.4	231.7
CH BG 02	22.3	141.7
CH BG 03	6	43.9
Conn Creek		
CH Con 01	208.4*	911.4*
CH Con 02	203.5*	892.6*
CH Con 03	94.8*	456.6*
CH Con 04	66.8*	330.1*
CH Con 05	31.4	142.6
CH Con 06	6.6	29.6
Baker Gulch		
CH BAK 01	98.7	400.8
CH BAK 02	37.3	218.3
CH BAK 03	13.5	85.5
CH BAK 04	5.9	37.4
CH Trib 01	16.6	103.1
CH Trib 02	7.2	46.4
CH Tour 0	10.4	61.1
Cascade Canyon		
CH CA 01	26.2	149.6
CH CA 02	21	123.7
CH CA 03	10.5	64

* FLOW RATES MANUALLY ADDED TO ESTIMATE LOWER REACHES

TRIB03 BASIN DESIGNATION
AREA 614.5 7.2 25 YEAR BASIN FLOW (CFS)
ACRES 46.4 100 YEAR BASIN FLOW (CFS)

REINFORCED CONCRETE PIPE CULVERT CAPACITY (CFS)

PIPE DIAMETER	HW/D =1.0	HW/D =1.5
18"	6.8	11.0
24"	13.8	21.2
30"	22	39
36"	38	62
42"	54	85
48"	75	125

CORRUGATED METAL PIPE CULVERT CAPACITY (CFS)

PIPE DIAMETER	HW/D =1.0	HW/D =1.5
18"	5.6	9.0
24"	11.8	18.5
30"	20	31
36"	32	50
42"	46	73
48"	66	100

NOTES:

THE ABOVE TABLES ASSUME A HEADWATER DEPTH TO PIPE DIAMETER RATIO OF 1.0 TO 1.5 AND A PROJECTING PIPE END AT THE INLET.

CONSULTATION WITH A CIVIL ENGINEER IS RECOMMENDED FOR LOCATIONS REQUIRING A 36" OR LARGER PIPE CULVERT.

LEGEND

- LIMITS OF DRAINAGE STUDY
- DRAINAGE BASIN BOUNDARY WITHIN CONN CREEK WATERSHED
- DRAINAGE BASIN BOUNDARY OUTSIDE OF CONN CREEK WATERSHED

0 1000 2000 4000
1 inch = 2000 ft.

DATE: 12/19/06 TIME: 11:41:16 AM
SERVER: DVS1 LAYOUT: Layout1
PATH: N:\DVB0235\CADD\CIVIL
DRAWING NAME: ETSD.DWG
PAGE SETUP: ____
DESIGNER: #### PROJ. MGR: ####

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

FORERUNNER CORPORATION
3900 S. Wadsworth Blvd. #600
Lakewood, CO 80235
303-969-0223

NOLTE BEYOND ENGINEERING
8000 S. Chester Street, Suite 200 Centennial, CO 80112
303.220.6400 TEL 303.220.9001 FAX WWW.NOLTE.COM

OCCIDENTAL OIL AND GAS CORPORATION

REGIONAL DRAINAGE ANALYSIS

WATERSHED EXHIBIT

PREPARED FOR: FORERUNNER CORPORATION DATE SUBMITTED: 12/19/06

SHEET NUMBER 1 OF SHEETS
SCALE VERTICAL: 1"= HORIZONTAL: 1"= 2000'
JOB NUMBER DVB0235

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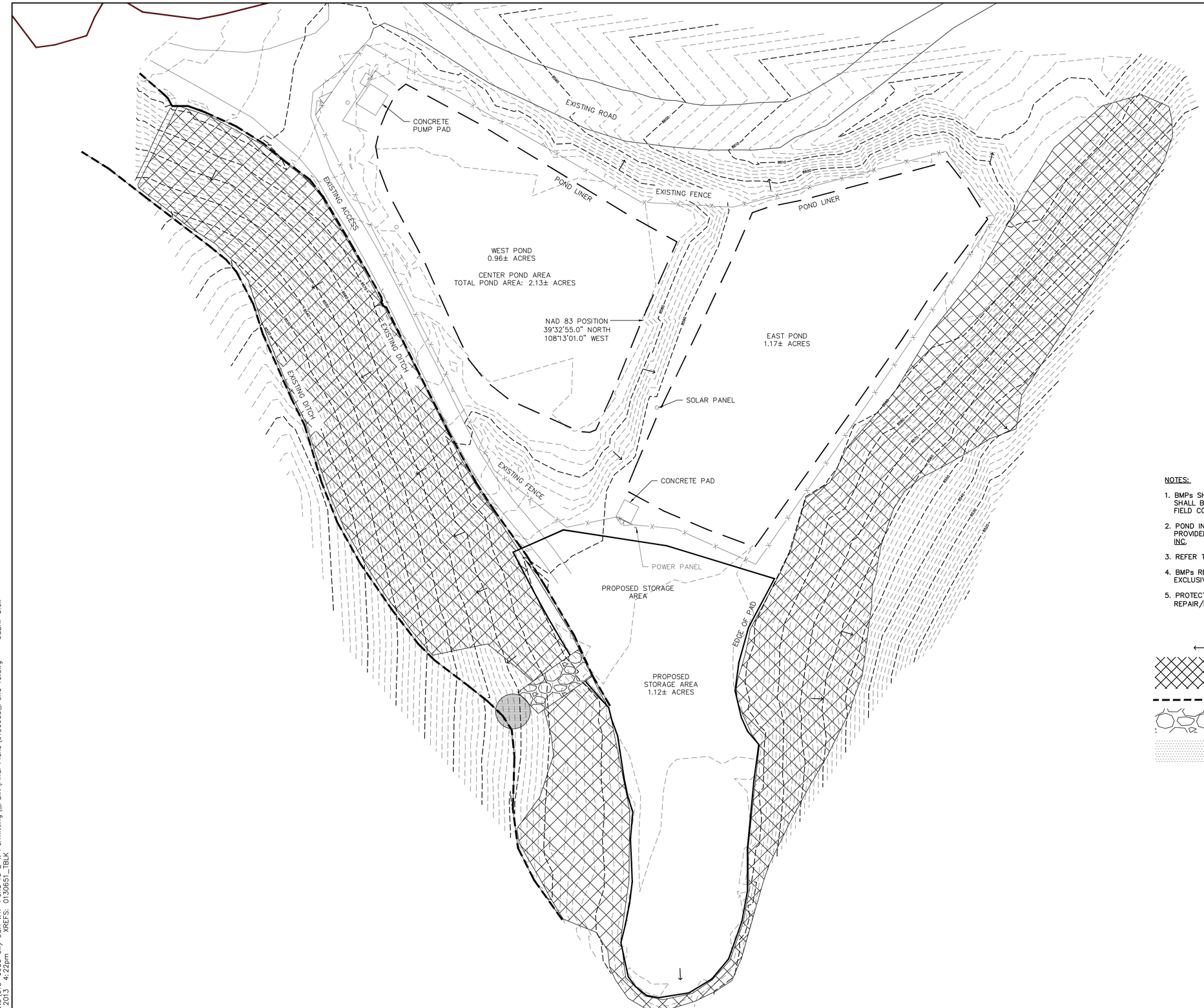
CRUZ

Attachment C
Proposed Erosion Control Figure



NOTES:

1. BMPs SHOWN ARE APPROXIMATE AND SHALL BE ADJUSTED APPROPRIATELY TO FIELD CONDITIONS.
2. POND INFORMATION AND DESIGN PROVIDED BY D.R.GRIFFIN & ASSOCIATES, INC.
3. REFER TO BMP DETAILS FOR PLACEMENT.
4. BMPs REFLECTED ON THIS PLAN PERTAIN EXCLUSIVELY TO POND CONSTRUCTION.
5. PROTECT EXISTING BMPs AND REPAIR/REPLACE IF DISTURBED.

BMP LEGEND

- ← FLOW DIRECTION
- EXISTING STABILIZED VEGETATION
- DRAINAGE DITCH
- ROCK RUNDOWN
- SEDIMENT TRAP

EROSION CONTROL PLAN
POND 13

OLSSON ASSOCIATES
769 Horizon Drive, Suite 102
Grand Junction, CO 81506
TEL 970.263.7900
FAX 970.263.7456
www.olssonassociates.com

REV. NO.	DATE	REVISIONS DESCRIPTION
		REVISIONS

EROSION CONTROL PLAN

POND 13 AND STORAGE AREA
OXY USA WTP LP

GARFIELD COUNTY, COLORADO

2013

drawn by:	DJF
checked by:	CDR
approved by:	WEP
QA/QC by:	WEP
project no.:	
drawing no.:	
date:	06/27/2013

FIGURE
1

DWG: F:\Projects\013-0655 Oxy USA WTP Pond 13 E W Permitting_PBIN\Final Plans\0130655_Pond 13.dwg USER: dfox
DATE: Jun 27, 2013 4:22pm XREFS: 0130651_TBLK

Attachment D
Weed Management Plan

OXY USA WTP LP
and
OXY USA INC.

Subsidiaries of Occidental Petroleum Corporation

Noxious Weed Management Plan

August 2010

Table of Contents

NOXIOUS WEED MANAGEMENT PLAN
OXY USA WTP LP
and
OXY USA INC
Mesa and Garfield County Operations

1. Background

The Colorado Noxious Weed Act (C.R.S. Title 35, Article 5.5) requires that "noxious weeds" be managed on private and public lands. The Act further declares that control of noxious weeds should use methods that are least damaging to the environment but also practicable and economically reasonable. The state requires management of noxious weeds included on one of three lists (see Appendix A): List A – designated for statewide eradication; List B – managed to prevent further spread and, for selected species, designated for eradication in large areas; and List C – of more localized concern, but for which the State will provide education, research, and biological control assistance to jurisdictions that choose to manage the species. OXY USA WTP LP and OXY USA Inc. (individually and collectively referred to herein as "Oxy"), are affiliated companies that separately own and operate certain mineral properties in the State of Colorado. This plan is intended for all Oxy operations in order to comply with all state and federal requirements including the Colorado Noxious Weed Act, Colorado Oil and Gas Conservation Act, Bureau of Land Management (BLM) and Forest Service (FS) National Invasive Weed Strategies, Mesa County and Garfield County weed standards.

2. Compliance Statements

Oxy will manage all noxious weeds, as defined by the Mesa County, Garfield County or State Law (CRS 35-5.5), in all newly disturbed project areas using recommendations identified in this plan or those provided by biological consultant at the time of project specific inventories. The term, "disturbed area" includes all access roads, easements, pipelines, special purpose pits, berms, soil stockpiles, well pads, electrical and compressor stations and other structures, and other areas disturbed by project activities.

Oxy will immediately report all State List A and List B populations to be eradicated and any other species slated by Mesa and Garfield Counties for eradication upon discovery to the appropriate County designee.

3. Contacts

Regulatory Lead:

Sean Norris
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
(970) 263-3628

***Regulatory Advisor*:** Daniel Padilla
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, Colorado 81506
Phone: (970) 263-3637

4. Locations

Oxy has active and inactive leases for gas exploration in the following areas of Mesa and Garfield Counties:

- Cascade Creek (Garfield County, Colorado)
- Collbran Area (Mesa County, Colorado)

Oxy operates on split estate, wholly federal (both BLM and USFS), and wholly private land and lease holdings.

5. Land Use Objectives

Oxy conducts natural gas exploration on lease holdings in Colorado. Land uses and types of facilities to be developed include access roads, pipelines, well pads, compressor stations, staging/storage areas for equipment and supplies, and other associated natural gas development activities. Some of the developments are short-term temporary disturbances, such as staging areas and pipelines, while the roads and well pads will be in place for an estimated 20-30 years.

6. Weed Management Objectives and Implementation Strategies

The following are the overall objectives of Oxy's weed management plan. Specific actions to be taken to meet these objectives are detailed in Section 6.

1) Inventory and monitor existing noxious weed infestations using GPS or other mapping techniques and consistent field documentation;
2) Prevent new infestations of noxious weeds;
3) Implement Integrated Weed Management (IWM) to control or manage noxious weed populations;
4) Maintain weed inventory, herbicide application and mapping records;
5) Restore disturbed areas to their proper ecological function to protect native plant ecosystems and watersheds from degradation by noxious weeds.

6.1 Inventory and Monitoring

Before a new site is developed, Oxy will inventory the site and adjacent areas for noxious weeds, including access roads and other probable weed ingress routes.

Noxious weed locations (List A and List B species) will be collected with a GPS unit. Any noxious weed infestations found will be treated before site disturbance, if timing is appropriate. If the season is not appropriate for weed treatment, activities may proceed and the weeds will be monitored and treated during the appropriate season. Weeds on adjacent properties may be treated as appropriate with permission of the landowner. Populations of Colorado or County List A and List B species (see Appendix A) will be reported immediately to the County Weed Manager. On Federal property or for federal projects, a Noxious Weed Inventory record will be completed each time a List A or B weed infestation is inventoried (with the exception of redstem filaree and quackgrass), and the populations will be reported.

Monitoring will be conducted at least once a year, early in the growing season, by Oxy staff or contractors, and in coordination with BLM or FS staff on federal lands. For most of Oxy's operation areas, monitoring will occur between May and July. All previously treated noxious weed sites will be monitored for regrowth and scheduled for re-treatment as necessary. All disturbed areas under Oxy management will also be monitored to ensure there are no new weed infestations.

6.2 Prevention

The purpose of prevention measures is to preclude the introduction of new or existing noxious weeds from the project area to un-infested areas or from adjacent land into the project area.

6.2.1 Construction Prevention Measures

Construction equipment entering project areas (backhoes, trackhoes, dozers, blades, rollers, lowboys, equipment trailers, etc.) will be power washed or otherwise cleaned. "Equipment" is defined as any earth moving and any other machinery, trucks or vehicles, trailers and tools. On Federal property, equipment may be inspected by USFS or BLM personnel. Pickup trucks, SUVs, vans, water trucks, and pipe trucks should also be clean but do not require inspection prior to entering federal lands. Track pads, gravel beds or rumble strips will be installed at ingress/egress points to the site to limit weed propagules from entering or leaving the site.

Soils from infested areas of the project site will not be moved off site, but will be stockpiled and treated for weeds as necessary. If infested soils are moved off site, they will be kept on Oxy-managed property, monitored, and treated as necessary. Stockpiled soils will be monitored and treated to control noxious weeds. All purchased products used in development and reclamation of a site will be inspected or certified as weed-free whenever possible, including soils, rock and gravel, seeds, mulch and erosion control products.

6.2.2 Revegetation

The goal of reclamation and revegetation of a site after disturbance is timely establishment of a desirable plant community and prevention of noxious weed

infestation. “Timely” is defined as “by the end of the second year of project completion” (BLM 2007). Elements of successful revegetation include the use of topsoil that was set aside during construction and kept weed-free; reseeding with appropriate species to establish plant cover, and stabilization of the soil surface with the appropriate mulches, tackifiers, and erosion control products as needed. Plans for revegetation and reclamation of disturbed areas are site-specific, and will include a plant list, method of seeding, how seeding success will be determined and how the revegetated area will be monitored. Most private landowners request re-seeding with common pasture grasses, including timothy, (*Phleum pratense*), brome grasses (*Bromus* or *Bromopsis*), orchardgrass (*Dactylis glomerata*), and oats, *tricale*, rye, or wheat as an annual covercrop. USFS and BLM seed mixes are compiled on a site-specific basis, according to elevation and existing vegetation community on the site. Non-native, non-persistent sterile grasses may be used to provide ground cover for soil stabilization and weed suppression during temporary reclamation on both private and federal land. See Appendix C for a sample Oxy Revegetation and Reclamation Plan.

Certified weed seed free straw, hay, mulch, seed or other materials will be used for soil stabilization and/or revegetation purposes (Colorado Department of Agriculture certified inspector to State standards). Seed tags will be available for inspection upon request of the Inspector.

Topsoil that is stock piled for more than one year will be seeded according to above standards at the earliest practical time to reduce the possibility of noxious weed establishment.

Revegetation efforts will be monitored annually until successful establishment of desirable or intentionally planted seed or plants is confirmed. Noxious weeds found in revegetation will be documented, and managed per guidelines in this Weed Management Plan.

6.3 Control and Management

A comprehensive multi-strategy approach utilizing IWM will be employed to detect, map, treat and control noxious weeds. Treatments will include herbicide, cultural, mechanical, revegetation, and biological control alone or in combination as necessary for efficient weed control. On Federal lands, control and management methods (including herbicide use) will be verified and approved with the appropriate land management agency representatives. Activities on BLM lands in Colorado requires submittal of a “Pesticide Use Proposal Form” (BLM 2007).

The accompanying treatment tables describe the management methods, rates, and timing of control measures for specific targeted weeds (see Table 1 and Table 2). Treatment application records will be retained by Oxy and available for inspection by contacting personnel listed in Section 3..

Table 1. Weed Management Methods

Target Weed(s)	Management Method(s)	Herbicide Recommendation Product/Rate†	Adjuvant or Surfactant & Rate	Timing of Control
Chamomile, scentless (*Matricaria perforate)*	Herbicide, mechanical, cultural	picloram or clopyralid, as per label	Nonionic surfactant, as per label	Pre-flower, early season
Houndstongue (*Cynoglossum officinale)*	Herbicide, mechanical, cultural	picloram or picloram + 2,4-D, as per label	Nonionic surfactant, as per label	Pre-bud or rosette stage (early spring)
Knapweed, Russian (*Acroptilon repens)*	Herbicide, cultural	1)clopyralid plus2,4-D, or 2)clopyralid plus triclopyr or 3)picloram, as per label	Nonionic surfactant, as per label	Fall
Knapweed, spotted (*Centaurea maculosa)*	Herbicide	1)clopyralid plus2,4-D, or 2)clopyralid plus triclopyr or 3)glyphosate, as per label	Nonionic surfactant, as per label	Rosettes in fall or early spring
Moth mullein (*Verbascum blattaria*)	Herbicide, mechanical, cultural	Dicamba or chlorsulfuron, as per label	Nonionic surfactant, as per label	Rosettes in fall or early spring
Oxeye daisy, (*Chrysanthemum leucanthemum*)	Herbicide, mechanical, cultural	Clopyralid or metsulfuron methyl, as per label	Nonionic surfactant, as per label	Early, young growth
*Sulfur cinquefoil (*Potentilla recta*)	Herbicide, mechanical, cultural	1)picloram or 2)metsulfuron methyl, as per label	Nonionic surfactant, as per label	Spring or fall

Target Weed(s)	Management Method(s)	Herbicide Recommendation Product/Rate†	Adjuvant or Surfactant & Rate	Timing of Control
*Tamarisk, Salt cedar (*all Tamarix sp.)*	Herbicide	Triclopyr, as per label	Nonionic surfactant, as per label	Basal spray on young plants, cut and treat stump on older plant.
Thistle, bull (*Cirsium vulgare*)	Herbicide, mechanical, cultural	Clopyralid or picloram, as per label	Nonionic surfactant, as per label	Rosette stage, spring or fall
Thistle, Canada *(Breea arvense)*	Herbicide, cultural	1)clopyralid plus2,4-D, or 2)clopyralid plus triclopyr or 3)glyphosate, as per label	Nonionic surfactant, as per label	Early bud stage or fall rosettes
Thistle, musk *(Carduus nutans)*	Herbicide, biological, mechanical, cultural	1)2,4-D or 2) clopyralid plus 2,4-D or 3)glyphosate, as per label	Nonionic surfactant, as per label	Rosette stage, spring or fall
Thistle, plumeless (*Carduus acanthoides*)	Herbicide, mechanical, cultural	Clopyralid or tricloram, as per label	Nonionic surfactant, as per label	Rosette stage, spring or fall
Thistle, Scotch (*Onopordum tauricum*)	Herbicide, mechanical, cultural	Picloram or dicamba, as per label	Nonionic surfactant, as per label	Rosette stage, spring or fall

*These are small population or individuals that have been treated in the area, and will be monitored; all others are large and widespread populations

†Herbicides that are preferred for control are numbered as 1, if not numbered, there is no preference

Table 2. Biological, Cultural, or Mechanical Methods to be Used

Practice	Target Weed(s)
Seeding with approved seed mix to revegetate disturbed land, including a combination of fast growing and long-term species (see revegetation plan).	All weeds above, but especially important for those that list cultural as a control method in Table 1.
Removal of small infestations by pulling or hand grubbing at any stage.	Houndstongue, bull thistle, musk thistle, plumeless thistle, scotch thistle
Repeated mowing during bolting pre-flowering stage; cutting, bagging and removal of flowering heads if already in flower	All thistle species
Introduce biological control approved for specific weeds in very large infestations, after agency approval.	Those with biological listed as a control method in Table 1 have approved bio-controls.

7. References

Bureau of Land Management, 2007. Noxious and Invasive Weed Management Plan for Oil and Gas Operators, Glenwood Springs Energy Office, Colorado.

Colorado Department of Agriculture. 2008. Noxious Weed Lists. Available: http://www.colorado.gov/cs/Satellite?c=Page&cid=1174084048733&pagename=Agriculture-Main%2FCDAGLayout

Mesa County, Colorado Noxious Weed Management Plan, Adopted November 30, 2009.

Garfield County Weed Management Plan, Resolution No. 2002.

8. Local, State and Federal Contacts and Resources

Glenwood Springs BLM Energy Office Ecologist Beth Brenneman 2425 South Grand Avenue, Suite 101 Glenwood Springs, CO 81601-4180 Phone: (970) 947-5232 Fax: (970) 947-5267 Beth_Brenneman@blm.gov	Grand Junction BLM Weed Management Specialist Sparky Taber 2815 H road Grand Junction, CO 81506 Phone: (970) 244-3004 Fax: (970) 244-3083 mark_taber@blm.gov
Garfield County Vegetation Management Steve Anthony P.O. Box 426, 0298 CR 333A Rifle, CO 81650 Phone: (970) 625-8601 Fax: (970) 625-8627 santhony@garfield-county.com	Mesa County Pest and Weed Inspector Judith Sirota P.O. Box 5087 Grand Junction, CO 81502-5028 Phone: (970) 255-7120 Fax: (970) 243-3519 judith sirota@mesacounty us
Colorado State University Cooperative Extension Service Garfield County 1001 Railroad Avenue, P.O. Box 1112 Rifle, CO 81650-1112 Phone: (970) 625-3969 Email: garfield@ext.colostate.edu	Colorado State University Cooperative Extension Service Mesa County 2775 Hwy. 50 Grand Junction, CO 81503 Phone: (970) 244-1834
Colorado Weed Management Association Phone: (303) 779-7939 www.cwma.org	Colorado Department of Agriculture Division of Plant Industry Biological Control Section P.O. Box 400 Palisade, CO 81526 Phone: (970) 464-7916
Colorado Department of Agriculture State Weed Coordinator Noxious Weed Program Division of Conservation Services 700 Kipling Street, Suite 4000 Lakewood, CO 80215-5894 Phone: (303) 239-4182 Web site: www.ag.state.co.us/dpi/weeds/weed.html	

Appendix A
Colorado Noxious Weed List

List A- Statewide Eradication	
African rue (*Peganum harmala*)[GM*]	Myrtle spurge (*Euphorbia myrsinites*)[GM*]
Camelthorn (*Alhagi pseudalhagi*)[GM*]	Orange hawkweed (*Hieracium aurantiacum*)[GM*]
Common crupina (*Crupina vulgaris*)[GM*]	Purple loosestrife (*Lythrum salicaria*)[GM*]
Cypress spurge (*Euphorbia cyparissias*)[GM*]	Rush skeletonweed (*Chondrilla juncea*)[GM*]
Dyer's woad (*Isatis tinctoria*)[GM*]	Sericea lespedeza (*Lespedeza cuneata*)[GM*]
Giant salvinia (*Salvinia molesta*)[GM*]	Squarrose knapweed (*Centaurea virgata*)[GM*]
Hydrilla (*Hydrilla verticillata*)[GM*]	Tansy ragwort (*Senecio jacobaea*)[GM*]
Meadow knapweed (*Centaurea pratensis*)[GM*]	Yellow starthistle (*Centaurea solstitialis*)[GM*]
Mediterranean sage (*Salvia aethiopis*)[GM*]	
Medusahead (*Taeniatherum caput-medusae*)[GM*]	

List B-Prevent Further Spread	
Absinth wormwood (*Artemisia absinthium*)[GM*]	Musk thistle (*Carduus nutans*)[*]
	Oxeye daisy (*Chrysanthemum leucanthemum*)[G*]
Black henbane (*Hyoscyamus niger*)[GM*]	Perennial pepperweed or tall whitetop (*Lepidium latifolium*)[GM*]
Bouncingbet (*Saponaria officinalis*)[*]	
Bull thistle (*Cirsium vulgare*)[*]	Plumeless thistle (*Carduus acanthoides*)[GM*]
Canada thistle (*Cirsium arvense*)[*]	Quackgrass (*Elytrigia repens*)
Chinese clematis (*Clematis orientalis*)[GM*]	Redstem filaree (*Erodium cicutarium*)
Common tansy (*Tanacetum vulgare*)[*]	Russian knapweed (*Acroptilon repens*)[GM*]

Common teasel (*Dipsacus fullonum*)[*]

Corn chamomile (*Anthemis arvensis*)[*]

Cutleaf teasel (*Dipsacus laciniatus*)[*]

Dalmatian toadflax, broad-leaved (*Linaria dalmatica*)[*]

Dalmatian toadflax, narrow-leaved (*Linaria genistifolia*) [M*]

Dame's rocket (*Hesperis matronalis*)[*]

Diffuse knapweed (*Centaurea diffusa*)[GM*]

Eurasian watermilfoil (*Myriophyllum spicatum*)[*]

Hoary cress or whitetop (*Cardaria draba*)[*]

Houndstongue (*Cynoglossum officinale*)[*]

Leafy spurge (*Euphorbia esula*)[GM*]

Mayweed chamomile (*Anthemis cotula*)[*]

Moth mullein (*Verbascum blattaria*)[*]

Russian-olive (*Elaeagnus angustifolia*)[*]

Salt cedar (*Tamarix chinensis, T.parviflora*, and *T. ramosissima*)[*]

Scentless chamomile (*Matricaria perforata*)[*]

Scotch thistle (*Onopordum acanthium*)[*]

Scotch thistle (*Onopordum tauricum*)[*]

Spotted knapweed (*Centaurea maculosa*)[GM*]

Spurred anoda (*Anoda cristata*)[*]

Sulfur cinquefoil (*Potentilla recta*)[M*]

Venice mallow (*Hibiscus trionum*)[*]

Wild caraway (*Carum carvi*)[*]

Yellow nutsedge (*Cyperus esculentus*)[M*]

Yellow toadflax (*Linaria vulgaris*)[GM*]

List C-Localized Concern

Chicory (*Cichorium intybus*)[G]

Common burdock (*Arctium minus*)[G]

Common mullein (*Verbascum thapsus*)

St. Johnswort (*Hypericum perforatum*)

Downy brome or cheatgrass (*Bromus tectorum*)

Field bindweed (*Convolvulus arvensis*)

Halogeton (*Halogeton glomeratus*)

Johnsongrass (*Sorghum halepense*)

Jointed goatgrass (*Aegilops cylindrica*)

Perennial sowthistle (*Sonchus arvensis*)

Poison hemlock (*Conium maculatum*)

Puncturevine (*Tribulus terrestris*)

Velvetleaf (*Abutilon theophrasti*)

Wild proso millet (*Panicum miliaceum*)

[G] - Immediately report this noxious weed species to the Garfield County Weed Manager when found in Garfield County.

[M] - Immediately report this noxious weed species to the Mesa County Weed Manager when found in Mesa County.

[*] - These noxious weed species will be mapped and inventoried to meet BLM and FS requirements.

Appendix B

Excel Spreadsheet Components and Example Tables for Pesticide Reporting

The Excel spreadsheet table will contain the data fields listed below. This information should have been recorded on Noxious Weed Inventory and Pesticide Application records completed during the field season. The Excel spreadsheet will contain a new entry for each weed inventory and/or pesticide application.

Infestation Number (IN #): Needed when List A or List B species (with the exception of redstem filaree and quackgrass) are inventoried and treated. This is the unique number or code associated with each weed infestation.

Date: Date of the weed inventory and/or treatment

Observer/Applicator (Obs/Appl): Person conducting the inventory and/or applying the herbicide.

Weed Name or Bare Ground: Common name of the weed. If it was a bare ground treatment state as such.

UTM Easting (UTM E), Northing (UTM N) and Zone (Z) (should always be in NAD 83) or use Lat and Long if preferred. Be consistent with which one is used.

Infested Acres (Inf Acres): List how many acres are covered with the weed.

Density (Dens) i.e. Cover: L= Low (less than 5% total canopy cover)

M = Moderate (5% - 25% canopy cover)

H = High (more than 25% canopy cover)

Surface ownership (Own): **BLM, FS or private**

Herbicide Trade Name (Tr Name) or Treatment Method – if a manual or biological treatment state as such.

Chemical Names (Chem Name) – Only needed when using an herbicide with multiple active ingredients or when using a mixture of chemicals. For example, if using Sahara DG which has two active ingredients, imazapyr and diuron, enter the first two letters of each active ingredient. e.g. im + di. See Excel spreadsheet example.

Application Rate (Pounds Active Ingredient (A.I.)/Acre or Pounds Acid Equivalent (A.E.)/Acre): For those herbicides with multiple active ingredients, multiple columns for the application rates are provided. Application rates should be entered in the same order chemical names are entered. For example, for Sahara DG, the A.I./acre of imazapyr would be entered in the first Application Rate (AR #1) column. The A.I./acre of diuron would be entered in the second Application Rate (AR #2) column. If an additional chemical was used in the mix it would be entered in the third Application Rate (AR #3) column.

Total Pounds Active Ingredient (A.I.) or Acid Equivalent (A.E.) Applied: For those herbicides with multiple chemicals, multiple columns for the pounds of A.I./A.E. are provided. Pounds of A.I./A.E. should be entered in the same order chemical names are entered. For example, for Sahara DG, the pounds of A.I. of imazapyr would be entered in the first Total Pounds A.I./A.E. (AI AE #1) column. The pounds of A.I. of diuron would be entered in the second Total Pounds A.I./A.E. (AI AE #2) column. If an additional chemical was used in the mix it would be entered in the third Total Pounds A.I./A.E. (AI AE #3) column.

Acres Treated: This should equal the Total Pounds A.I./A.E. divided by the Application Rate in Pounds A.I./A.E.

Example of a Table for Reporting Total Pounds Active Ingredient Applied and Total Acres Treated by Chemical Type

Chemical(s)	**Application Rate (lbs. A.I./acre or lbs. A.E/acre)**	**Acres Treated**	**Total Pounds A.I. or A.E.**
metsulfuron methyl	.056	20.7	1.16
metsulfuron methyl	.075	1.7	.13
Total acres and # a.i.		**22.4**	**1.29**
Metsulfuron methyl + 2,4-D	.125 + 1.87	.07	.009 + .0135
Total acres and # a.i.		**.07**	**.009 + .0135**
clopyralid +	.285 + 1.5	5.0	1.43 +7.60

2,4-D			
Clopyralid + 2,4-D	.185 + 1.0	1.6	.3 + 1.6
Total acres and # **a.e**.		**6.6**	**1.73 + 9.2**

Example of a Table for Reporting Total Pounds of Active Ingredient Applied by Chemical Type

Chemical(s)	**Total Pounds A.I. or A.E.**
metsulfuron methyl	1.29
2,4-D	9.21
clopyralid	2.78
glyphosate	2.37

Appendix C
Sample Revegetation and Reclamation Plan

The proposed facility will be in operation for an anticipated period of approximately _____ during development and production of OXY's natural gas production operations. Upon termination of the development and production activities, the facility will be reclaimed, as outlined below:

- All equipment and structures will be removed.
- OXY will remove all safety and storm water BMPs, and other surface objects from the premises.
- OXY will restore the site to pre-facility conditions by re-contouring and re-vegetating the site. Top soil will be redistributed across the site and will be reseeded with an approved seed mix (see attached seed mix recommendation).
- OXY will monitor the site to ensure that 70 percent of the pre-existing vegetation is achieved, per the requirements of the area wide CDPHE Stormwater Permit for Cascade Creek and Collbran Developments.

Seedbed Preparation and Slope Reconstruction:

Cut and fill slopes will be backfilled and re-contoured to a slope of 3:1 – 2.5:1 or less in instances where necessary to match the existing natural contours. Following final contouring, all backfilled or ripped surfaces will be covered evenly with topsoil. Re-contouring should form a complex slope with heavy pocking. In areas with slope greater than 3 percent, imprinting of the seed bed is recommended. Final seedbed prep will consist of scarifying/imprinting the topsoil prior to seeding. 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 will 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. All compacted areas will be ripped to depth of 18" with max furrow spacing of 2'. Where practicable, ripping will be conducted in two passes at perpendicular direction.

Topsoil: Following final contouring, all backfilled or ripped surfaces will be covered evenly with topsoil. The topsoil in the cut slope on the back of the pad will be heavily pocked using the excavator bucket to form an uneven soil surface complex which will aid in revegetation and help with slope stabilization. The fill slope, and remaining disturbed, and reclaimed areas will be track walked to aid in revegetation and slope stabilization. In areas that may not have been disturbed during the reclamation process or areas of

suspected compaction that will be reseeded, measures will be taken to loosen and spread the topsoil. These measures may include scarifying the soil by racking or harrowing the soil.

Seed Mix: Seed mix used for reclamation will be taken from the attached seed mixtures.

Seeding Procedures: For best results and success, the recommended grass mixture reseeding should be done in late autumn in order to take advantage of natural precipitation for the region. The reseeding 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 imprinting and waterbars, where applicable.

Alternative seeding methods include, but are not limited to:

- No-till-drill (no soil preparation required);
- harrow with just enough soil moisture to create a rough surface, broadcast seed and reharrow, 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.

The prepared soils will be seeded (weather permitting) no more than 24 hours following completion of final seedbed preparation. The seeding will be conducted by means of drilling the prescribed seed at prescribed seeding rate. The seed will be drilled with a common range drill at a depth of 0.25 – 0.5” beneath the soil surface. The seed will be drilled horizontally across the pad faces and perpendicular to the track walking when possible. When slope gradient less than 2.5:1 exists and drilling is not possible from a mechanical and safety standpoint the soils will be broadcast seeded at twice the prescribed amount. The reseeding will be monitored and reseeded as appropriate until the reclamation standards detailed above are met.

Attachment E

Cascade Creek Stormwater Permit COR0038414

STATE OF COLORADO

John W. Hickenlooper, Governor
Christopher E. Urbina, MD, MPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
Located in Glendale, Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

http://www.cdphe.state.co.us

Colorado Department
of Public Health
and Environment

June 21, 2012

Doug Weaver, Ops Mgr & Attorney-in-Fact
Oxy USA WTP LP
760 Horizon Dr Ste 101
Grand Junction, CO 81506

RE: Renewal of Permit/Certification
Administrative Continuation
For: Cascade Creek Common Plan of Development
Located at: 13 Mi N of Debeque (See map in file), Debeque, Garfield County
Permit No.: COR038414

Dear Mr. Weaver;

The Division has received an application to renew the above permit/certification. It has been determined that there is sufficient information to make this permit/certification eligible for renewal. More information may be requested by the Division as progress is made in developing a new permit/certification for the above listed facility. This information must be made available to the Division when requested to complete the permit process.

The Division is currently in the process of developing a new permit or master general permit and associated certification for the above permitted facility. The development and review procedures required by law have not yet been completed. When the discharge permit issued to you for your facility expired on **June 30, 2012** your permit is administratively continued and remains in effect under Section 104(7) of the Administrative Procedures Act, C.R.S. 1973, 24-4-101, et seq (1982 repl. vol. 10) until the new permit/certification is issued and effective.

All effluent permit terms and conditions in your current permit will remain in effect until your new permit/certification is issued and effective.

PLEASE KEEP THIS LETTER WITH YOUR PERMIT AND SWMP TO SHOW CONTINUATION OF PERMIT COVERAGE.

Sincerely,

Debbie Jessop
Permits Section
WATER QUALITY CONTROL DIVISION

xc: Permit File

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
TELEPHONE: (303) 692-3500

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR-030000
STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION

Certification Number **COR038414**

This Certification to Discharge specifically authorizes:

Oxy USA WTP LP

LEGAL CONTACT:
Heidi Reed, Sr. EHS Advisor
Oxy USA WTP LP
2754 Compass Drive Ste. 170
Grand Junction, CO 81506
Phone # 970/263-3609
jfrey@cordcomp.com

LOCAL CONTACT:
Joanna Fry, ,
Phone # 970/ 263-7800
heidi_reed@oxy.com

During the Construction Activity: **Gas/Oil Field Exploration and/or Development**
to discharge stormwater from the facility identified as **Cascade Creek Development**
which is located at:

13 miles north of Debeque, map in file
Debeque, Co 81630

Latitude **39/30/45,** Longitude **108/14/10**
In **Garfield County**

to: Cascade Creek -- Colorado River

Anticipated Activity begins **07/01/2005** continuing through **05/17/2007**
On **5** acres **(5** acres disturbed)

Certification is effective: **07/01/2007** Certification Expires: **06/30/2012**

Annual Fee: $245.00 **(DO NOT PAY NOW** – A prorated bill will be sent shortly.)

Impact Analysis

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

ARTICLE 4 – IMPACT ANALYSIS

OXY USA WTP LP

POND 13 - CENTRALIZED E & P WASTE MANAGEMENT FACILITY

SECTION 4-203.G. IMPACT ANALYSIS

1. Adjacent Property

See Adjacent Property Owners section for complete list of Adjacent Property Owners.

2. Mineral Owners

See Adjacent Property Owners section for complete list of Mineral Owners.

3. Adjacent Land Use

Land uses adjacent to the project site are predominately natural gas operations and seasonal cattle grazing. The project site is located within a 640 acre parcel. Land uses on adjacent properties also include natural gas and agricultural operations.

4. Site Features

The proposed site is located at an approximate elevation of 8,600 feet above sea level. The project area is also located above Cascade Canyon and the Conn Creek drainage in Section 4, Township 6 South, Range 97 West of the 6th P.M. The site has been disturbed and contains two fenced and lined production water ponds.

Prior to being disturbed, the site contained a mix of scrub-shrub upland habitat dominated by sagebrush and Gambel oak with aspen occurring along the adjacent drainages and higher elevations.

5. Soil Characteristics

The soil at this location consists of 55 – Parachute – Irigul complex, 5 to 30 percent slopes and 56-Parachute – Irigul-Rhone association, 25 to 50 percent slopes. Both soil types are considered to exhibit “well drained” qualities with no frequency of flooding or ponding. Both soil types have low characteristics for corrosion of concrete and moderate corrosion of steel. The characteristics of these soils will not create significant restrictions on the development of a Centralized E & P Waste Management Facility.

6. Geology and Hazard

Topography

The Oxy Pond 13 Water Storage Facility consists of adjacent ponds that are being permitted as one facility. The site is shown on the U.S.G.S. Circle Dot Gulch 7.5-minute topographic map. The water storage facility is located near the rim of Cascade Canyon approximately 15 miles north of the town of De Beque in western Garfield County, Colorado. The site is located near the center of the Piceance Basin, an elongated, irregularly- shaped structural depression in the earth's crust resulting from tectonic forces associated with the uplift of the Rocky Mountains through geologic time.

The general terrain surrounding the facility consists of rugged canyons incised into the Roan Cliffs. The present topography is the result of uplift combined with stream erosion. The erosion produced a series of high plateaus and deep valleys associated with the down cutting of Colorado River located to the south. The site is located approximately 550 feet northwest of an unnamed drainage to Cascade Canyon. The site lies at an elevation of approximately 8,600 feet above mean sea level. The elevation of Cascade Creek lies at approximately 8,200 feet or 400 feet below the site elevation.

Soils

The proposed facility is underlain by soils mapped by the U.S. Natural Resources Conservation Service as the Parachute – Irigul complex, which is found on mountain sides and on ridge crests with 5 percent to 30 percent slopes, at elevations of 7,600 feet to 8,800 feet above mean sea level. The unit is about 60 percent Parachute soil and 30 percent Rhone loam. The two soils occur as areas so intricately intermingled that mapping them separately was deemed impractical at the scale used in the soil survey.

The Parachute soil is moderately deep and is well drained. It formed in residuum derived dominantly from sandstone, siltstone, and shale. Typically the surface layer consists of grayish brown loam and is about ten inches thick; while the subsoil is brown very channery loam about 15 inches thick, with rippable, fractured siltstone encountered at depths of about 25 inches. Permeability is moderate in the Parachute soil, and the available water capacity is very low. Runoff is medium or rapid, and the hazard of water erosion is moderate to very severe.

The Irigul soil is shallow and well drained and is formed in residuum derived predominantly from sandstone or shale. Typically the surface layer is brown channery loam about six inches thick, the subsoil is very dark grayish brown loam about 7 inches thick, and siltstone is encountered at a depth of about 13 inches. Permeability is moderate and the available water capacity is very low. Runoff is medium or rapid, and the hazard of water erosion is moderate to very severe.

Bedrock Geology

The bedrock underlying the proposed facility is composed of the Tertiary age Uinta Formation or the Parachute Creek Member of the Green River Formation. The Uinta Formation consists of permeable, poorly sorted, fine to coarse sandstone with some siltstone and mudstone, becoming more coarse-grained and permeable toward the top of

the formation. The Uinta Formation and the Parachute Member of the upper part of the Green River Formation comprise the Uinta – Animas aquifer in the Piceance Basin.

The Uinta Formation lies stratigraphically above the Tertiary age Parachute Member of the Green River Formation. The Parachute Creek Member consists primarily of dolomitic marlstone. Kerogen, a waxlike hydrocarbon, is present in some parts of the Parachute Creek Member in the Piceance and Uinta Basins. Marlstone containing large concentrations of kerogen is referred to as “oil shale” and is generally not as fractured and contains smaller concentrations of kerogen. Fractures and dissolution openings along fractures in the marlstone form the principal pathways for water movement in the aquifer (Robson and Banta, 1995).

Oil shale is generally less permeable and forms confining units. The Mahogany zone is an oil shale bed within the Parachute Creek Member that is an example of a confining unit found within the Piceance Basin. A saline zone in the lower marlstone of the Parachute Creek Member is found within the central part of the Piceance Basin and contains the minerals nahcolite and halite, is not extensively fractured, and forms part of the relatively impermeable lower confining unit of the aquifer (Robson and Banta, 1995). The depth to the top of the Mahogany zone in the vicinity of the site is expected to lie at an elevation of 6,000 feet.

The Garden Gulch Member, Anvil Points Member, and Douglas Creek Member of the Green River Formation and the Tertiary age Wasatch Formation forms a confining unit that separates the Uinta – Animas aquifer from the underlying upper Cretaceous Mesaverde aquifer.

Local and Regional Geologic Structures

The water storage facility is located on the northeastern limb of the Crystal Creek Anticline. The northwest trending fold system of the Crystal Creek anticlinal nose and the Clear Creek Syncline begins near the Colorado River and extends northward for approximately 30 miles into the southwestern part of the Piceance Creek Basin. A part of the Clear Creek syncline occupies the southwestern part of this area, and the trace of its axis is closely parallel to that of the Crystal Creek anticline. The Clear Creek syncline is a broad shallow fold the trace of which closely parallels the axis of the Crystal Creek anticline. The Crystal Creek anticlinal nose forms the southeastern element of an anticlinal fold that trends across the southwest part of the Piceance Basin. The fold plunges to the northwest and terminates near the western boundary of the area in a structural saddle (Hail, 1992). The anticline is somewhat asymmetrical and has steeper dips on its southwest limb of about 200 feet per mile and gentler dips on its northeastern limb of about 65 feet per mile (Hail, 1992).

No major faults are present in the project area. Two small groups of normal faults are present in the southern extent of the Roan Plateau with one set approximately 15 miles northeast and a second smaller group about 20 miles northwest of the project site (Hail, 1992).

Geologic Hazards

There are no major faults in the central Roan Plateau area (Hail, 1992). Minimal seismic activity near the proposed disposal facility has occurred in recent geologic time. One

earthquake of magnitude greater than 5.0 occurred in Garfield County since the early 1960s when proper instrumentation was implemented in the state of Colorado. The epicenter of this earthquake was approximately 17 miles southeast of the project site. A second recorded earthquake greater than 5.0 occurred in Rio Blanco County with an epicenter about 20 miles northwest of the project site. Mesa County has historically experienced few earthquakes. The USGS has rated Mesa County as having low to moderate earthquake hazard, although no specific seismic study has been done in Mesa County.

According to the Colorado Geological Survey, no Quaternary-age faults are present in the Roan Plateau area (Widmann and others, 1998). However, the Geologic Map of Colorado (Tweto, 1979) shows northeast-southwest trending normal faults exist in the Cretaceous bedrock near the Douglas Creek Arch and the western edge of the Piceance Basin. In addition, a series of normal faults trace along the eastern Piceance Basin boundary near the Grand Hogback to the east.

Although faults are not always visible at the surface, this does not preclude the chance of an earthquake happening in the area at some point in the future. According to the Colorado Earthquake Hazard Mitigation Council (2008), "Earthquakes can also occur on faults that do not rupture the ground surface or on faults that are not yet recognized as being hazardous. These so called “random” earthquakes are considered in most hazard analyses to help account for faults that are not apparent at the earth’s surface."

No surficial geologic hazards (landslide, mudflow, fan) or soils hazards have been mapped in the immediate vicinity of the proposed waste management facility. The site is not located in an area mapped as a floodplain hazard by the Federal Emergency Management Agency (FEMA). However, because of the natural slope above the property within the northeast-to-southwest oriented drainage, overland flow is possible in the event of an extreme precipitation event. Although records of extreme rainfall events are unavailable for locations on top of the Roan Plateau, climate records since the mid-20th century indicate that the record 24-hour rainfall amounts at Grand Junction, Palisade, and Parachute have not exceeded 2 inches (Western Regional Climate Center, 2011). The duration of these events within a 24 hour period is not known, and it is possible that a short burst of intense rainfall event could cause local overland flow in the watershed that encompasses the project site if a precipitation rate exceeds the infiltration rate of the watershed soils.

The primary limitations for shallow excavations are based on the slopes and severe seepage. Consideration will be given to the design and construction of this facility to ensure that slopes are graded appropriately to minimize the potential for cutback caving. The suitability of the soils in the project area is identified as being somewhat to very limited in regard to the construction of ponds and embankments. The limitations identified are primarily applicable to unlined water impoundments. Consideration will be given to design and construction characteristics related to the area soil thickness and depth to bedrock to mitigate these limitations. Consideration will also be given to the design and operation of the high density polyethylene (HDPE) liner system for the impoundments, which will mitigate potential seepage and leaks.

Surface Water Features

Surface water features within two miles of the project site include Cascade Canyon located approximately 1,640 feet to the southwest of the water treatment facility, and Little Creek approximately 1,624 feet to the northeast. The site lies on a drainage divide between Cascade Creek to the southwest and Little Creek to the northeast. If a produced water spill were to occur and leave the site, it is expected that it would flow toward Cascade Canyon. Oxy USA WTP had another permitted pit named the MCM #83-92 Pit (COGCC facility ID #273647) located approximately 1,130 feet to the north. The MCM #83-92 pit is shown as being closed on the COGCC GIS database.

The site is shown on the USGS 1:24,000 topographic map (Circle Dot Gulch Quadrangle). Cascade Creek has perennial flow, although no flow records are available to determine the flow conditions in these drainages. There are no springs shown in Section 4, Township 6 South, Range 97 West. However, there are springs shown in adjoining Section 3, Section 5, Section 9 Section 10, Township 6 South Range 97W, and in Section 36, Township 5 South, Range 97 West, of the 6th Principal Meridian. These springs are all located at elevations of less than 8,400 feet and most are closer to an elevation of 8,200 feet above mean sea level.

Shallow Groundwater and Major Aquifers

Shallow groundwater is not expected to occur in close proximity to the site due to the site being located on a prominence of Cascade Canyon at an elevation of approximately 8,600 feet. Cascade Canyon is the nearest surface water and lies at elevations of 8,200 feet to 8,400 feet.

Major aquifers in the area consist of the Uinta – Animas aquifer and according to published geologic maps, the bedrock exposed at the surface consists of the Uinta Formation. The Uinta – Animas aquifer in the Piceance Basin consists of the Uinta Formation and the Parachute Creek Member of the Green River Formation. Much of the intergranular space in the sandstone and siltstone is filled by sodium and bicarbonate cements; however, fractures are numerous and produce substantial permeability.

Water Wells within the Site Boundary

According to the COGCC website and the Colorado Division of Water Resources there are no permitted water wells within Section 4, Township 6 South, Range 97 West. There are no permitted water wells in close proximity to the site.

The nearest permitted water wells are shown in Section 5, Township 6 South, Range 97 West, and are located across the Conn Creek drainage from the proposed site. These wells are identified as belonging to Williams Production RMT, Cliffs Engineering, and Cities Service Oil and Gas Corp. Some of these wells appear to have been abandoned, and others appear to be used as monitoring wells. They are all located at an elevation of approximately 8,400 feet above mean sea level.

Hydrologic Properties of Shallow Groundwater and Major Aquifers

The Uinta – Animas aquifer in the Piceance Basin receives about 24,000 acre-feet per year of recharge, primarily in the upland areas near the margins of the aquifer. Discharge is approximately equal to recharge and primarily occurs in the valleys of Piceance Creek and

other tributaries to the White River or in the valley of the Colorado River and its tributaries (Robson and Banta, 1995).

The permeability of the major formations in the Piceance Basin aquifers is relatively low. Permeability of the Uinta – Animas aquifer is dependent on the location and orientation of fractures. The potentiometric surface of the Uinta – Animas aquifer generally ranges from about 100 feet above land surface to 500 feet below land surface; the surface generally is near or above land surface in valleys in areas of groundwater discharge. Larger depths to water are more common in highland areas that are remote from streams or other sources of recharge (Robson and Banta, 1995). In the Piceance Basin, the potentiometric surface ranges in altitude from about 6,000 feet to 8,500 feet, and groundwater primarily flows toward the discharge areas along Piceance and Yellow Creeks (Robson and Banta, 1995). The total dissolved solids in the aquifer range from 500 milligrams per liter (mg/L) to 3,000 mg/L.

Site Location in Relation to Nearby Floodplains

The facility is not within a mapped FEMA flood hazard zone; however, it is located near the rim of the Cascade Creek canyon, an area that may be prone to flash floods. The site is located within 1560 feet of Cascade Creek, but is at an elevation of 200 feet to 400 feet above the creek. The site is not subject to COGCC Rule 317B since it is not close to the segment of the Colorado River that supplies the town of De Beque with drinking water.

Existing Shallow Groundwater Quality

Baseline groundwater quality sampling should occur prior to facility construction or modification to document pre-development conditions at the project site, as data in the area is currently not available. The groundwater quality, where it is present, is expected to be relatively fresh to 'bicarbonate' type groundwater.

Potential for Impacts to Nearby Surface Water and Groundwater

Cascade Creek could potentially be adversely impacted if a release from the facility were to reach it. Shallow groundwater resources are not expected at this location. The pond will be constructed with a HDPE plastic liner to prevent seepage.

7. Groundwater and Aquifer Recharge Areas

The proposed project site is not located in any mapped floodplain. An individual septic disposal system (ISDS) will not be used at this site, so soils will not have to support waste disposal. The site has been graded for use as a pond facility. BMPs will be implemented to control stormwater run-off and soil erosion.

8. Environmental Impacts

a. Determination of long-term and short-term effects on flora and fauna

The conversion of the site will not have a significant effect on the local flora and fauna. The site has been previously disturbed and graded for a pond facility. No critical wildlife habitat will be lost due to the conversion of the pad site to a centralized E & P waste facility. Noxious weeds will be controlled on the site during the life of the project. The site will be reclaimed after it is no longer required for natural gas production.

OXY commissioned ERO Resources Corporation (ERO) to prepare a biological resources survey of the site and that report is included as an attachment to this application. According to ERO, the site has the potential for one federally threatened, proposed and candidate species to occur near the project area. ERO surveyed the project site for the potential habitat for the greater sage grouse. They found the area to be poor habitat for this species. This conclusion corresponds with the Suitable Habitat Results Map of the adopted Garfield County Greater Sage-Grouse Conservation Plan.

The project area is not located in an elk winter concentration area. ERO determined that there was no raptor nests observed near the project area.

b. Determination of the effect on designated environmental resources, including critical wildlife habitat

As stated above, the site has been previously disturbed and graded for a production pond. No critical wildlife habitat will be lost due to the conversion of the pond to an E & P waste facility. Noxious weeds will be controlled on the site during the life of the project. The site will be reclaimed after it is no longer required for natural gas production.

c. Impacts on wildlife and domestic animals through creation of hazardous attractions, alteration of existing native vegetation, blockade of migration routes, use patterns, or other disruptions

The proposed storage area will not create hazardous attractions or alter existing native vegetation. The proposal will not block wildlife migration routes or use patterns.

d. Evaluation of any potential radiation hazard that may have been identified by the State or County Health Departments

The proposed site is not located on or near a Uranium Mine Tailings Radiation Control Act (UMTRCA) Site or other known radiation hazard site. Radon is a naturally occurring, odorless and colorless radioactive gas that is produced by the radioactive decay of radioactive minerals present in the soils and bedrock. According to the Colorado Department of Public Health and Environment (CDPHE), Colorado has a moderate to high radon potential. Since the site is a facility that does not have buildings or an area that is occupied throughout the work day, the potential presence of radon is not expected to represent a geologic hazard or a significant worker exposure issue.

9. Nuisance

Adjacent lands will not be impacted by the generation of vapor, dust, smoke, glare or vibration. In accordance with OXY's Fugitive Dust Mitigation Plan, water will be used for dust suppression during construction and operation of the facility. Any lighting on-site will be downcast.

10. Hours of Operation

The Pond 13 facility will be accessible to Oxy personnel 24 hours a day, year around. No personnel will be stationed at the facility on a regular basis.

Traffic Study

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

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BASIC TRAFFIC ANALYSIS

OXY USA WTP LP

POND 13 E/W
CENTRALIZED E & P WASTE MANAGEMENT FACILITY

GARFIELD COUNTY, COLORADO

OA Project No. 013-0655

August 2013

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INTRODUCTION & OBJECTIVE

This Basic Traffic Analysis summarizes findings of a traffic impact analysis performed for the OXY USA WTP PL (Oxy) Pond 13 E/W Centralized E & P Waste Management Facility. This facility will be used to store produced water that would be either recycled for well completions or eventually disposed of at a permitted facility. The facility is currently constructed as a production pond facility and is requesting approval as a Centralized E & P Waste Management facility. It is expected that the lifespan of the site will be approximately 30 years.

The site is located approximately 23 travel miles north of the DeBeque interchange (MP 61.6) along Interstate 70 (I-70) at DeBeque. The facility is located in the Northeast ¼ of the Southeast ¼ of Section 4, Township 6 South, Range 97 West of the 6th Principal Meridian in unincorporated Garfield County. The subject site is located on a 640 acre parcel. The property is owned by and the facility is operated by Oxy.

Oxy is in the process of permitting a number of facilities located in the general area. All of these facilities will individually generate low volumes of traffic. Two facilities are for storage and will reduce the current practice of hauling materials and equipment to and from the top of the plateau. Two facilities are for the storage and management of produced water and will allow for water recycling in the field and reduce the need for trucks to haul water for final disposal.

The objective of this analysis is to review the existing road network, provide traffic projections and trip assignment for the facility, and assess the need for access permitting.

EXISTING ROAD NETWORK

Regional trips to this facility will use the I-70 exit at DeBeque, Colorado. Vehicles traveling to the site will drive north through the Town of DeBeque and on Mesa County 45 Road (Roan Creek Road) for approximately 3.75 miles until the road crosses the Garfield/Mesa County Line where the road transitions to Garfield County Road (CR) 204. Approximately 4.25 miles north of the county line, vehicles will turn right onto CR 213 (Conn Creek Road) and travel approximately 4 miles to the end of the county road. From this point, travel is on a series of private roads that were built and are maintained for the exclusive use of the natural gas industry. These private roads are located on property owned by Oxy. The facility is located an additional 11 miles up Cascade Creek and on the top of the Roan Plateau. There are no County or public roads within a 1-mile radius of the facility.

Both CR 204 and 213 are preferred haul routes according to maps available on the Garfield County web-site. Both of these roads are generally used for access to ranches and agricultural operations, rural residential uses, oil and gas operations and access to public lands managed by the BLM.

According to the Garfield County Road Inventory Report, CR 204 is classified as Local road and is a two lane asphalt roadway with gravel shoulders. The 2011 Garfield County HUTF Report describes the roadway as is in good condition. The road has a posted speed limit of 45 mph.

During 2002, Garfield County Road & Bridge conducted a county-wide traffic study where daily traffic was counted for county roads. The study concluded that the average daily traffic (ADT) was 337 vehicles per day (vpd) on this road at that time.

According to the Garfield County Road Inventory Report, CR 213 is classified as Local road and is a two lane road consisting of a section constructed of a combination of soil, gravel, and stone and a section consisting of graded and drained natural soil. The 2011 Garfield County HUTF Report describes the roadway as is in good condition. The 2002 Garfield County Road & Bridge conducted county-wide traffic study showed the CR 213 ADT to be 9 vpd for this road. There is a right-turn lane for northbound traffic on CR 204 turning right onto CR 213. The intersection is stop controlled with CR 213 as the minor leg.

TRAFFIC PROJECTIONS

Background traffic volumes were increased to present day values for comparison purposes. Given the lack of data regarding traffic growth for this area, a growth rate of 3% is assumed. This rate was applied to the existing counts to obtain background traffic for the year 2013. This results in an estimated ADT of 446 in 2013 for CR 204. The result for CR 213 in 2013 is an estimated ADT of 12 (Table 1).

Table 1: Background Traffic Projections – Pond 13 E/W Facility

	2002 Actual	2013 Estimated
CR 204	337	446
CR 213	9	12

TRIP GENERATION AND DISTRIBUTION

Trip generation is generally determined using rates found in the ITE Trip Generation manual. Rates from this publication are applied to values related to the size of the proposed site to estimate the trips expected to enter and exit the site. In this case, no rates are provided for facilities similar to these. To estimate trips expected for this site, information was gathered regarding the expected traffic based on the existing operations.

Vehicle activities during daily operations will consist of one (1) pickup truck per day and one (1) transport truck every two (2) days. One (1) additional pickup truck and one (1) additional transport truck will be used for maintenance purposes each quarter. Trip generation will increase by three (3) pickup trucks and one to two (1-2) transport trucks per day and one (1) additional pickup truck and one additional transport each month during periods of drilling and completion. Drilling and completion activities will occur periodically throughout the life of the project. The following Table 2 summarizes the expected average and maximum trips for the operational life of the facility.

Table 2: Trip Generation – Pond 13 E/W Facility

Phase	Average Trips/Day	Maximum Trips/Day	Percent Trucks	Average Total Trips/Phase	Phase Duration
Operation	2	4	33 %	21,900	30 years
Drilling & Completions	5	7	39%	N/A	N/A
Combined	7	11	33%	N/A	N/A

County Road 204

Based on the County's background traffic calculations, Oxy's Pond 13 E/W facility related traffic will have an average of <1% increase on daily traffic activity during operations of the facility in 2013 on CR 204. Traffic activities will increase from the 2013 estimate an average 2.45% during drilling and completion operations on CR204. The following Table 3 summarizes the expected percentage of trips this facility will generate on CR 204.

Table 3: CR 204 Trip Distribution – Pond 13 E/W Facility

Year	Estimated CR 204 VPD	Generate Average Operation Trips/Day	Generated Percent of Trips/Day Average	Generated Maximum Trips/Day	Generated Percent of Trips/Day Maximum
2013	446	2	<1%	11	2.45%

County Road 213

Based on the County's background traffic calculations, Oxy's Pond 13 E/W facility related traffic will have a maximum 17% increase on daily traffic activity during operations of the facility in 2013 on CR 213. Traffic activities will increase from the 2013 estimate an average 92% during drilling and completion operations on CR204.Table 4 summarizes the expected percentage of trips this facility will generate on CR 213.

Table 4: CR 213 Trip Distribution – Pond 13 E/W Facility

Year	Estimated CR 213 VPD	Generated Average Operation Trips/Day	Generated Percent of Trips/Day Average	Generated Maximum Trips/Day	Generated Percent of Trips/Day Maximum
2013	12	2	17%	11	92%

Note that the CR 213 will see a significant increase in traffic only because it currently has a very low baseline of traffic volume. Additionally, the majority of traffic on this road is currently associated with the natural gas industry, and the general public will not be impacted by the increase of traffic on this road.

CONSTRUCTION PHASE

The storage ponds are currently built and major excavation of the site will not be necessary. Only minor construction traffic will be generated by this project to bring the facility up to COGCC E&P Waste Management Facility standards.

ROADWAY ANALYSIS

Existing Parcel

Current land use on the subject parcel is primarily natural gas development. The majority of existing traffic on CR 213 is related to natural gas development activities, very limited agricultural activities and very low density rural residential uses.

State Highway Crossings and Access

The roadway access to this site does not cross any highway right-of-ways managed by the Colorado Department of Transportation. CR 204 is accessed via Mesa County 45 Road which intersects I-70 at Exit 62 in DeBeque, Colorado. This grade-separated interchange access point is controlled by stop signs at the top of each exit ramp. Site distances are adequate in both directions at these control points. Additional traffic control is not needed at this location.

The US Highway 6 / I-70 Frontage Road terminates at Mesa County 45 Road approximately 300 feet northwest of the DeBeque interchange. This intersection is two-way stop-controlled. Traffic traveling to this site from I-70 would have the right-of-way at this intersection.

Railroad Crossings

Mesa County 45 Road crosses under a main railroad line approximately 0.5 miles north of I-70. This line is generally used for the transport of freight, coal, and passenger rail traffic. This railroad crossing is grade separated. Clearance for transport trucks under this railroad bridge is adequate. The roadway access to this site does not cross any other active railroad right-of-ways.

Intersection of CR 204 & 213

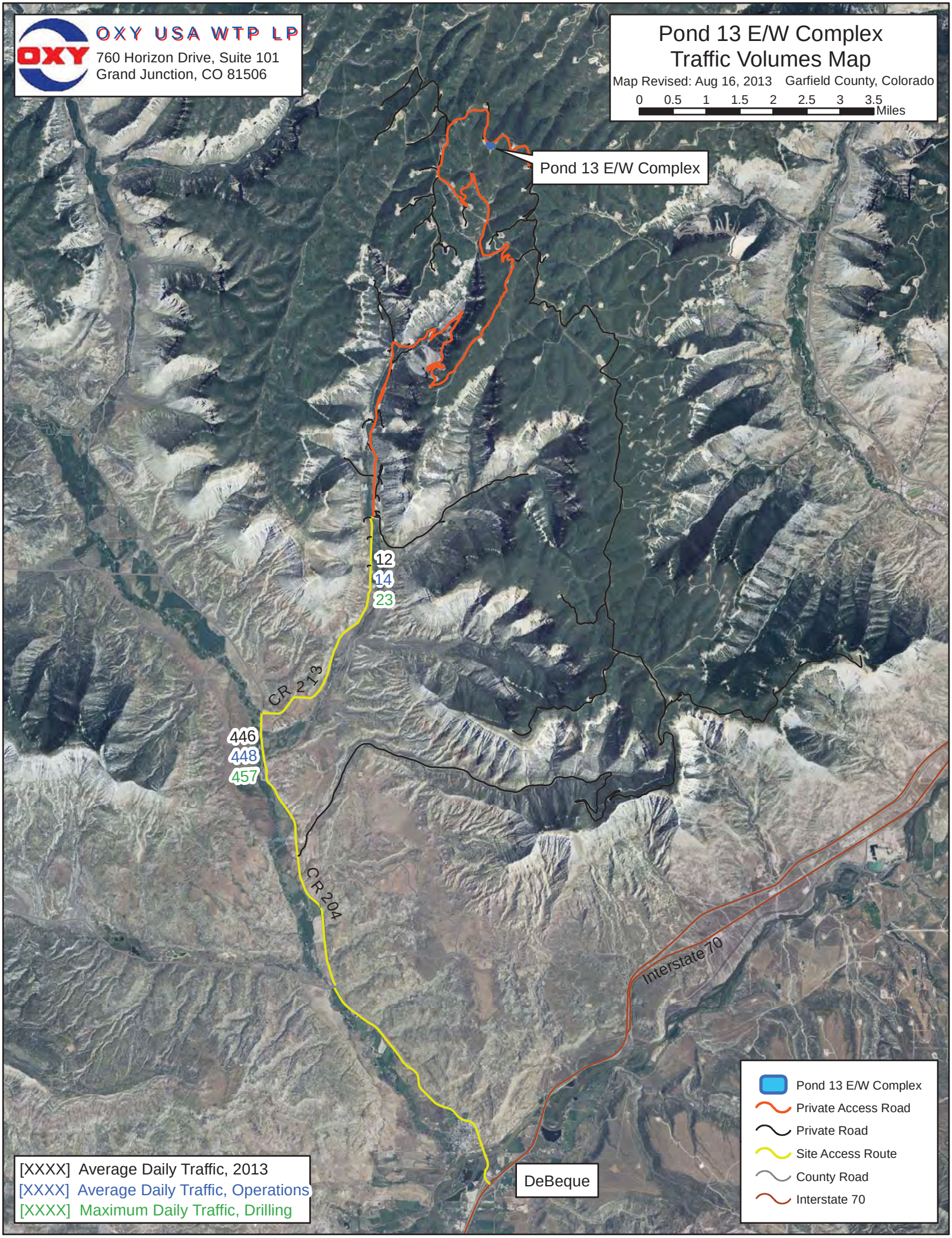
As noted above, there is a deceleration/turn lane for north bound traffic on CR 204 turning right onto CR 213. A stop sign controls west bound traffic on CR 213 at the intersection of that road with CR 204. Given the amount of traffic estimated to be generated from the proposed facility, additional improvements at this intersection are not needed at this time.

RECOMMENDATIONS

Based on the expected trip generation rates discussed above, the increase in average daily traffic is not expected to be significant on roads generally used by the public. CR 204 will see only a minor increase in traffic. CR 213 will see a significant increase in traffic only because of a very low baseline of traffic volume. However, the total traffic volumes will remain very low and can be accommodated by the existing roadway. Additionally, the majority of traffic on this road

is associated with the natural gas industry. At worst, there would be a minor increase in traffic which would peak during drilling and completion activities. As mentioned in the Roadway Analysis, the addition of traffic generated by the proposed facility does not increase existing volumes to levels required for State or County permits.

Attachment – Pond 13 Traffic Volume Map


OXY USA WTP LP
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Pond 13 E/W Complex
Traffic Volumes Map
Map Revised: Aug 16, 2013
Garfield County, Colorado
0 0.5 1 1.5 2 2.5 3 3.5
Miles
Pond 13 E/W Complex
12
14
23
CR 213
446
448
457
CR 204
Interstate 70
DeBeque
[XXXX] Average Daily Traffic, 2013
[XXXX] Average Daily Traffic, Operations
[XXXX] Maximum Daily Traffic, Drilling
Pond 13 E/W Complex
Private Access Road
Private Road
Site Access Route
County Road
Interstate 70

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Water Supply and Distribution Plan

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

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OXY USA WTP LP

POND 13 E & P CENTRALIZED WASTE MANAGEMENT FACILITY

WATER SUPPLY AND DISTRIBUTION PLAN

LUDC 4-203.M. Water Supply and Distribution Plan.

The Oxy Pond 13 facility does not require potable water source for personnel or freshwater for sanitary facilities, landscaping or day to day operations of the facility.

The operations of the facility will be similar to other natural gas operations in relatively remote areas of Garfield County. No potable water will be provided at this facility. The proposed use is an unmanned facility with personnel onsite only for short intervals. Personnel provide their own potable water carried in their vehicles. Oxy makes potable water available at their field office to staff and contractors.

Sanitary facilities will not require a source of water and will be provided by portable toilets located at numerous sites in the field per OSHA standards. Landscaping is not being proposed and a water system is not required to maintain any plantings. The storage facility does not use water in its daily operation.

The water stored in the pond complex is generated from natural gas production. The source of the water is from nontributary sources.

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NON-TRIBUTORY GROUND WATER ANALYSIS

OXY USA WTP LP

POND 13 EAST AND WEST
CENTRALIZED E & P WASTE FACILITY

The OXY USA WTP LP (Oxy) Pond 13 East and West Centralized E & P Waste Facility will contain only non-tributary water produced from the following formations:

Undifferentiated Wasatch Formation,

Mesa Verde Group, including the following:

- Williams Fork Formation including the Ohio Creek, Williams Fork Units 1-4, and the Cameo Units 1 & 2;
- Iles Formation including the Rollins, Cozzette and Corcoran units.

Niobrara, located in the Mancos Shale Formation.

Included in this analysis is the "Produced Nontributary Ground Water Rules" issued by the Department of Natural Resources – Office of the State Engineer. This document includes a description of the non-tributary formations of the Piceance Basin and maps demonstrating the locations of these formations.

Section 17.7 A through D of the "Produced Nontributary Ground Water Rules" document contains descriptions of ground water determined to be non-tributary by the State Engineer.

Also included in this analysis are the following documents:

- Maps of Oxy operations located in Garfield County in relationship to the non-tributary formations;
- A list of Oxy wells and with codes that identify the producing formation;
- The COGCC Formation Codes that identify the formations.

The maps of the Oxy operation identify that the wells are within the non-tributary area identified by the "Produced Nontributary Ground Water Rules" Section 17.7 A - D. The list of Oxy wells identifies each producing formation were the water originated. All of these formations are identified by the State Engineer as non-tributary.

These documents demonstrate that the produced water from Oxy operations is non-tributary ground water.

Attachments

A - “Produced Nontributary Ground Water Rules”
B – Cascade Creek Operational Area Maps (2)
C – List of Oxy Wells and Producing Formations
D – COGCC Formation Codes

Attachment A

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DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE STATE ENGINEER

RULES AND REGULATIONS FOR THE DETERMINATION OF THE NONTRIBUTARY NATURE OF GROUND WATER PRODUCED THROUGH WELLS IN CONJUNCTION WITH THE MINING OF MINERALS "PRODUCED NONTRIBUTARY GROUND WATER RULES"

2 CCR 402-17

17.1 Title

The title of these rules and regulations is "Rules and Regulations for the Determination of the Nontributary Nature of Ground Water Produced through Wells in Conjunction with the Mining of Minerals." The short title of these rules and regulations is "Produced Nontributary Ground Water Rules" and in this document the rules and regulations may be referred to as "Rules."

17.2 Authority

These Rules are promulgated pursuant to the authority granted the State Engineer in House Bill 09-1303, Section 3, as codified at section 37-90-137(7)(c), C.R.S.; and section 37-80-102(1)(g), C.R.S.

17.3 Scope and Purpose of Rules

A. The purpose of these Rules is to assist the State Engineer with administration in the case of dewatering of geologic formations by withdrawing nontributary ground water to facilitate or permit the mining of minerals.

B. These Rules establish procedures pursuant to which an operator may petition the State Engineer for a determination that water that is being or that may be withdrawn from geologic formations to facilitate or permit the mining of minerals is nontributary, as defined at section 37-90-103(10.5), C.R.S. These Rules further identify certain areas, locations and formations within the State of Colorado where the State Engineer shall regard ground water removed from geologic formations to facilitate or permit mining of minerals to be nontributary.

C. These Rules provide for the use of engineering and scientific methodologies, including the use and results of ground water modeling or other ground water characteristics, such as water chemistry, hydrogeology, or other scientifically based approaches, that an applicant may rely upon in support of a petition for a nontributary determination.

D. These Rules apply only to ground water removed from geologic formations to facilitate or permit mining of minerals. Consistent with section 37-90-137(7)(c), C.R.S., the State Engineer is adopting these Rules to assist with his administration of ground water withdrawn to facilitate or permit the mining of minerals. Consistent with the intent of House Bill 09-1303, such administration includes the State Engineer using nontributary

determinations made pursuant to these Rules for purposes of issuing water well permits pursuant to section 37-90-137(7), C.R.S., and to obviate the need for administration of wells subject to permitting consideration, as allowed by sections 37-90-137(7) and 37-92-305(11), C.R.S.. The State Engineer shall not use these Rules for permitting of wells pursuant to section 37-90-137(4), C.R.S.

E. These Rules do not apply to any aquifer or portion thereof that contains designated ground water and is located within the boundaries of a designated ground water basin.

F. These Rules and regulations shall not be construed to establish the jurisdiction of either the State of Colorado or the Southern Ute Indian Tribe over nontributary ground water within the boundaries of the Southern Ute Indian Reservation as recognized in Pub. L. No. 98-290, § 3, 98 Stat. 201 (1984).

17.4 Definitions

A. Statutory Definitions. The terms listed below have the identical meaning as in the referenced statutes:

1. "Ground water," also referred to as "underground water," is defined in section 37-90-103(10.5), C.R.S. and section 37-91-102(7), C.R.S.

2. "Nontributary ground water" is defined in section 37 90-103(10.5) C.R.S.

B. Specific Definitions. Unless expressly stated otherwise or the context otherwise requires:

1. "Field" means a region with an abundance of oil and/or gas wells extracting petroleum hydrocarbons from below ground.

2. "Formation" or "geologic formation" means a certain number of rock strata that have a comparable lithology, facies or other similar properties.

3. "Oil and gas well" means any boring or well into the earth's surface designed to find and produce petroleum oil and/or gas hydrocarbons.

4. "Operator" means any person or entity engaged in the mining of minerals, including any person or entity conducting exploration, production and/or maintenance of oil and gas well(s) or field(s), and excluding geothermal energy developers.

5. "Produced water" means ground water removed during the dewatering of one or more geologic formations to facilitate or permit mining of minerals.

C. Other Definitions. All other words used herein shall be given their usual, customary, and accepted meanings. All words of a technical nature specific to the well drilling industry shall be given the meaning that is generally accepted in that industry. All words of a technical or legal nature specific to the State of Colorado water rights administration shall be given the meaning that is generally accepted within that field.

17.5 Process for Obtaining a Determination of Nontributary Ground Water

Any person may seek to amend these Rules, through applicable rulemaking procedures, to identify areas within the State of Colorado where the State Engineer shall regard Produced Water to be nontributary, or to amend, based on factual information not presented at the time of adoption, the Rules to exclude areas previously determined to be nontributary pursuant to these Rules or any amendment thereof. An amendment excluding areas previously determined to be nontributary will not invalidate any existing permits issued pursuant to these Rules or otherwise cause the State Engineer to change his administration of wells in existence prior to such amendment. As an alternative to requesting a rulemaking proceeding, an Operator may obtain a determination regarding the nontributary nature of Produced Water through an adjudicatory proceeding before the State Engineer. Any such request for a nontributary determination must be submitted pursuant to the procedures set forth in this Rule 17.5.

These Rules do not preclude any Operator from obtaining a determination regarding the nontributary nature of Produced Water, for the purpose of section 37-90-137(7), C.R.S., through an appropriate proceeding before the Water Court.

A. Submittal of Petition for a Determination of Nontributary Ground Water

An Operator or group of Operators seeking a nontributary determination for Produced Water withdrawn from an existing well or group of wells, or for a well or wells to be constructed in one or more geologic formations within a geographically delineated area ("Applicant") shall file a petition in the form of a letter and accompanying professional report to the State Engineer. The petition shall at a minimum contain the following information:

1. Information indicating whether the ground water will be withdrawn to facilitate or permit the mining of minerals, or withdrawn for purposes other than the mining of minerals.

2. Information indicating whether the Applicant is seeking a nontributary determination for a single well, group of wells, or for all wells, whether such wells have been constructed or are proposed to be constructed in one or more geologic formations within a geographically delineated area.

3. Information sufficient to demonstrate, through analytic or numeric modeling, that the depletions that result from pumping at the location of the well, wells, or at any well constructed, or proposed to be constructed in one or more geologic formations within a geographically delineated area, meet the nontributary standard. In lieu of ground water modeling, the Applicant may provide geologic, hydrologic, and other information sufficient to demonstrate that each subject geologic formation at the well location or within the geographically delineated area is hydraulically disconnected from all surface streams such that there will be no depletions to any surface stream as a result of pumping.

B. Notice and Comment

1. Concurrent with submission of the petition to the State Engineer, the Applicant shall file notice of the petition. The notice shall be sent to all parties on the Produced Nontributary Ground Water Notification List for the water division in

which the subject ground water is located and the primary newspapers in circulation in the affected watersheds.

2. The State Engineer shall establish a Produced Nontributary Ground Water Notification List for each water division within the State of Colorado for the purposes of ensuring that water users within each water division receive adequate notice of proceedings held pursuant to these Rules. In order to establish such notification list, the State Engineer shall, immediately upon effect of these Rules, and in January of each year thereafter, cause to have published in the water court resume for each water division an invitation to be included on such notification list for the applicable water division. Persons on the Produced Nontributary Ground Water Notification List shall be provided notice required pursuant to these Rules by either first-class mail, or, if a person so elects, by electronic mail.

3. The State Engineer shall allow 30 days for any person to respond to the petition. A person may respond to the petition by submitting written comments or by requesting that the matter be referred for hearing on the petition. The person must state the basis for such a request in sufficient detail to allow the State Engineer to determine whether a hearing is appropriate prior to an Initial Determination. The Applicant or the staff of the State Engineer may also refer the matter for hearing on the petition. If the State Engineer determines a hearing is appropriate, he shall schedule a hearing pursuant to the procedures described below. The State Engineer may submit the matter to a designated Hearing Officer at his discretion.

C. Initial Determination

1. If no person requests a hearing, the staff of the State Engineer shall evaluate the petition and any written comments, and produce an Initial Determination with respect to whether water withdrawn from an existing well or wells proposed to be constructed in one or more geologic formations within a geographically delineated area is nontributary. The Initial Determination may find that water from only certain wells or certain locations is nontributary.

2. The staff of the State Engineer shall provide a copy of its Initial Determination to the Applicant, any person who submitted written comments, and any person who requested a copy of the Initial Determination. If no person objects to the Initial Determination within 30 days, the staff of the State Engineer will submit its initial determination to the State Engineer for review and certification as a Final Decision, as described below.

D. Hearing

1. If any person objects to the Initial Determination, or if the State Engineer has determined a hearing is appropriate before an Initial Determination, the matter will be set for an adjudicatory hearing before the State Engineer. The person objecting must state in detail the basis for such an objection to the Initial Determination.

2. The hearing shall be conducted pursuant to the Division of Water Resources Procedural Regulations, 2 CCR 402-5, and applicable provisions of the State Administrative Procedure Act. The Applicant shall provide notice of the hearing to any person who responded to the petition.

3. For purposes of the hearing, the Applicant shall be considered the party requesting the hearing and the proponent of the order, and shall have the initial burden of proof. Any person who responded to the petition may participate as a party to the hearing. The staff of the State Engineer may participate as a party.

4. The State Engineer may consider the Initial Determination of the staff of the State Engineer as evidence; however, the hearing will be *de novo*, based upon the evidence presented at the hearing.

E. Final Decision

If no hearing is held, the Initial Determination shall become the Final Decision of the State Engineer ("Final Decision") with respect to the Applicant's petition. If there has been a hearing on the petition, the decision of the State Engineer shall become the Final Decision of the State Engineer pursuant to procedures set forth in the Division of Water Resources Procedural Regulations, 2 CCR 402-5, and applicable provisions of the State Administrative Procedure Act.

F. Effect of Final Decision

1. The State Engineer shall rely upon the Final Decision to evaluate well permit applications submitted pursuant to section 37-90-137(7), C.R.S., where an operator is withdrawing nontributary ground water to facilitate the mining of minerals, and where the nontributary ground water being removed will be beneficially used.

2. The State Engineer shall rely upon the Final Decision to authorize the withdrawal of nontributary ground water to facilitate the mining of minerals without requiring a well permit, pursuant to section 37-90-137(7), C.R.S., where the nontributary ground water being removed will not be beneficially used.

3. Where a Final Decision is applicable to all wells to be constructed within a geographically delineated area, the State Engineer shall rely upon the Final Decision to evaluate all wells constructed within that area for the purposes set forth in the preceding paragraphs.

17.6 Engineering and Scientific Methodologies and Standards

A. An Applicant shall comply with the engineering and scientific methodologies and standards described in Rule 17.6 of these Rules when submitting a petition for determination of nontributary groundwater made pursuant to Rule 17.5 of these Rules.

B. Conceptual Model

For any petition for determination of nontributary groundwater submitted pursuant to Rule 17.5 of these Rules, an Applicant shall include a conceptual model of the geologic

and hydrogeologic characteristics of the relevant area, formation or basin under consideration. The conceptual model shall adequately represent the known geologic and hydrogeologic characteristics of the ground water system. At a minimum, the conceptual model shall define the hydrostratigraphic units along with any known characteristics and boundary conditions. The conceptual model will determine whether numerical or analytical modeling, or alternative methodologies are appropriate for evaluating the petition for a determination of nontributary ground water. For numerical modeling, the conceptual model shall establish the preliminary water budget of the system, which should include sources of water, flow directions, and discharge or exit points.

C. Ground Water Modeling

1. An Applicant may use mathematical ground water modeling simulating the ground water system through equations that describe the heads or flows with representative boundary conditions to demonstrate that the withdrawal of produced ground water that is, or is presumed to be, in hydraulic connection with the surface water system is nontributary, as defined at section 37-90-103(10.5), C.R.S.

2. Any ground water model used to demonstrate that the withdrawal of produced ground water that is, or is presumed to be, in hydraulic connection with the surface water system is nontributary shall comply with the protocol for development and use of a mathematical ground water model as generally agreed upon by technical experts in the water resources discipline. Many analytical and numerical models are available that may be found acceptable for use in the evaluation of an Application. However, the Applicant must demonstrate the model's suitability and applicability to determining that the ground water is nontributary. The Applicant should contact the State Engineer's Office regarding the use of models since certain models will have more or less credibility with ground water modeling experts.

3. For situations in which the hydrologic system is under confined or semi-confined conditions, model calculations shall utilize a storativity (storage coefficient). A specific yield value may be used in the calculations where water table (unconfined) conditions exist.

4. All data files used in a numerical or analytical ground water model shall be provided in an electronic format deemed acceptable to the State Engineer's Office. All data files shall include the model input files as well as any supporting data used in the development of the model input files. Any GIS shape files used in the development of the model shall also accompany submittal of the model.

5. Documentation to explain the context and methodology of all ground water modeling shall accompany the Professional Report as described in Rule 17.6.E. It is incumbent upon the Applicant to demonstrate to the satisfaction of the State Engineer's Office that the model code and input data are suitable and applicable for determining that the produced ground water is nontributary. Proprietary information and data need not be disclosed by an Applicant beyond that which is

deemed necessary by the State Engineer's Office to evaluate the model and verify model input parameters.

6. Any party objecting to a petition for an adjudicatory proceeding or objecting to an Initial Determination, as specified in Rule 17.5, may obtain all supporting information relied upon by an Applicant in developing any ground water modeling, or alternative methodologies. The Applicant's obligation to disclose such information arises upon request of any party and, to the extent that the Applicant deems and the State Engineer finds any such information sensitive, confidential, or proprietary, the parties and State Engineer shall agree to hold such information confidential and protect it from public dissemination under appropriate terms and conditions.

D. Alternative Methodology

1. Geologic conditions at a site may effectively isolate the mineral-bearing production zones from the surface water system. An alternative method may be utilized to demonstrate that ground water produced in conjunction with the mining of minerals from the potential and existing production zones is nontributary. Alternative methodologies are intended to demonstrate that the production zones are disconnected from the surface water system by a lithologic discontinuity or structural separation between the production zone and its outcrop equivalent.

2. The criteria for demonstrating isolation of an existing or potential production zone from the surface water system may include both direct and indirect physical evidence such as that obtained from drilling, borehole geophysical logging, surface seismic and geophysical surveys, drill stem and pump tests, geochemical analyses and surface and subsurface mapping.

   Geologic and geophysical maps and cross sections shall be based on actual evidence obtained from drilling, geophysical and/or seismic surveys or other verifiable geotechnical investigations. Location, seismic and geophysical survey data, including GIS data, shall be submitted in a paper and/or electronic format deemed acceptable by the State Engineer's Office.

3. Published professional reports, investigations, or technical papers may be provided as a source of factual evidence in support of a petition.

4. Petrophysics, hydrogeologic data and water chemistry may be used to support the conclusions of a petition. Samples of water and gas, or other media to be subjected to chemical or isotopic analysis, shall be collected, handled and analyzed to ensure that the results are consistent with the intended use of the data. A detailed description of the sample collection procedures and analytical methods shall be submitted to the State Engineer's Office upon request. Laboratory data shall be submitted in a format deemed acceptable by the State Engineer's Office.

5. Copies of supporting evidence shall be provided to the State Engineer's Office upon request. Such evidence may include, but is not limited to, geophysical logs and surveys, pump and drill stem test data, lithologic descriptions or other

physical or hydrologic analyses and water quality/chemistry analyses on which the Applicant has relied to support a petition. Proprietary information and data need not be disclosed by an applicant beyond that which is deemed necessary by the State Engineer's Office to evaluate the petition and demonstrate that the data on which the Applicant's conclusions are based is valid.

6. Any party objecting to a petition for an adjudicatory proceeding or objecting to an Initial Determination, as specified in Rule 17.5, may obtain all supporting information relied upon by an Applicant in developing any ground water modeling, or alternative methodologies. The Applicant's obligation to disclose such information arises upon request of any party and, to the extent that the Applicant deems and the State Engineer finds any such information sensitive, confidential, or proprietary, the parties and State Engineer shall agree to hold such information confidential and protect it from public dissemination under appropriate terms and conditions.

E. Professional Report

1. The supporting data for a petition shall be assembled in a professional report and shall include appendices of the data and calculations used to demonstrate that the ground water is not connected to the surface water system or that the ground water otherwise meets the statutory definition of nontributary ground water as set forth at section 37-90-103(10.5), C.R.S.

2. A detailed map of the proposed nontributary area shall accompany the report and shall be overlain on a standard U.S.G.S. topographic map with scale 1:24000 inches when such area can be shown within the boundary of 7 mile by 14 mile map area. For larger areas, a topographic base map with a scale of 1:50000, 1:100000 or 1:250000 inches may be utilized; using the largest scale possible that will enclose the entire area of the nontributary ground water determination, wells, and locations of data points, surveys, and other features related to the petition.

3. Standard Data Format – For consistency in reporting, the following parameters shall be used as the standard format and units for reporting the stated types of data: *Where: L = length (feet); t = time (day).*

   a. Hydraulic conductivity (K) shall be reported in units of L/t (ft/day).
   b. Transmissivity [T] shall be reported in units of L^2/t (ft^2/day).
   c. Water production rate [Q] shall be reported in units of L^3/t (ft^3/day).
   d. Specific storage (S_s) shall be reported in units of L^{-1} (1/ft).
   e. Water volume shall be reported in units of L^3 (ft^3).
   f. Specific yield, storativity or storage coefficient shall be reported as a ratio.
   g. Thicknesses (aquifer, formation, etc.) shall be reported in units of L (feet).
   h. Distances shall be reported in units of L (feet).

4. The Applicant shall submit two paper copies of the report and appendices and one electronic copy, including GIS shape files, in a format deemed acceptable by the State Engineer's Office.

5. A petition for multiple production zones may be submitted with a single report utilizing data from a source or sources that include the same geographic/geologic area.

17.7 Specific Locations of Nontributary Ground Water in Colorado

Ground water in the State of Colorado is legally presumed to be "tributary," or hydraulically connected to surface water in such a fashion so as to require administration within the prior appropriation system in conjunction with surface rights, unless it is demonstrated to be nontributary ground water in accordance with the law. *See Simpson v. Bijou Irrigation Co.*, 69 P.3d 50, 57 n.7 (Colo. 2003). For purposes of administration under section 37-90-137(7), C.R.S. absent a determination made pursuant to Rule 17.5 of these Rules, or other Rulemaking, the State Engineer shall regard all Produced Water within the State of Colorado to be tributary, with the exception of the ground water described in Rule 17.7.A through D.

A. The Denver Basin

The State Engineer shall regard the bedrock aquifers of the Denver Basin (the Dawson, Denver, Arapahoe, and Laramie-Fox Hills) to be nontributary only where shown to be nontributary by the Denver Basin Rules, 2 CCR 402-6. Pursuant to section 37-90-103(10.7), C.R.S., the State Engineer shall regard all remaining ground water in the bedrock aquifers of the Denver Basin subject to the Denver Basin Rules to be not nontributary.

B. Water Rights Found to be Nontributary by a Valid Court Decree

The State Engineer shall regard all water rights that are decreed nontributary by a court to be nontributary only to the extent provided by the court decree and only insofar as such water is used in a manner wholly consistent with the terms and conditions of such decree.

C. Existing Ground Water Well Permits

House Bill 09-1303, Section 3, codified at section 37-90-137(7)(c), C.R.S. provides "[a]ny rules promulgated pursuant to this subsection (7) shall not conflict with existing laws and shall not affect the validity of ground water well permits existing prior to the adoption of such rules." Therefore, the State Engineer shall regard as nontributary all ground water permitted for withdrawal as nontributary ground water pursuant to well permits issued by the State Engineer prior to the adoption of these Rules.

D. For the purpose of meeting the objectives in the scope and purpose of these Rules, Rule 17.7.D. identifies geographically delineated areas under which the ground water in only certain formations is nontributary for the limited purposes of these Rules. Small-scale maps showing the extents of the delineated areas and identifying the geologic formations are included as a reference in an appendix to these Rules. Larger-scale maps are available on the Division of Water Resources' website along with an electronic version of these Rules. The small-scale and large-scale maps show identical areas and each are incorporated as part of the Rules. The delineated areas may be viewed through Division of Water Resources' public data viewing tools as they are developed

and the data files describing the areas are also available for downloading from the Division of Water Resources' website.

1. Ground water in the Piceance Basin, Mesaverde Formation, Cameo and South Canyon Coal Groups within the boundaries shown on the small-scale Map A-1 in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 1, available on the Division of Water Resources' website.

2. Ground water in the Northern San Juan Basin, Fruitland Formation within the boundaries shown on the small-scale Map A-2 in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 2, available on the Division of Water Resources' website.

3. Ground water in the Piceance Basin, Neslen Formation within the boundaries shown on the small-scale Map A-3 in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 3, available on the Division of Water Resources' website.

4. Ground water in the Paradox Basin, Paradox Formation within the boundaries shown on the small-scale Map A-4 in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 4, available on the Division of Water Resources' website.

5. Ground water in the following formations in the Sand Wash Basin:

    a. Wasatch Formation (Hiawatha Formation) within the boundaries shown on the small-scale Map A-5a in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 5a, available on the Division of Water Resources' website.
    b. Nugget Sandstone, Dakota Sandstone, Mowry Shale, Frontier Formation, Baxter Shale, Mesaverde Group, Lewis Shale, Lance Formation, and Fort Union Formation, within the boundaries shown on the small-scale Map A-5b in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 5b, available on the Division of Water Resources' website. For the Frontier Formation Mowry Shale and Dakota Sandstone, the delineated nontributary area excludes the upthrown fault block lying above the Uinta-Sparks fault system.

6. Ground water in the following formations in the Piceance Basin:

    a. Ground water in the Weber Formation within the boundaries shown on the small-scale Map A-6a in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 6a, available on the Division of Water Resources' website.
    b. Ground water in the Morrison and the Sundance/Entrada Formation within the boundaries shown on the small-scale Map A-6b in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 6b, available on the Division of Water Resources' website.

7. Ground water in the following formations in the Piceance Basin:

a. Ground water in the Undifferentiated Wasatch Formation within the boundaries shown on the small-scale Map A-7a in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 7a, available on the Division of Water Resources' website.

b. Ground water in the Middle and Lower Wasatch Formation within the boundaries shown on the small-scale Map A-7b in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 7b, available on the Division of Water Resources' website.

c. Ground water in the Iles Formation within the boundaries shown on the small-scale Map A-7c in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 7c, available on the Division of Water Resources' website.

d. Ground water in the Williams Fork Formation within the boundaries shown on the small-scale Map A-7d in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 7d, available on the Division of Water Resources' website. These boundaries are also representative of the Undifferentiated Mesaverde Group for the purpose of these Rules.

8. Ground water in the following formations in the Piceance Basin:

a. Ground water in the Mancos Formation within the boundaries shown on the small-scale Map A-8a in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 8a, available on the Division of Water Resources' website.

b. Ground water in the Dakota Formation within the boundaries shown on the small-scale Map A-8b in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 8b, available on the Division of Water Resources' website.

c. Ground water in the Morrison Formation within the boundaries shown on the small-scale Map A-8c in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 8c, available on the Division of Water Resources' website.

9. Ground water in the following formations in the Northern San Juan Basin:

a. Ground water in the Pictured Cliffs Sandstone Formation within the boundaries shown on the small-scale Map A-9a in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 9a, available on the Division of Water Resources' website.

b. Ground water in the Cliff House Sandstone Formation within the boundaries shown on the small-scale Map A-9b in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 9b, available on the Division of Water Resources' website.

c. Ground water in the Menefee Formation within the boundaries shown on the small-scale Map A-9c in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 9c, available on the Division of Water Resources' website.

d. Ground water in the Point Lookout Sandstone within the boundaries shown on the small-scale Map A-9d in Appendix A, which boundaries are

more clearly shown on the large-scale map labeled Map 9d, available on the Division of Water Resources' website.

e. Ground water in the Dakota Formation within the boundaries shown on the small-scale Map A-9e in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 9e, available on the Division of Water Resources' website.

10. Ground water in the following formations in the Denver-Julesburg Basin, provided such ground water is not in an upthrown fault block:

a. Ground water in the Pierre Shale Formation, Parkman Sandstone Member; also known as the Larimer, Richard, and Rocky Ridge Members; within the boundaries shown on the small-scale Map A-10a in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10a, available on the Division of Water Resources' website.

b. Ground water in the Pierre Shale Formation, Sussex Sandstone Member, also known as the Terry Member, within the boundaries shown on the small-scale Map A-10b in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10b, available on the Division of Water Resources' website.

c. Ground water in the Pierre Shale Formation, Shannon Sandstone Member; also known as the Hygiene Member, within the boundaries shown on the small-scale Map A-10c in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10c, available on the Division of Water Resources' website.

d. Ground water in the Lower Pierre Shale Formation within the boundaries shown on the small-scale Map A-10d in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10d, available on the Division of Water Resources' website.

e. Ground water in the Niobrara Formation within the boundaries shown on the small-scale Map A-10e in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10e, available on the Division of Water Resources' website.

f. Ground water in the Carlile Formation within the boundaries shown on the small-scale Map A-10f in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10f, available on the Division of Water Resources' website.

g. Ground water in the Greenhorn Formation within the boundaries shown on the small-scale Map A-10g in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10g, available on the Division of Water Resources' website.

h. Ground water in the Graneros Formation within the boundaries shown on the small-scale Map A-10h in Appendix A, which boundaries are more clearly shown on the attached large-scale map labeled Map 10h, available on the Division of Water Resources' website.

i. Ground water in the Dakota Group within the boundaries shown on the small-scale Map A-10i in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10i, available on the Division of Water Resources' website.

j. Ground water in the Lyons Formation within the boundaries shown on the small-scale Map A-10j in Appendix A, which boundaries are more clearly shown on the large-scale map labeled Map 10j, available on the Division of Water Resources' website.

17.8 Severability

If any portion of these Rules is found to be invalid, the remaining portion of the Rules shall remain in force and in effect.

17.9 Revisions

These Rules may be revised in accordance with section 24-4-103, C.R.S.

17.10 Other laws, rules, and decrees

These Rules shall be interpreted so as to not conflict with existing laws, rules, or decrees.

17.11 Effective Date

These Rules shall become effective 20 days after publication and shall remain in effect until amended or revoked as provided by law.

17.12 Statement of Basis and Purpose

The Statement of Basis and Purpose for these Rules is incorporated herein as part of the Rules.

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APPENDIX A

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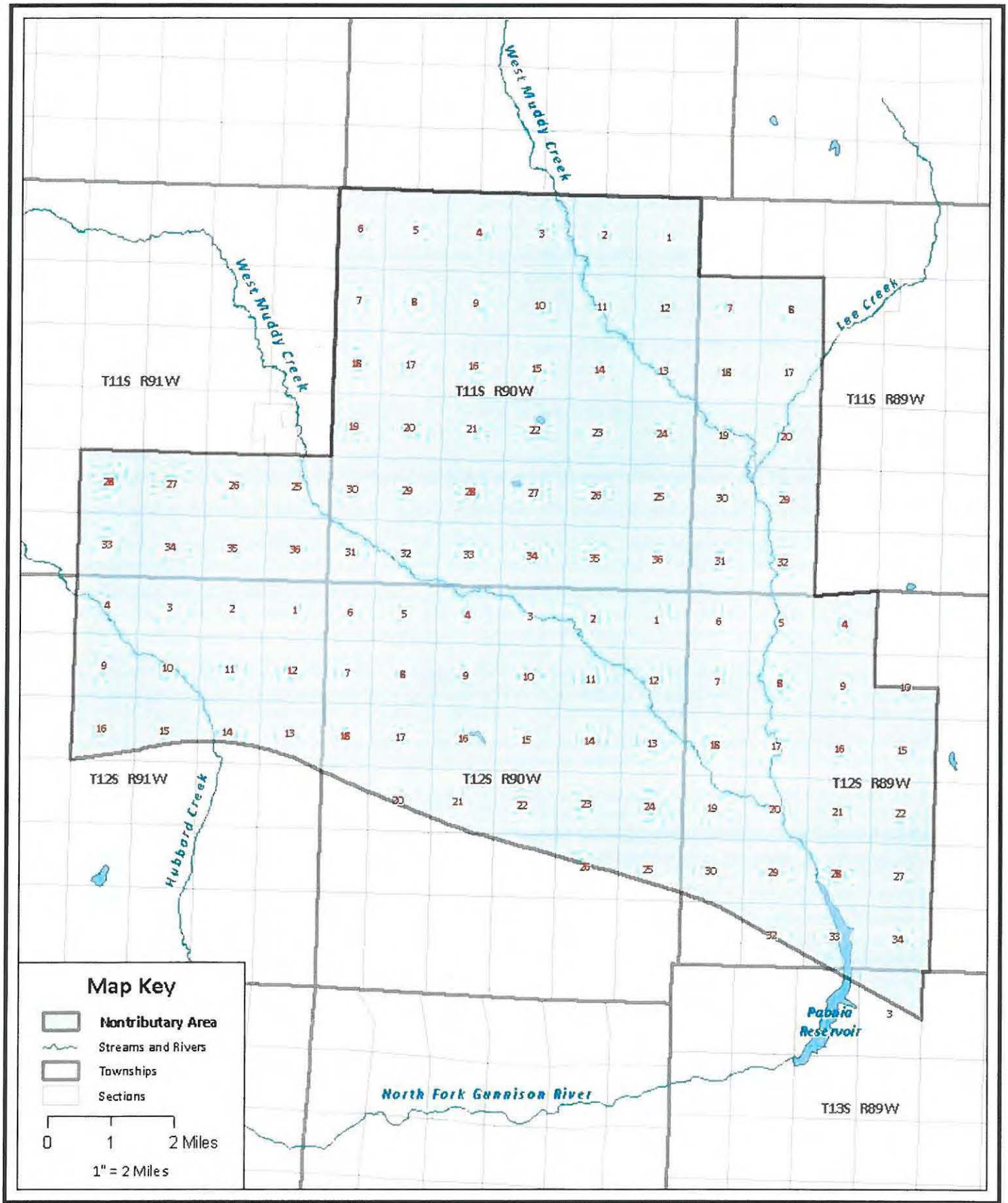


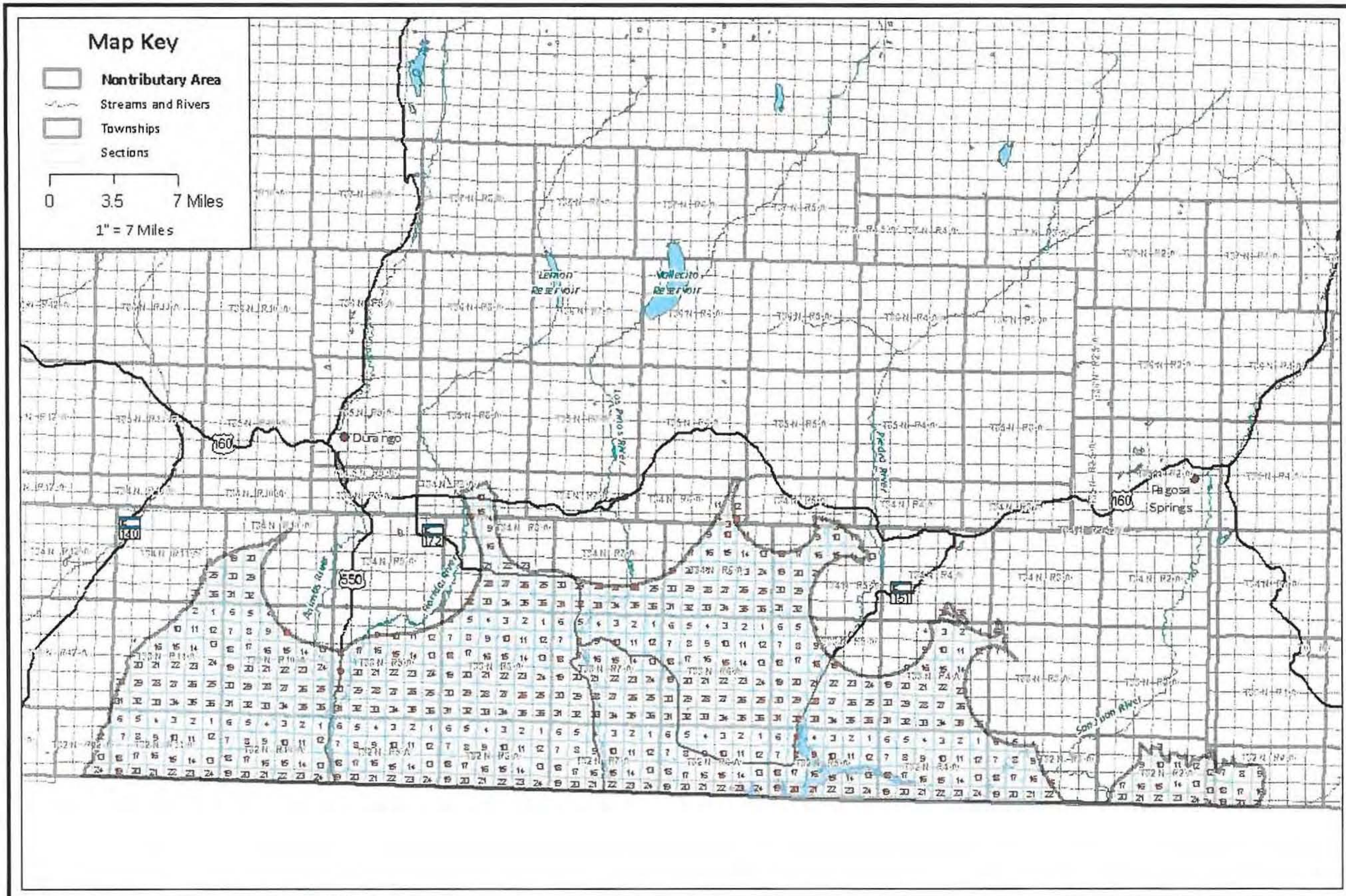
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Mesaverde Formation, Cameo and South Canyon Coal Group

Map A-1



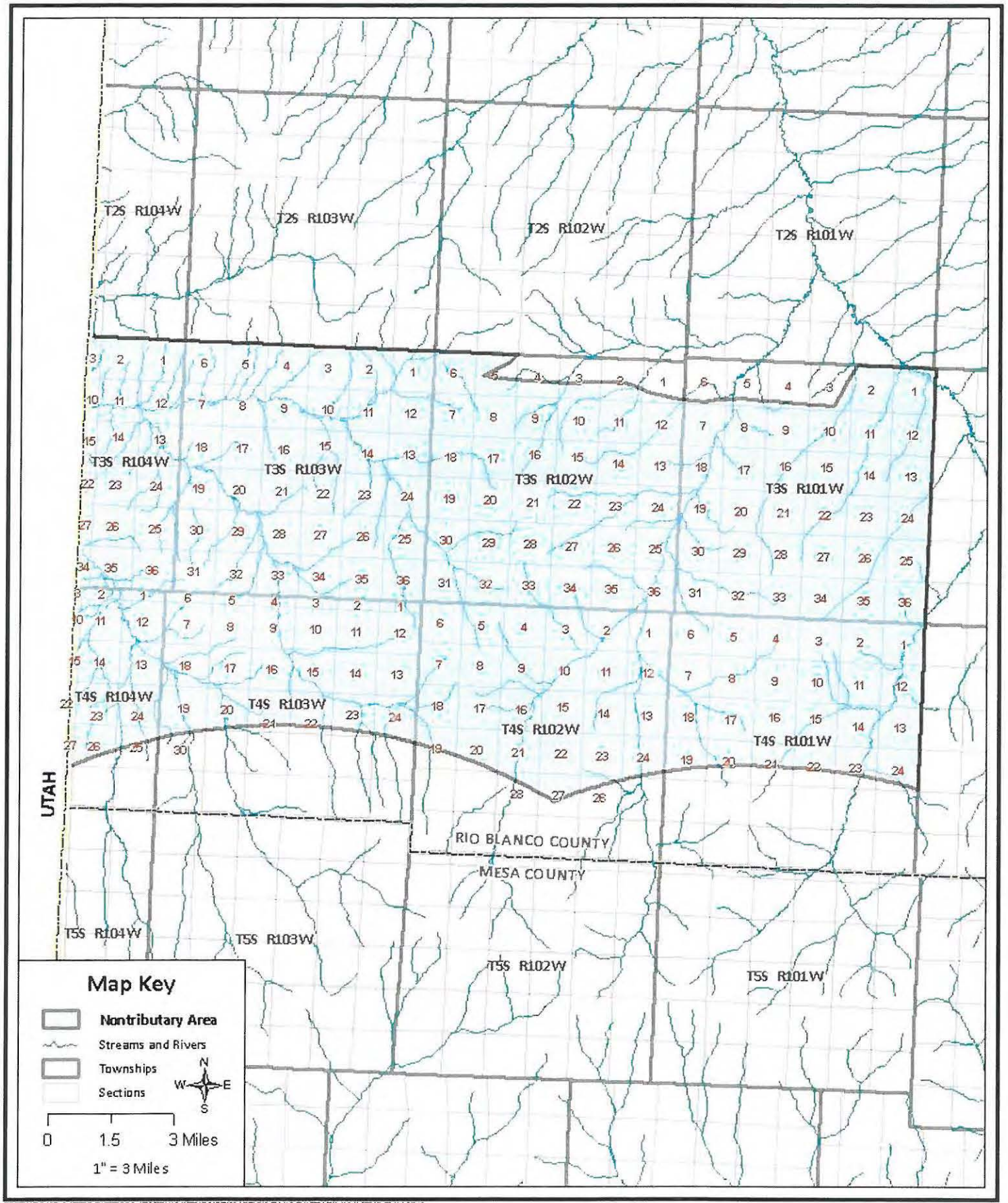
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Northern San Juan Basin

Fruitland Formation

Map A-2



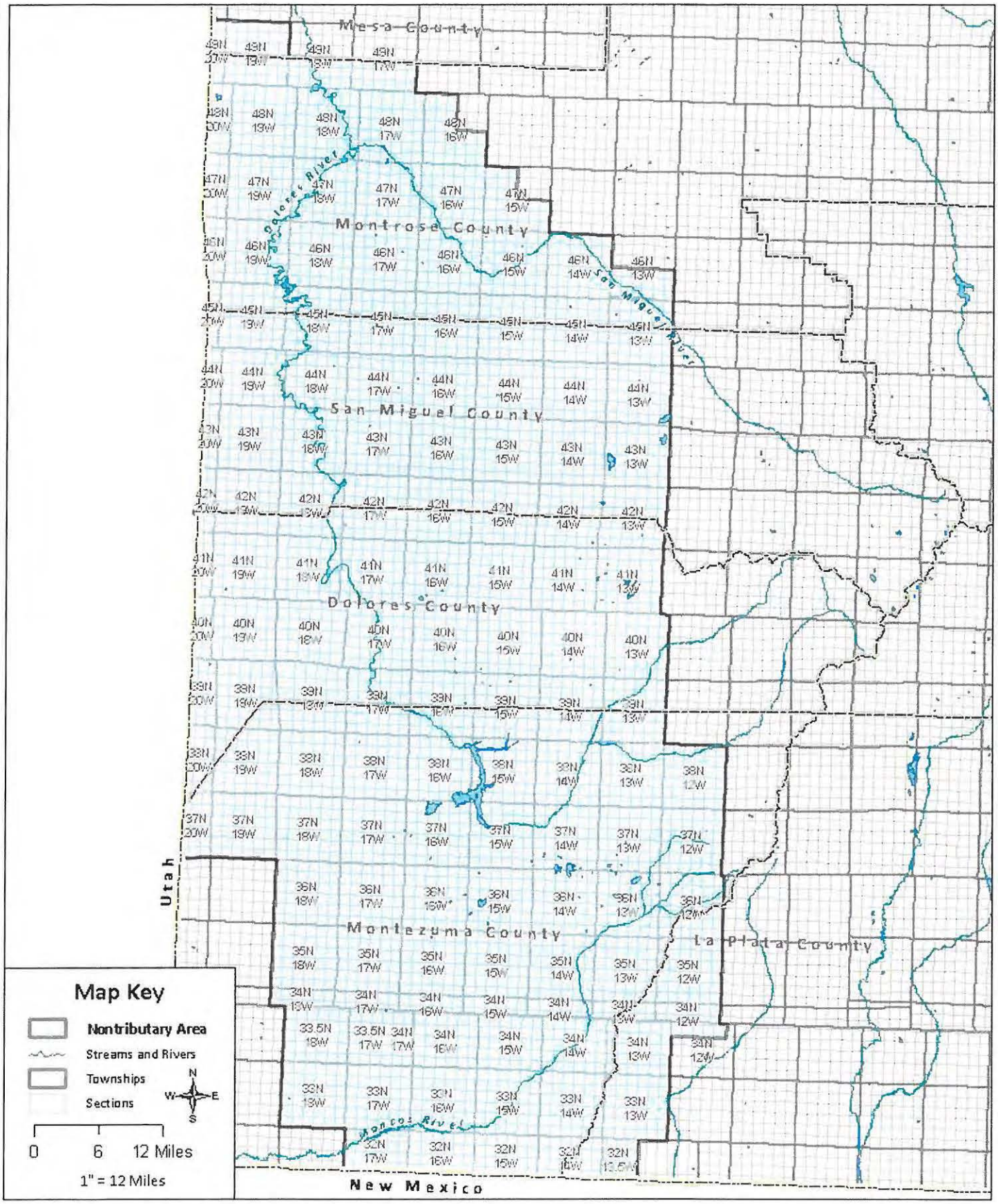
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Neslen Formation

Map A-3



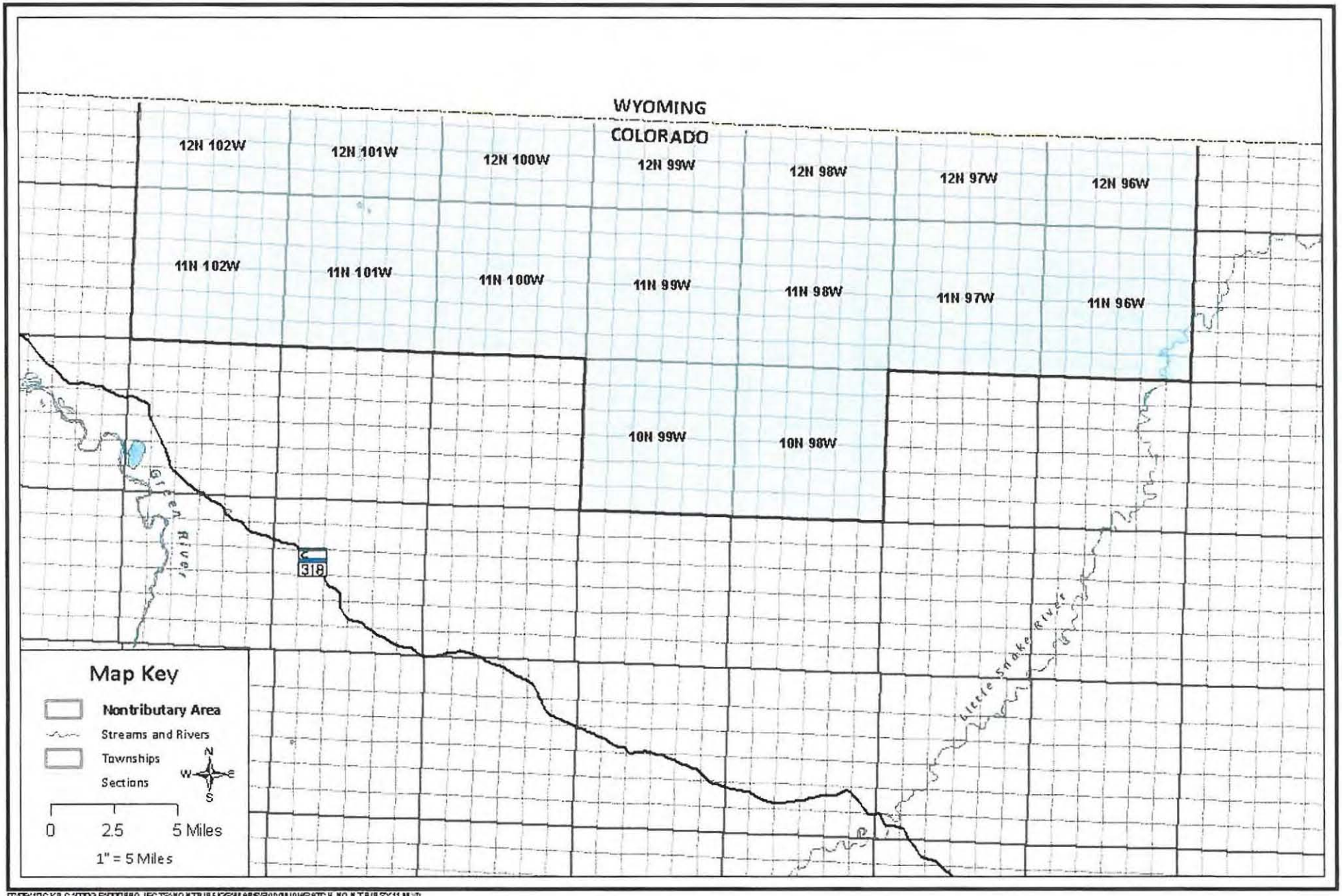
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Paradox Basin

Paradox Formation

Map A-4



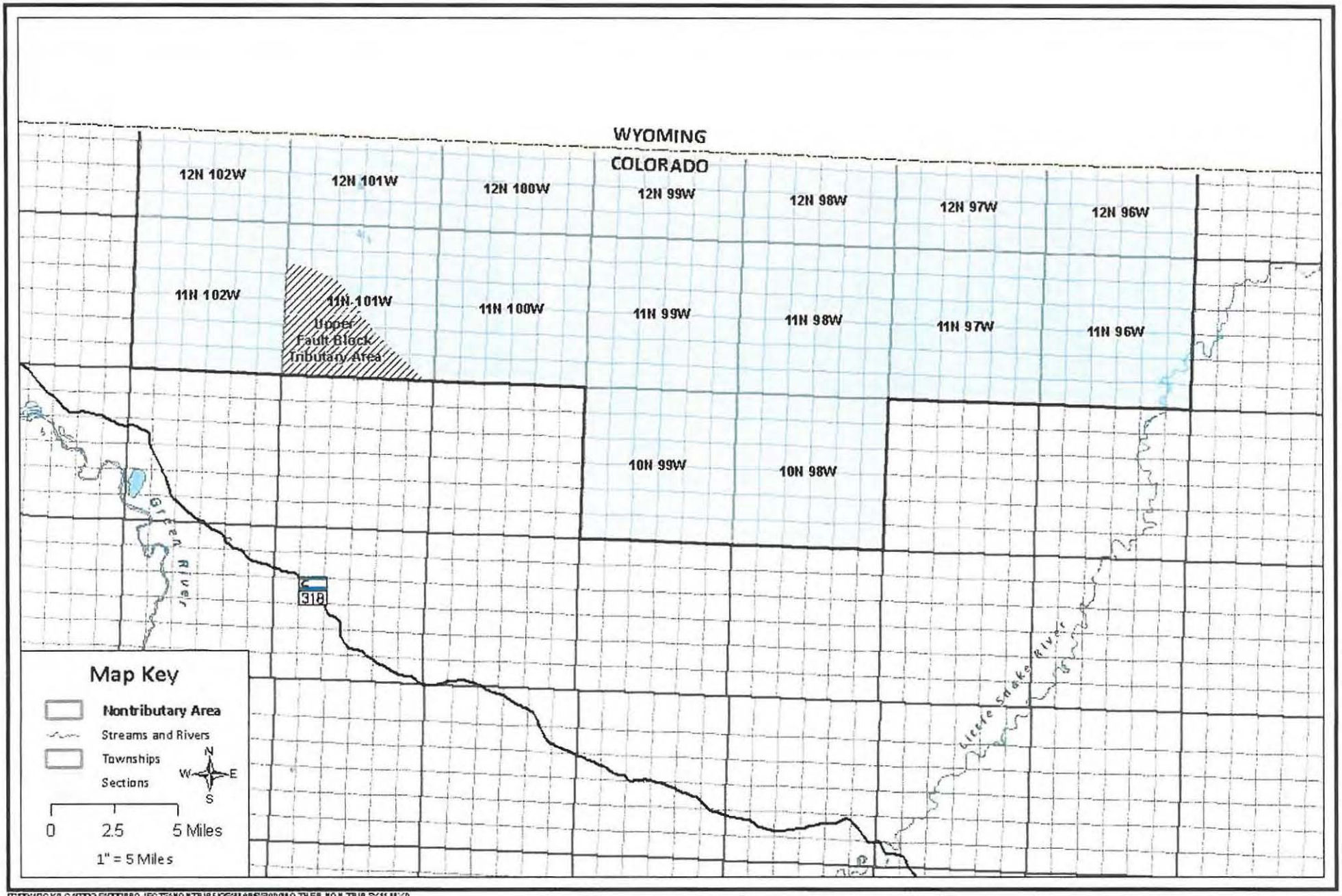
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Sand Wash Basin

Wasatch Formation (Hiawatha Member)

Map A-5a



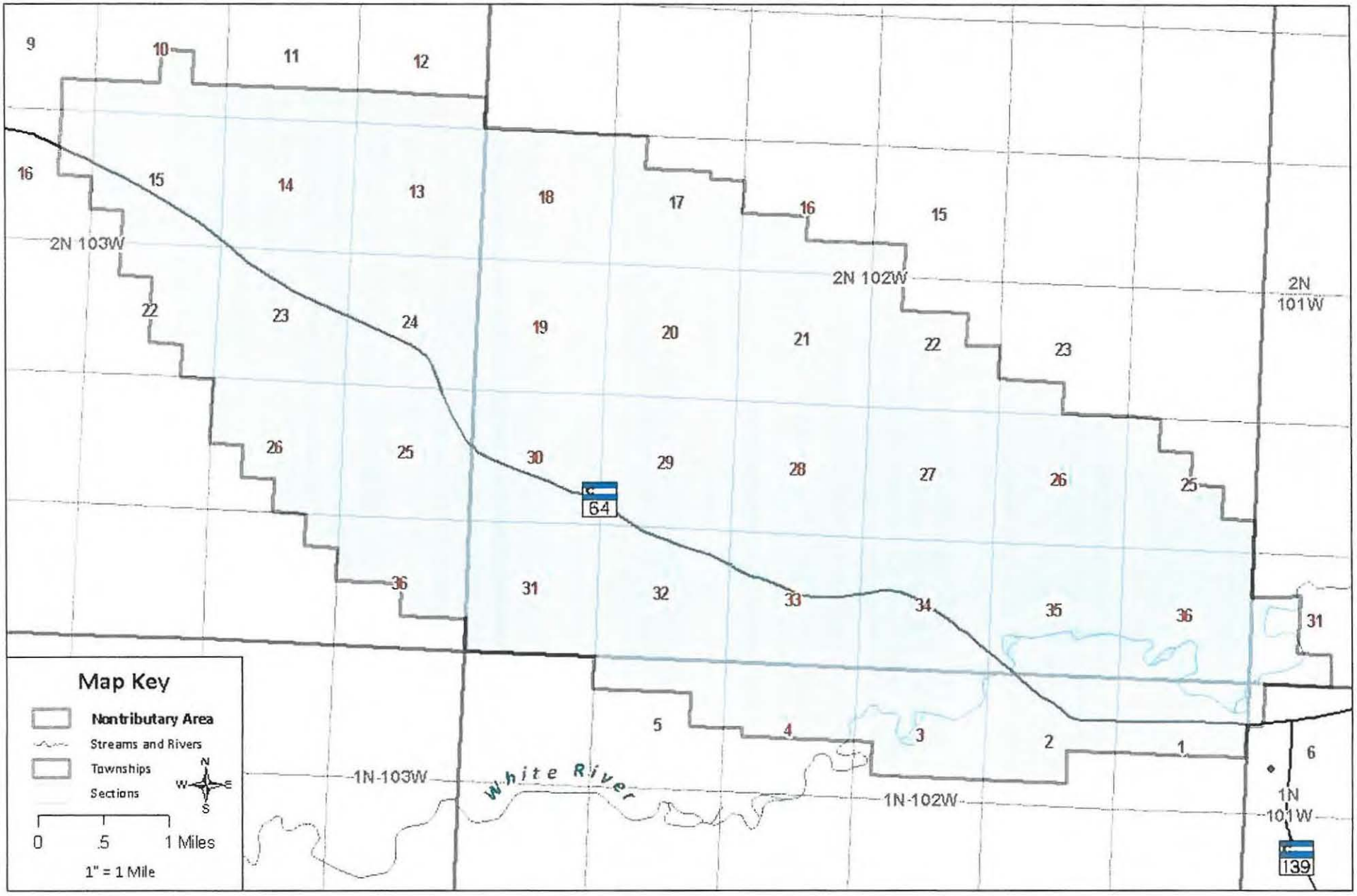
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Sand Wash Basin

Nugget Sandstone, Dakota Sandstone, Mowry Shale, Frontier Formation, Baxter Shale, Mesaverde Group, Lewis Shale, Lance Formation, Fort Union Formation

Map A-5b



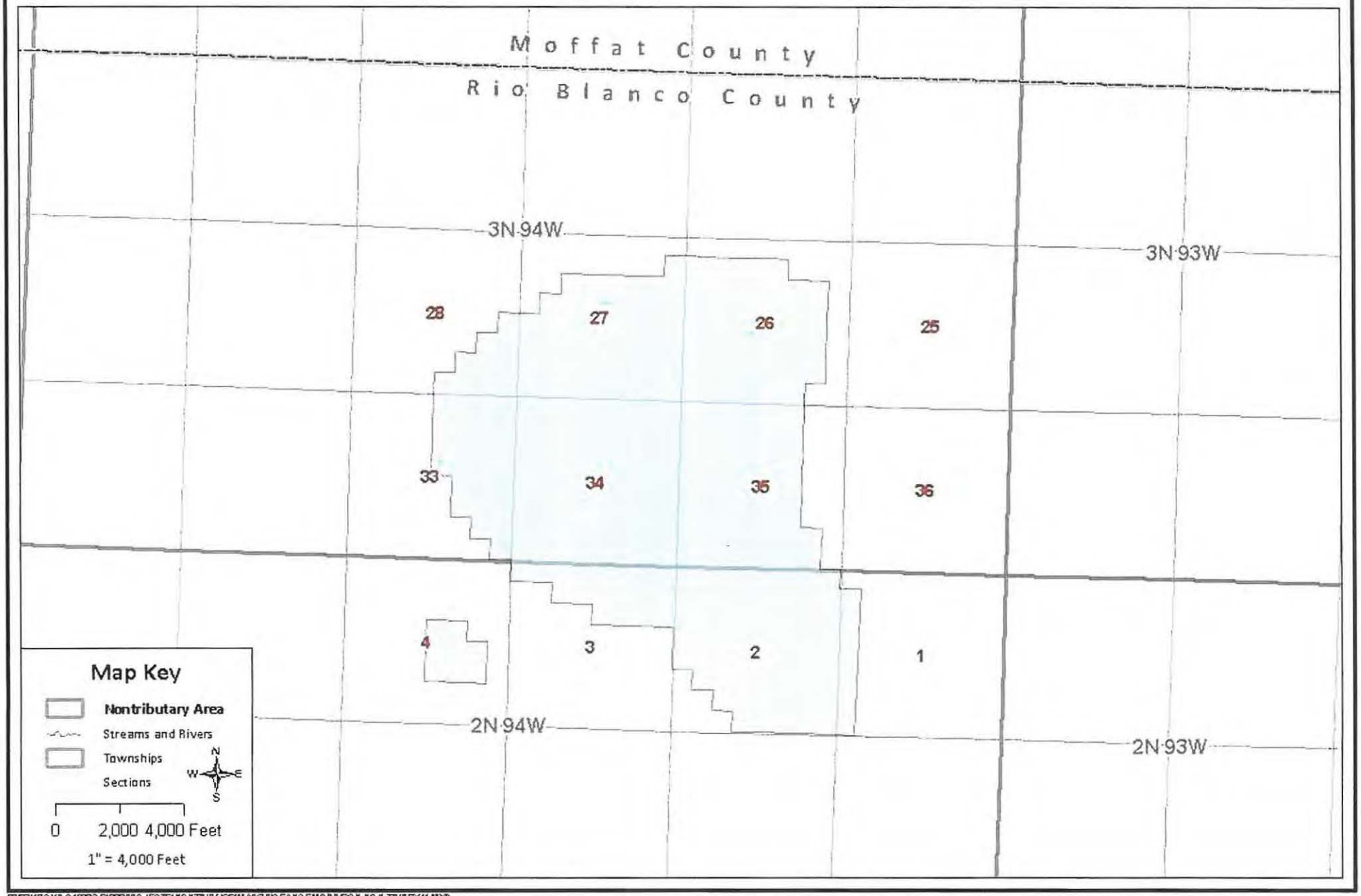
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Weber Sandstone

Map A-6a



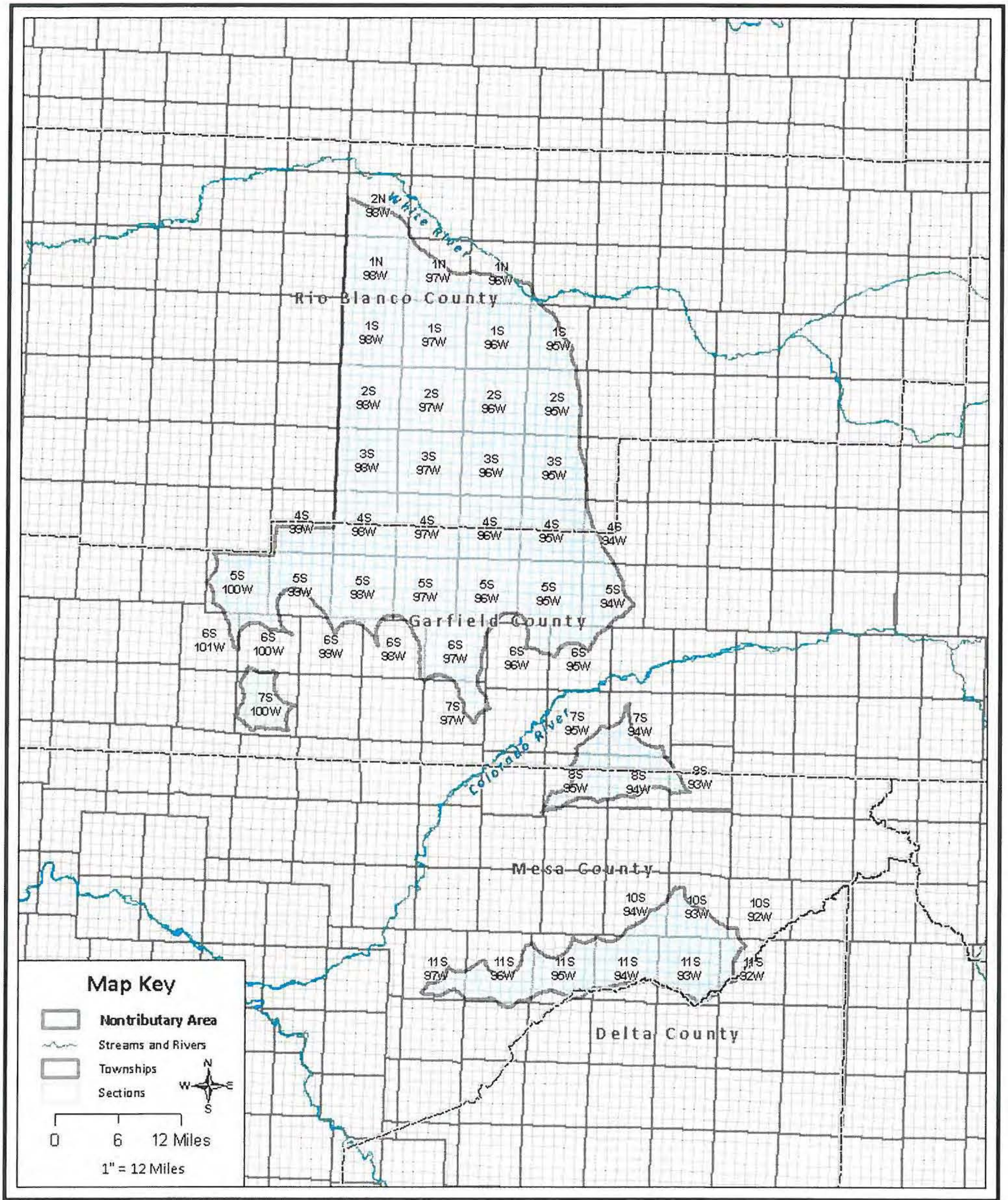
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Morrison Formation and the Sundance/Entrada Sandstone

Map A-6b



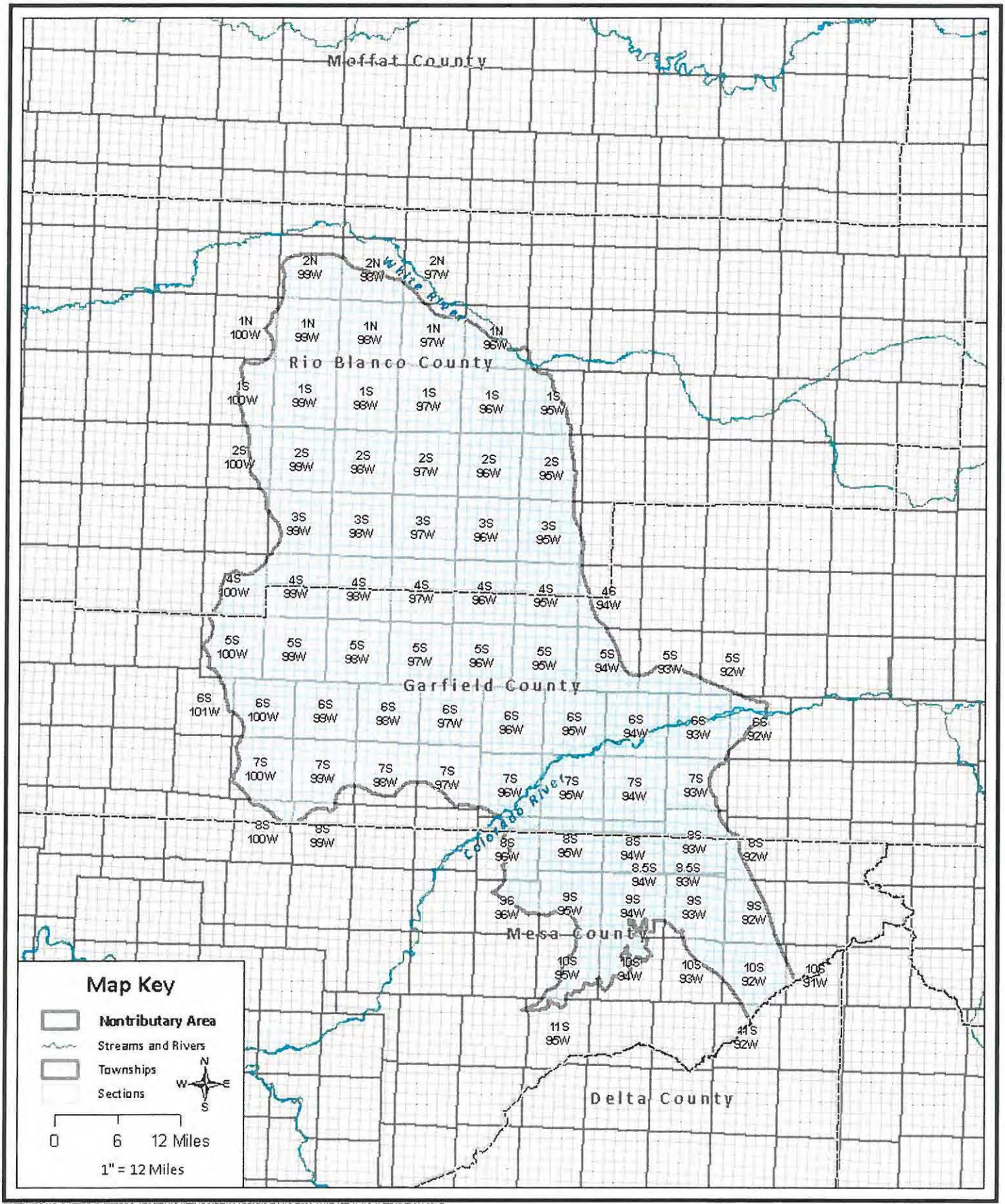
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Undifferentiated Wasatch Formation

Map A-7a



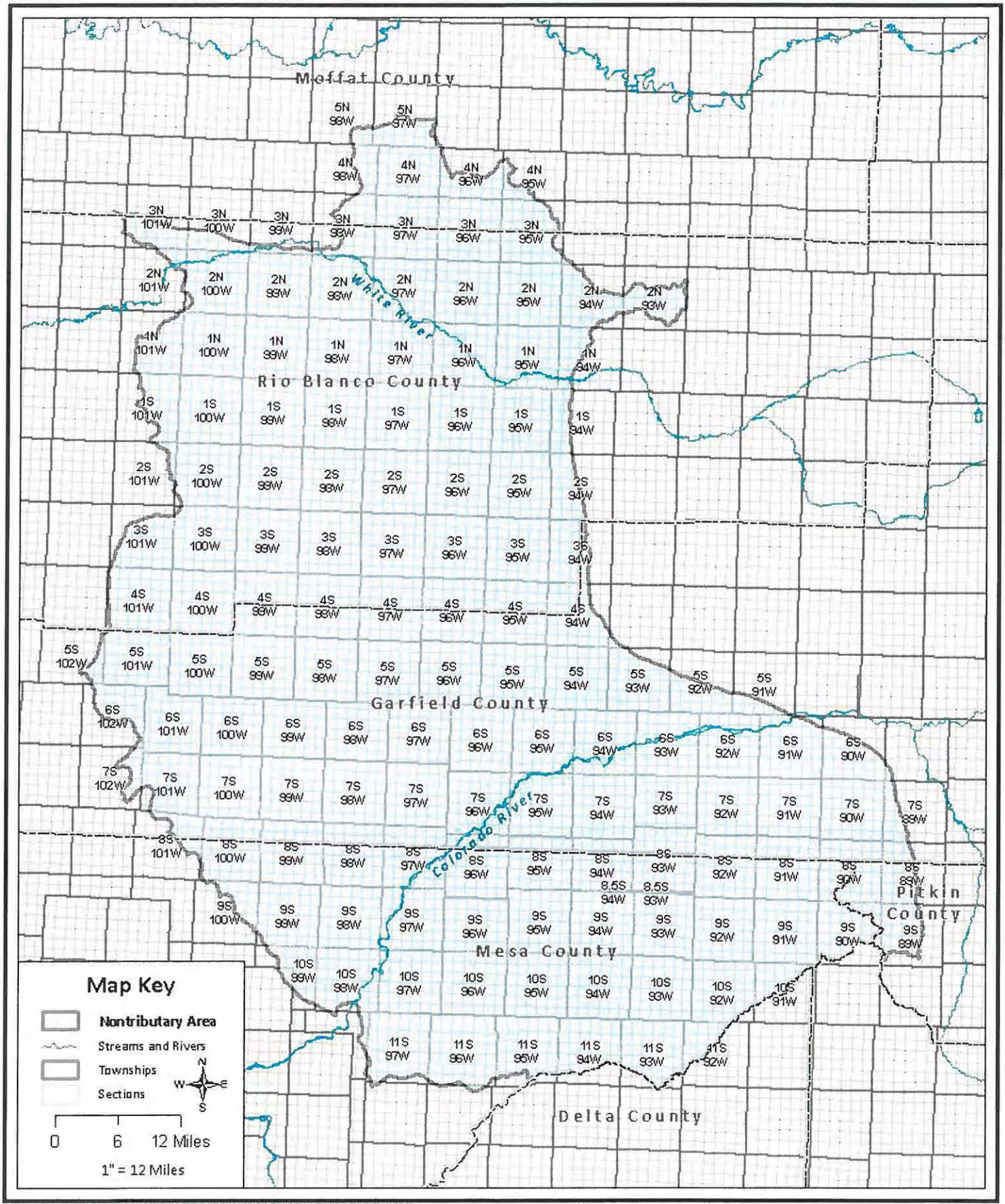
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Middle and Lower Wasatch Formation

Map A-7b



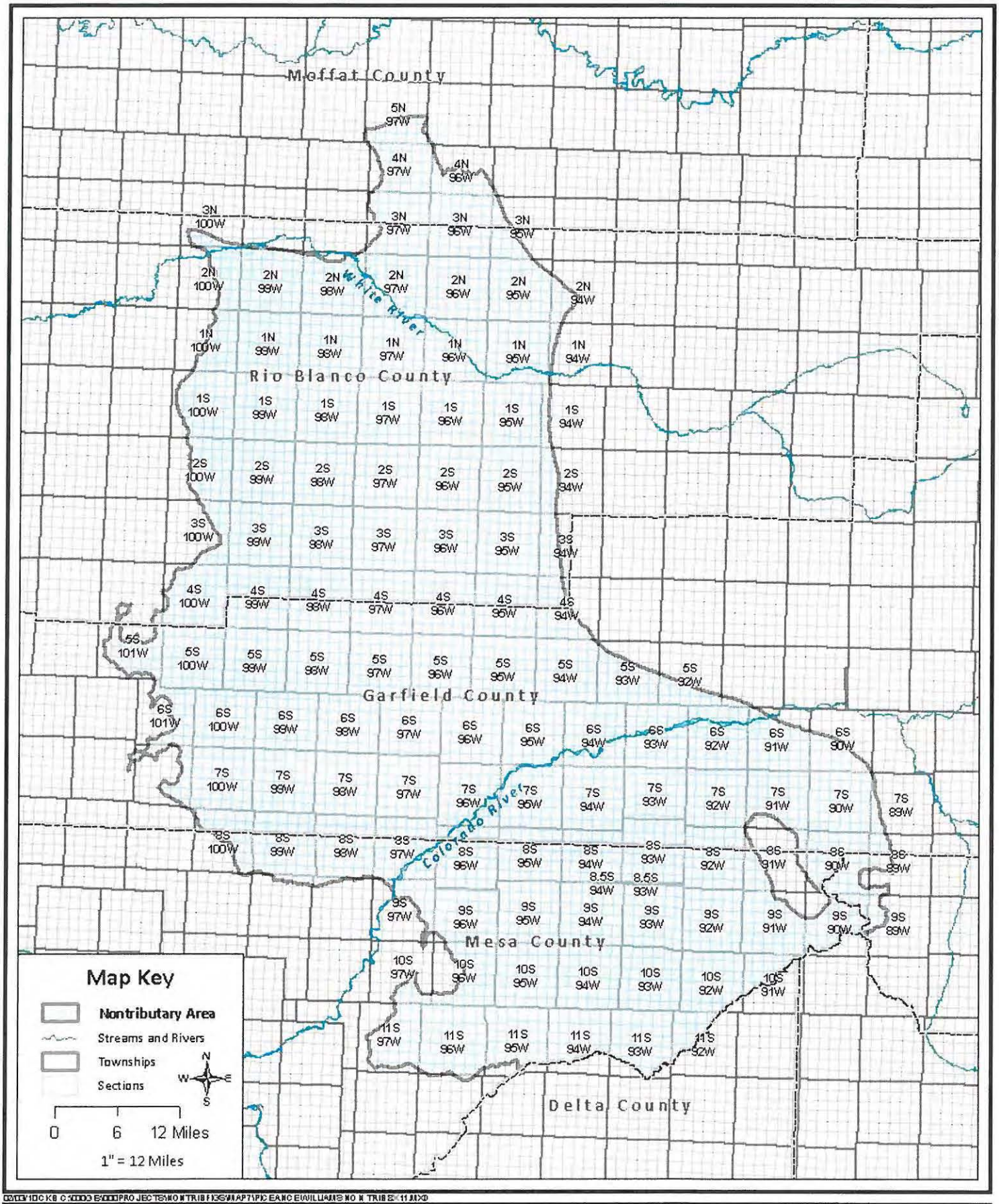
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Iles Formation

Map A-7c



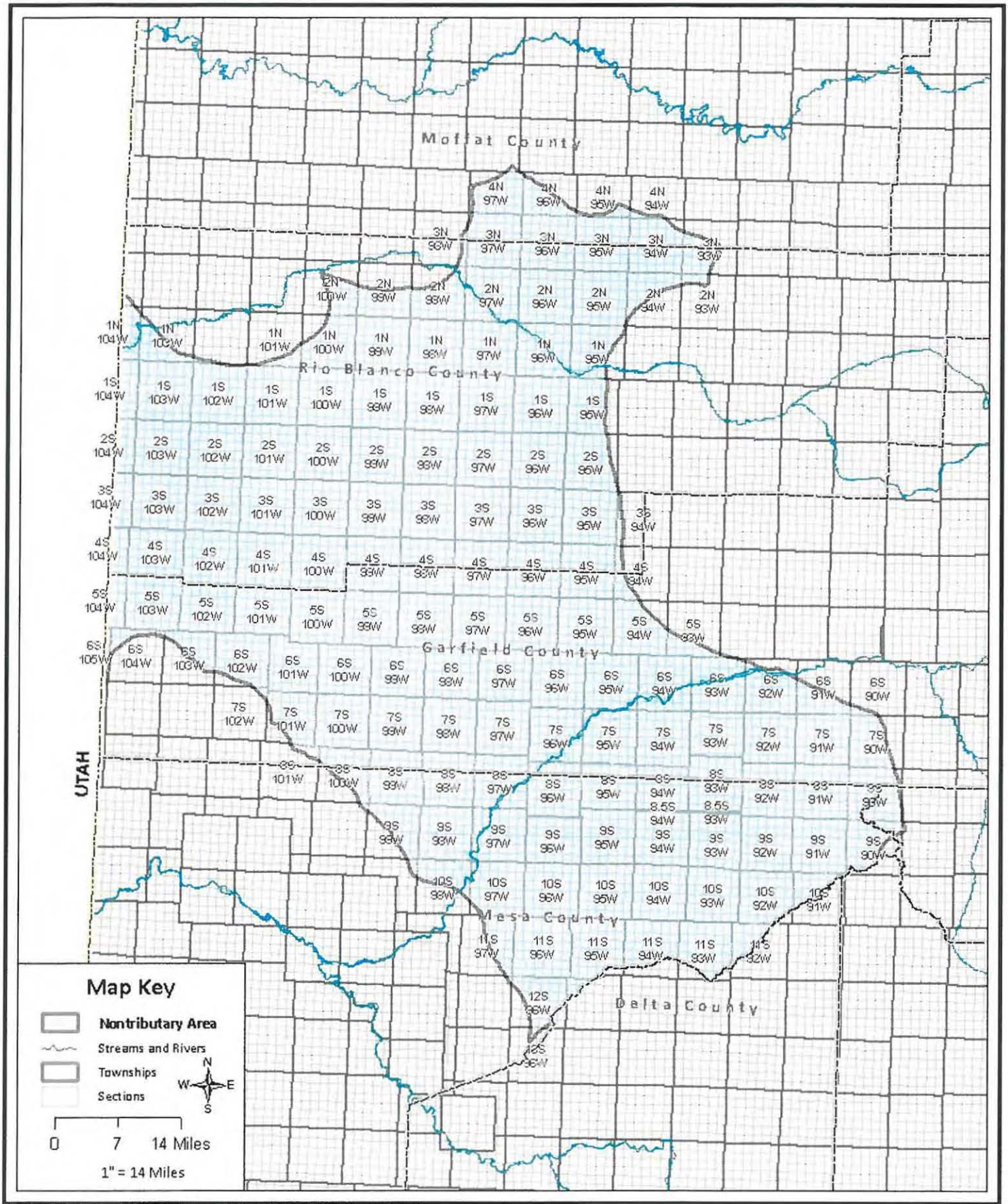
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Williams Fork Formation

Map A-7d



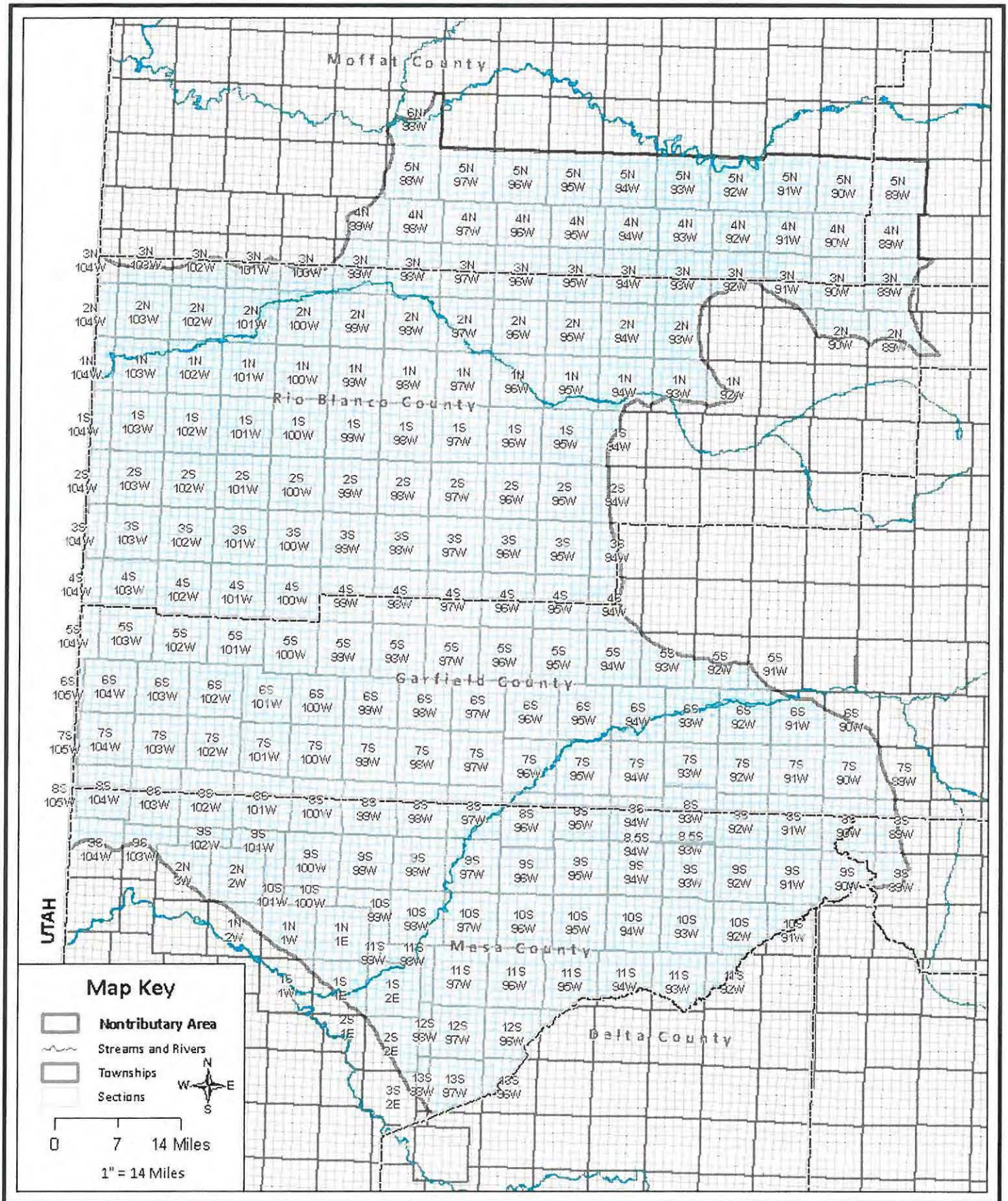
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Mancos Formation

Map A-8a



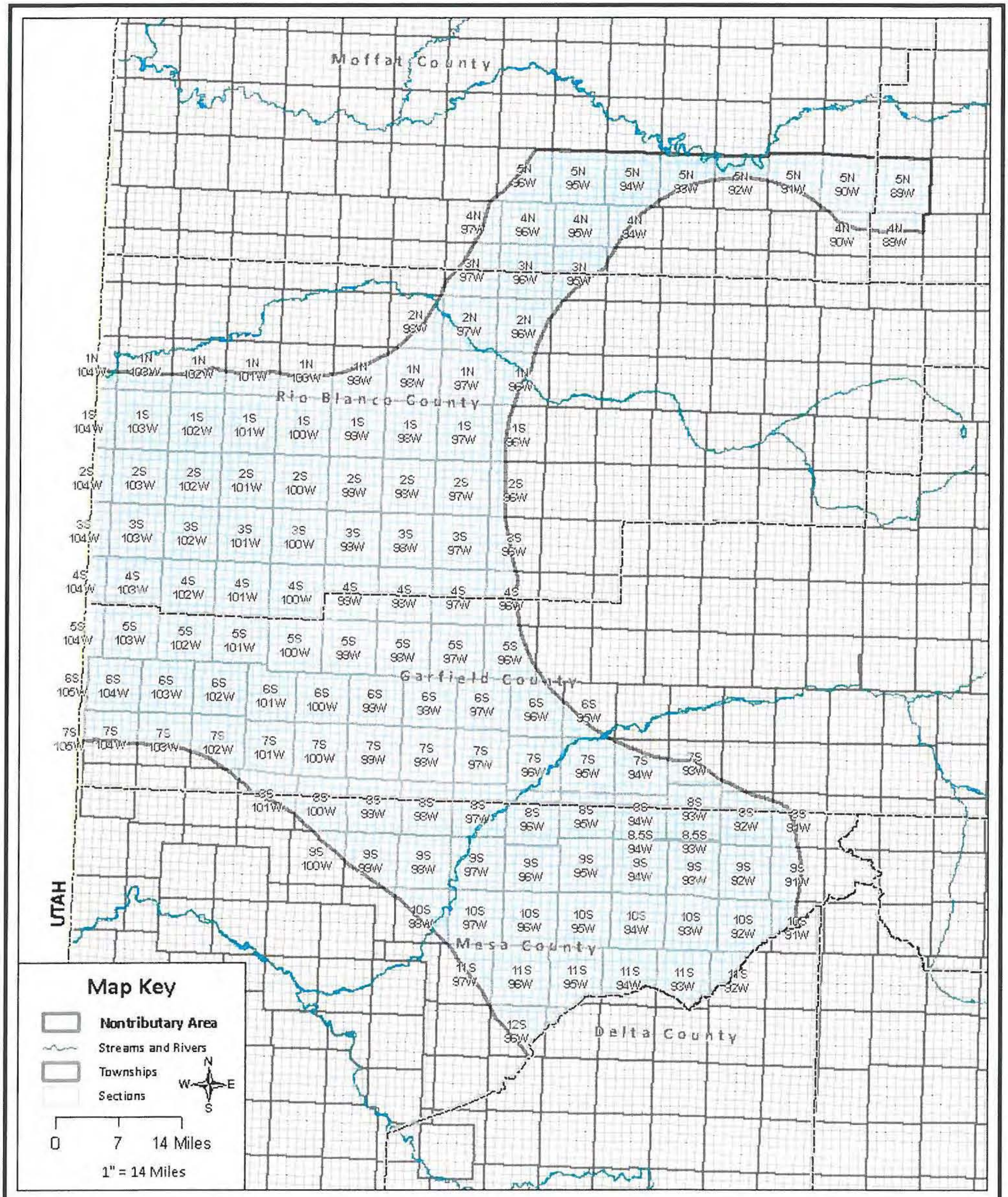
State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Dakota Formation

Map A-8b



State of Colorado – Division of Water Resources

Produced Nontributary Ground Water Rules; 2 CCR 402-17

Nontributary Ground Water in the Piceance Basin

Morrison Formation

Map A-8c

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Attachment B

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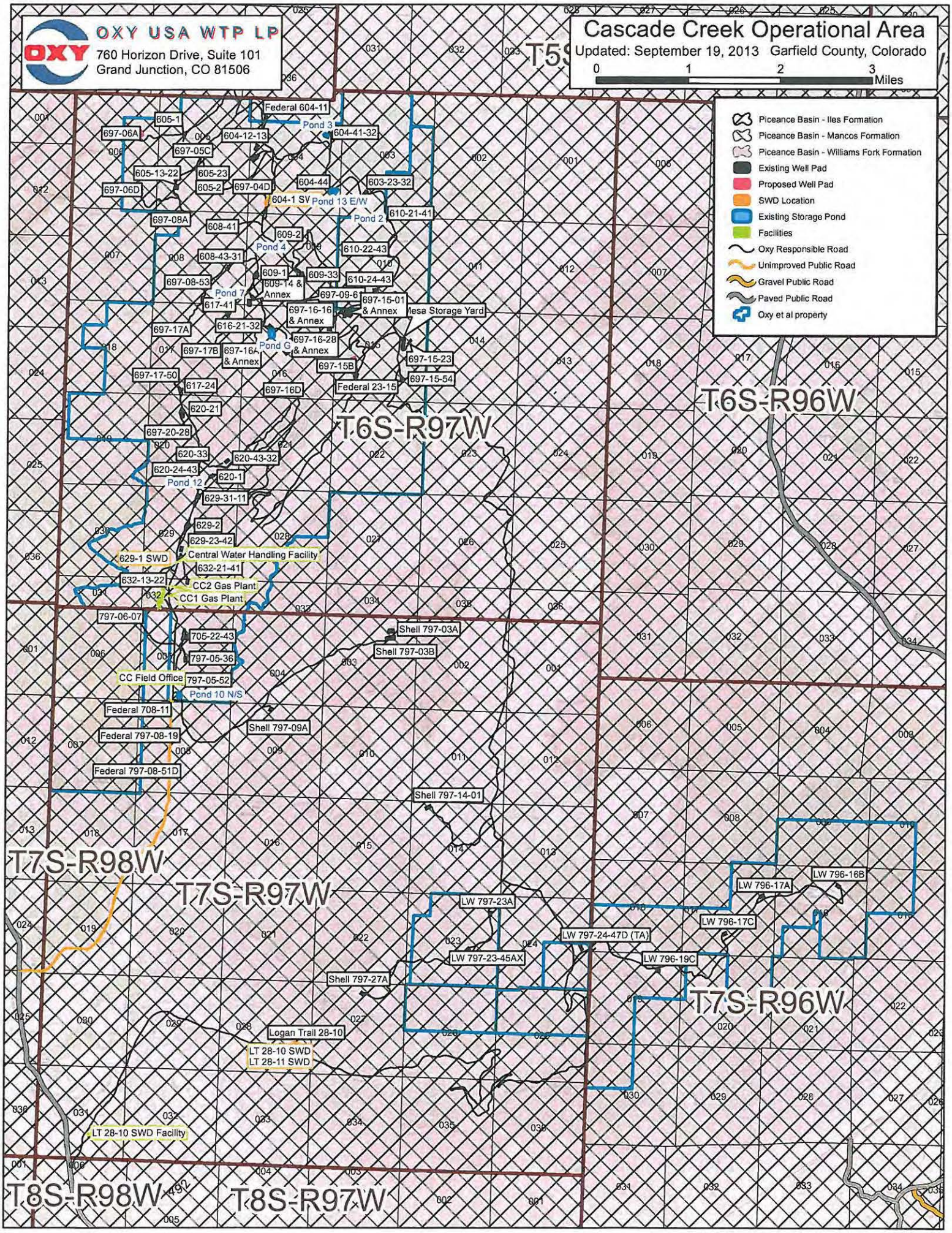
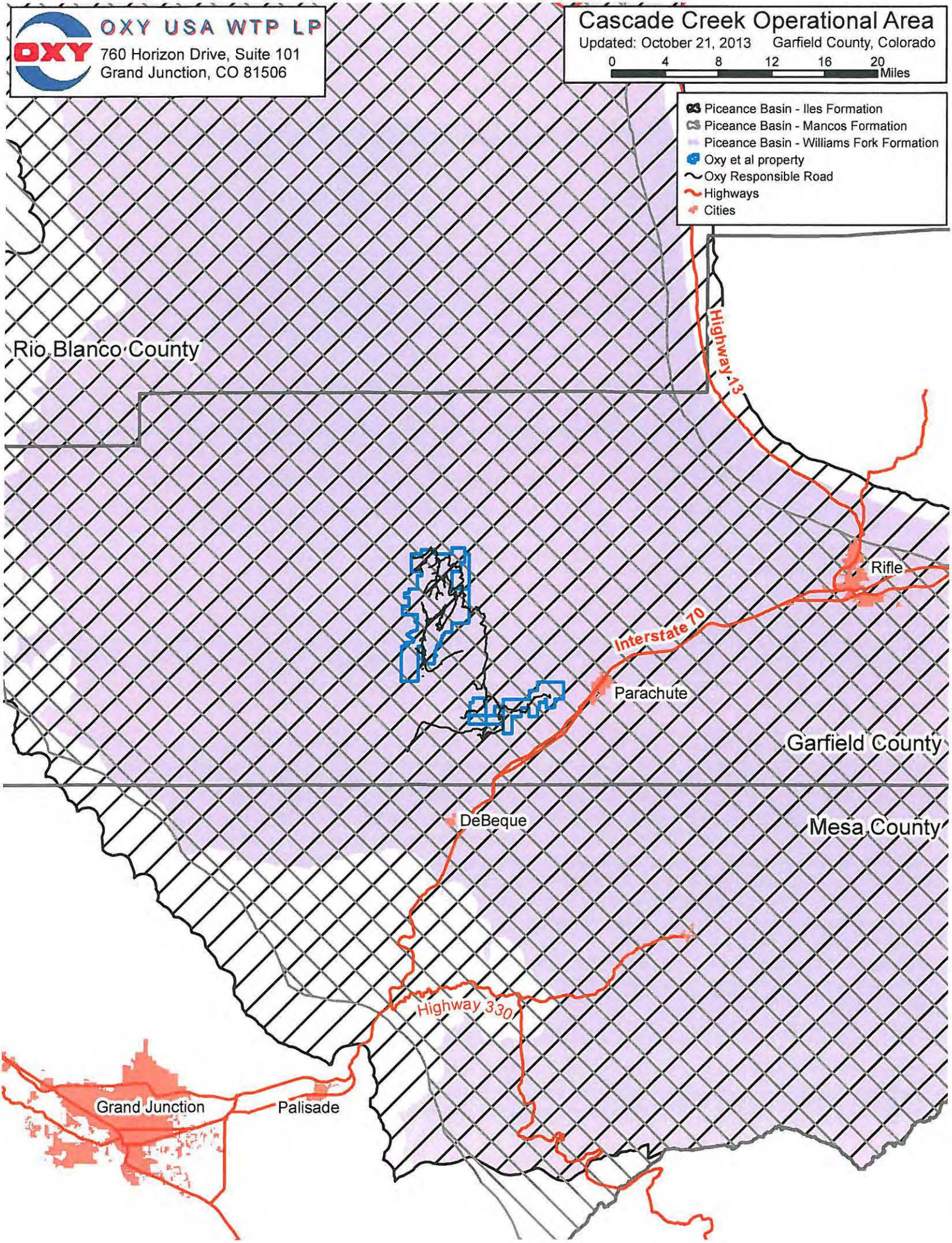

OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Cascade Creek Operational Area
Updated: September 19, 2013 Garfield County, Colorado
0 1 2 3 Miles
Piceance Basin - Iles Formation
Piceance Basin - Mancos Formation
Piceance Basin - Williams Fork Formation
Existing Well Pad
Proposed Well Pad
SWD Location
Existing Storage Pond
Facilities
Oxy Responsible Road
Unimproved Public Road
Gravel Public Road
Paved Public Road
Oxy et al property
T5S
T6S-R97W
T6S-R96W
T7S-R98W
T7S-R97W
T7S-R96W
T8S-R98W
T8S-R97W
Federal 604-11
Pond 3
605-1
697-06A
604-12-13
604-41-32
697-05C
605-13-22
605-23
605-2
697-04D
604-44
603-23-32
697-06D
604-1 SV
Pond 13 E/W
Pond 2
610-21-41
697-08A
608-41
609-2
Pond 4
610-22-43
608-43-31
609-1
609-33
610-24-43
697-08-53
609-14 & Annex
Pond 7
617-41
697-09-6
697-15-01 & Annex
Mesa Storage Yard
697-16-16 & Annex
697-17A
616-21-32
Pond G
697-16-28 & Annex
697-17B
697-16A & Annex
697-15B
697-15-23
697-17-50
617-24
697-16D
Federal 23-15
697-15-54
620-21
697-20-28
620-33
620-43-32
620-24-43
620-1
Pond 12
629-31-11
629-2
629-23-42
629-1 SWD
Central Water Handling Facility
632-21-41
632-13-22
CC2 Gas Plant
CC1 Gas Plant
797-06-07
705-22-43
Shell 797-03A
Shell 797-03B
797-05-36
CC Field Office
797-05-52
Pond 10 N/S
Federal 708-11
Shell 797-09A
Federal 797-08-19
Federal 797-08-51D
Shell 797-14-01
LW 797-23A
LW 797-24-47D (TA)
LW 797-23-45AX
Shell 797-27A
LW 796-17A
LW 796-16B
LW 796-17C
LW 796-19C
Logan Trail 28-10
LT 28-10 SWD
LT 28-11 SWD
LT 28-10 SWD Facility


OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Cascade Creek Operational Area
Updated: October 21, 2013
Garfield County, Colorado
0 4 8 12 16 20
Miles
Piceance Basin - Iles Formation
Piceance Basin - Mancos Formation
Piceance Basin - Williams Fork Formation
Oxy et al property
Oxy Responsible Road
Highways
Cities
Rio Blanco County
Highway 13
Rifle
Interstate 70
Parachute
Garfield County
DeBeque
Mesa County
Highway 330
Grand Junction
Palisade

Attachment C

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Cascade Creek OXY USA WTP LP, COGCC Operator #66571					
Field	Pad	Well Name	API #	Location	Producing Formation
Mesa	Oxy Fed 23-15 COGCC Loc #324268	Oxy Federal 23-15	05045098440000	NWSW, Sec 15, T6S R97W	WMFK
	603-23-32 COGCC Loc #335647	603-23-32	05045108560000	NESW, Sec 3, T6S, R97W	MVRD/RLNS
		697-03-51D	05045124120000	NESW, Sec 3, T6S, R97W	WMFK
		697-03-67D	05045124000000	NESW, Sec 3, T6S, R97W	WMFK
		697-03-73D	05045124090000	NESW, Sec 3, T6S, R97W	WMFK
		697-03-75D	05045124100000	NESW, Sec 3, T6S, R97W	WMFK
		697-10-02D	05045124110000	NESW, Sec 3, T6S, R97W	WMFK
	Oxy Fed 604-11 COGCC Loc #324279	604-11	05045101940000	NWNW, Sec 4, T6S, R97W	MVRD
	604-12-13 COGCC Loc #324400	604-12-13	05045134650000	Lot 16, Sec 4, T6S, R97W	MVRD/RLNS/WSTCG
	604-12-13 Annex COGCC Loc #424970 Pad is built	697-04-26A	05045210270000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-26B	05045210060000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-34A	05045209990000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-34B	05045210160000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-41	05045210100000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-42	05045210120000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-43	05045210190000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-49A	05045210280000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-49B	05045210040000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-51A	05045210150000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-04-51B	05045210110000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-05-24A	05045210000000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-05-24B	05045210140000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-05-32A	05045210230000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
		697-05-32B	05045210090000	Lot 16, Sec 4, T6S, R97W	ILES/WMFK
	604-44	604-44	05045101850000	NESE, Sec 4, T6S, R97W	MVRD/WMFK
	605-01 COGCC Loc #323903	605-1	05045068970000	SENW, Sec 5, T6S, R97W	WFCM/WMFK/CAMEO
	605-02 COGCC Loc #323998	605-2	05045072100000	NWSE, Sec 5, T6S, R97W	WMFK
	605-13-22 COGCC Loc #324292	605-13-22	05045105470000	NWSW, Sec 5, T6S, R97W	MVRD/RLNS/WSTCG

	605-23 COGCC Loc #335802	697-05-50DB	05045124570000	NESW, Sec 5, T6S, R97W	WMFK
		605-23	05045075220000	NESW, Sec 5, T6S, R97W	MVRD/WSTCG
	697-05C COGCC Loc #421340	697-05-20A	05045203690000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-20B	05045203750000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-22A	05045203610000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-22B	05045203700000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-28A	05045203740000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-28B	05045203600000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-30A	05045203670000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-30B	05045203680000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-36A	05045203630000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-36B	05045203640000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-38A	05045203720000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-38B	05045203650000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-42	05045203730000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-43	05045203710000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-44	05045203660000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-45	05045203620000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-47A	05045203770000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-47B	05045203800000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-53A	05045203790000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-53B	05045203810000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-55A	05045203760000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
		697-05-55B	05045203820000	Lot 14, Sec 5, T6S, R97W	WMFK/CMEO
	608-41 COGCC Loc #324100	697-05-72	05045187320000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-05-78A	05045187310000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-05-78B	05045181260000	NENE, Sec 8, T6S, R97W	WMFK
		697-05-80A	05045181460000	NENE, Sec 8, T6S, R97W	WMFK
		697-05-80B	05045187330000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-08-06A	05045181270000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-08-06B	05045181480000	NENE, Sec 8, T6S, R97W	ILES/WMFK
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		697-08-08B	05045181280000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-08-14	05045181300000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-08-16	05045181290000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-08-23A	05045181470000	NENE, Sec 8, T6S, R97W	WMFK
		697-09-09	05045181490000	NENE, Sec 8, T6S, R97W	WMFK
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		697-05-69	05045200120000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-05-70	05045200110000	NENE, Sec 8, T6S, R97W	WMFK
		697-05-71	05045200130000	NENE, Sec 8, T6S, R97W	WMFK
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		697-09-02B	05045200170000	NENE, Sec 8, T6S, R97W	WMFK
		697-09-10A	05045200240000	NENE, Sec 8, T6S, R97W	ILES/WMFK
		697-09-10B	05045200230000	NENE, Sec 8, T6S, R97W	WMFK
		697-09-19A	05045200200000	NENE, Sec 8, T6S, R97W	ILES/WMFK

Me					
	608-43-31 COGCC Loc #383337	697-08-20	05045199420000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-21	05045199370000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-23B	05045183530000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-29A	05045199360000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-29B	05045199430000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-29C	05045199440000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-31A	05045183520000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-31B	05045183510000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-37A	05045199400000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-37B	05045199380000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-39	05045183500000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-45	05045199390000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-46B	05045199410000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-47A	05045183490000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-08-47B	05045183480000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-09-25A	05045183450000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		697-09-25B	05045183540000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
		608-43-31	05045106530000	NESE, Sec 8, T6S, R97W	WMFK/CMEO
	609-1 COGCC Loc #323892	609-1	05045068700000	NWSW, Sec 9, T6S, R97W	OHCRK/WSTC
	609-02 COGCC Loc #324041	609-2	05045073200000	SENW, Sec 9, T6S, R97W	RMVWS
	609-14 COGCC Loc #336005	609-14	05045102010000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-56A	05045183650000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-56B	05045175740000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-64A	05045183660000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-64B	05045175730000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-50A	05045175710000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-50B	05045181750000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-58	05045176940000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-16-01	05045176960000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-16-02B	05045175720000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
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		697-17-08A	05045176950000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-33A	05045192780000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-33B	05045192830000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-17-14	05045192790000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-17-15	05045192770000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-17-08B	05045181760000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-54A	05045192850000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-54B	05045192870000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-62A	05045192860000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-08-62B	05045192820000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO

Mesa					
		697-17-06A	05045192810000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
		697-17-23A	05045192840000	SWSW, Sec 9, T6S, R97W	WMFK/CMEO
	609-33 COGCC Loc #335801	697-09-29A	05045181380000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-29B	05045183670000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-31B	05045181370000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-35B	05045181400000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-37A	05045181330000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-39	05045181390000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-40	05045181360000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-48A	05045181340000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-48B	05045181320000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-56A	05045181350000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-13	05045200680000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-15B	05045200880000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-19B	05045200840000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-21A	05045200700000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-21B	05045200730000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-23A	05045200820000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-23B	05045200760000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-27	05045200720000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-31A	05045200740000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-35A	05045200890000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		609-33	05045075200000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-37B-2	05045203970000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
		697-09-46-2	05045203960000	NWSE, Sec 9, T6S, R97W	WMFK/CMEO
	610-22-43 COGCC Loc #324315	610-22-43	05045108550000	SENW, Sec 10, T6S, R97W	MVRD/RLNS/WSTCG
	610-24-43 COGCC Loc #324314	610-24-43	05045108540000	SESW, Sec 10, T6S, R97W	MVRD/RLNS/WSTCG
	616-21-32 COGCC Loc #324288	616-21-32	05045104440000	SENW, Sec 16, T6S, R97W	MVRD/RLNS/WSTCG
	617-41 COGCC Loc #324160	617-41	05045078100000	NENE, Sec 17, T6S, R97W	MVRD/WSTCG
	632-21-41 COGCC Loc #324287	632-21-41	05045103360000	Lot 3, Sec 32, T6S, R97W	MVRD/RLNS/WSTCG
		697-05-18A	05045213590000	Lot 15, T6S, R97W	WMFK/ILES
		697-05-18B	05045213750000	Lot 15, T6S, R97W	WMFK/ILES
		697-05-26	05045213580000	Lot 15, T6S, R97W	WMFK/ILES

Mesa	697-06A COGCC Loc #427796	697-05-34A	05045213720000	Lot 15, T6S, R97W	WMFK/ILES
		697-05-34B	05045213710000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-07	05045213680000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-08	05045213600000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-16A	05045213650000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-16B	05045213610000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-24A	05045213690000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-05B	05045213560000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-14A	05045213730000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-14B	05045213660000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-22A	05045213670000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-05A	05045213570000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-03A	05045213620000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-03B	05045213700000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-22B	05045213740000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-30A	05045213630000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-30B	05045213640000	Lot 15, T6S, R97W	WMFK/ILES
		697-06-24B	05045213550000	Lot 15, T6S, R97W	WMFK/ILES
	697-06D COGCC Loc #423947	697-05-49A	05045208190000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-05-49B	05045208180000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-05-57A	05045208200000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-30C	05045208210000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-32A	05045208130000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-32B	05045208220000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-36	05045216390000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-37	05045216380000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-39A	05045208110000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-39B	05045208250000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-45A	05045216400000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-45B	05045216410000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-47A	05045208260000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-47B	05045208090000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-53A	05045208240000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-53B	05045208140000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-55A	05045208230000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-55B	05045208170000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-61A	05045208150000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-61B	05045208160000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-63	05045208120000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-06-64	05045208100000	SESE, Sec 6, T6S, R97W	WMFK/ILES
		697-05-51	05045209540000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-57B	05045209560000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-59	05045209570000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-61	05045209660000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-65	05045209620000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-67A	05045209670000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-67B	05045209600000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-73	05045209550000	NENW, Sec 8, T6S, R97W	WMFK/ILES

	697-08A COGCC Loc #424797	697-05-74A	05045209580000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-74B	05045209640000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-76A	05045209650000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-05-76B	05045209590000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-02A	05045209530000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-02B	05045209610000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-04A	05045209630000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-04B	05045209680000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-10A	05045209700000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-10B	05045209720000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-12A	05045209730000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-12B	05045209690000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-18	05045209710000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-19	05045209750000	NENW, Sec 8, T6S, R97W	WMFK/ILES
		697-08-33A	05045209740000	NENW, Sec 8, T6S, R97W	WMFK/ILES
	697-08-53 COGCC Loc #335815	697-08-38DB	05045122800000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-45D	05045122780000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-46DA	05045122770000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-46DB	05045122760000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-53	05045106750000	NWSE, Sec 8, T6S, R97W	MVRD/RLNS/WSTCG
		697-08-54DA	05045122790000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-27A	05045200670000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-27B	05045200910000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-33B	05045200570000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-35A	05045200930000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-35B	05045200690000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-41A	05045200650000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-41B	05045200870000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-43A	05045200810000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-43B	05045200600000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-49	05045200560000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-50	05045200710000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-52A	05045200790000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-52B	05045200620000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-58A	05045200630000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-58B	05045200780000	NWSE, Sec 8, T6S, R97W	WMFK
		697-08-58C	05045201040000	NWSE, Sec 8, T6S, R97W	WMFK
	697-09-61 (Core Pad)	697-09-35C	05045162260000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-37B	05045162250000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-44A	05045160070000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-44B	05045151360000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-46	05045160080000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-52A	05045151350000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-52B	05045144450000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-54A	05045160100000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-54B	05045160090000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-58	05045162270000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-60B	05045160060000	SWSE, Sec 9, T6S, R97W	WMFK

	COGCC Loc #335889	697-09-60D	05045142980000	SWSE, Sec 9, T6S, R97W	WMFK
		697-09-62A	05045160200000	SWSE, Sec 9, T6S, R97W	COZZ/CRCRN/WMFK
		697-09-62B	05045160010000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-02A	05045162280000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-04	05045160180000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-05	05045160170000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-11A	05045162300000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-11B	05045176970000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-13A	05045160160000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-13B	05045160190000	SWSE, Sec 9, T6S, R97W	WMFK
		697-16-21A	05045162290000	SWSE, Sec 9, T6S, R97W	WMFK
	697-15B COGCC Loc #427656	697-15-28B	05045213170000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-34	05045213260000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-34A	05045213200000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-36A	05045213270000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-36B	05045213140000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-42A	05045213210000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-42B	05045213220000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-44A	05045213130000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-44B	05045213230000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-49	05045213180000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-50	05045213150000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-51	05045213190000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-52	05045213120000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-57	05045213240000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-59	05045213250000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
		Oxy Fed 697-15-60	05045213160000	NWSW, Sec 15, T6S, R97W	ILES/WMFK
	697-15-01 COGCC Loc #335921	697-09-56B	05045176920000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-09-64A	05045180090000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-10-50A	05045180220000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-10-50B	05045180110000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-10-58	05045180100000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-10-59	05045180230000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-03A	05045180280000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-03B	05045180240000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-09B	05045180550000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-11A	05045180250000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-11B	05045180260000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-19A	05045180270000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-19B	05045194990000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-17A	05045195010000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-26	05045195030000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-10-42B	05045195020000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-10-42C	05045195000000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-28A	05045195040000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-01	05045106860000	NWNW, Sec 15, T6S, R97W	WMFK/CMEO
		697-15-21D	05045122340000	SENE, Sec 15, T6S, R97W	WMFK

Mesa	697-15-23 COGCC Loc #335595	697-15-22D	05045122210000	SENE, Sec 15, T6S, R97W	WMFK
		697-15-23	05045106880000	SENE, Sec 15, T6S, R97W	WMFK
		697-15-29D	05045122230000	SENE, Sec 15, T6S, R97W	WMFK
		697-15-30D	05045122240000	SENE, Sec 15, T6S, R97W	WMFK
		697-15-31D	05045122220000	SENE, Sec 15, T6S, R97W	WMFK
	697-15-54	697-15-54	05045106870000	SWSE, Sec 15, T6S, R97W	MVRD/RLNS/WSTC
	697-16-16 COGCC Loc #335844	697-09-64	05045139830000	NENE, Sec 16, T6S, R97W	WMFK
		697-15-01A	05045139970000	NENE, Sec 16, T6S, R97W	WMFK
		697-15-09A	05045139850000	NENE, Sec 16, T6S, R97W	WMFK
		697-15-17B	05045139880000	NENE, Sec 16, T6S, R97W	WMFK
		697-15-25	05045139870000	NENE, Sec 16, T6S, R97W	WMFK
		697-16-06	05045139860000	NENE, Sec 16, T6S, R97W	WMFK
		697-16-07	05045139910000	NENE, Sec 16, T6S, R97W	WMFK
		697-16-15A	05045139900000	NENE, Sec 16, T6S, R97W	WMFK
		697-16-31	05045139920000	NENE, Sec 16, T6S, R97W	WMFK
		697-16-32	05045131800000	NENE, Sec 16, T6S, R97W	WMFK
		697-16-18D	05045122270000	SENW, Sec 16, T6S, R97W	WMFK
		697-16-37D	05045122250000	SENW, Sec 16, T6S, R97W	WMFK
		697-16-13A2	05045205840000	SENW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-11B2	05045205670000	SENW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-21B	05045205680000	SENW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-29A	05045205800000	SENW, Sec 16, T6S, R97W	ILES/MNCS/WMFK
		697-16-29B	05045205740000	SENW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-15B	05045205790000	SENW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-15C	05045205730000	SENW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-23A	05045205660000	SENW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-23B	05045205780000	SENW, Sec 16, T6S, R97W	ILES/WMFK
	697-16A COGCC Loc #335845	697-16-25A	05045122190000	NWSW, Sec 16, T6S, R97W	WMFK
		697-16-34	05045122320000	NWSW, Sec 16, T6S, R97W	WMFK
		697-16-35	05045122290000	NWSW, Sec 16, T6S, R97W	WMFK
	697-16A2 COGCC Loc #335950	697-16-17A	05045180590000	NWSW, Sec 16, T6S, R97W	WMFK
		697-16-17B	05045180620000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-19	05045180580000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-25B	05045176040000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-27A	05045176050000	NWSW, Sec 16, T6S, R97W	WMFK
		697-16-27B	05045180570000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-33	05045176060000	NWSW, Sec 16, T6S, R97W	WMFK
		697-16-42A	05045176070000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-16-42B	05045176030000	NWSW, Sec 16, T6S, R97W	WMFK
		697-16-50A	05045180630000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-17-56B	05045180600000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-17-64A	05045180610000	NWSW, Sec 16, T6S, R97W	WMFK
		697-17-64B	05045170510000	NWSW, Sec 16, T6S, R97W	ILES/WMFK
		697-08-60A	05045212960000	SENW, Sec 17, T6S, R97W	ILES/WMFK

	697-17A COGCC Loc #427505	697-08-60B	05045213010000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-02A	05045212980000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-02B	05045213080000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-04A	05045213050000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-04B	05045213060000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-10	05045212950000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-11	05045213030000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-12	05045212970000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-13	05045212990000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-17-19A	05045212940000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-18-08A	05045212930000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-18-08B	05045213000000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-18-16A	05045213070000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-18-16B	05045213040000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-18-24A	05045213020000	SENW, Sec 17, T6S, R97W	ILES/WMFK
		697-18-24B	05045212920000	SENW, Sec 17, T6S, R97W	ILES/WMFK
	697-17B COGCC Loc #383339 Pad is built	697-17-21A	05045183750000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-21B	05045183760000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-23B	05045183710000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-29A	05045183720000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-29B	05045183680000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-29C	05045183810000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-31A	05045183770000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-31B	05045183690000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-37A	05045183780000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-37B	05045183700000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-39A	05045183800000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-39B	05045183820000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-46A	05045203320000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-46B	05045203270000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-54	05045203330000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-48A	05045203310000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-48B	05045203300000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-56A	05045203290000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-17-62A	05045203280000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		617-33	05045078090000	SWNE, Sec 17, T6S, R97W	ILES/WMFK
		697-04-57B	05045207210000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-59B	05045207240000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-59C	05045207110000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-65A	05045207220000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-65B	05045207260000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-67	05045207200000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-68	05045207130000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-74A	05045207180000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-76A	05045207230000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO

	697-04D COGCC Loc #423240	697-04-76B	05045207290000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-82	05045207280000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-84A	05045207150000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-84B	05045207140000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-09-02A	05045207120000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-57A	05045207160000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-04-59A	05045207090000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-09-12	05045207190000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-05-63A	05045207250000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-05-63B	05045207170000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-09-04A	05045207270000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
		697-09-04B	05045207100000	NWSW, Sec 4, T6S, R97W	WMFK/CMEO
Valley	617-24 COGCC Loc #335404	697-17-43D	05045106520000	SESW, Sec 17, T6S, R97W	MVRD/RLNS/WSTCG
		697-17-49D	05045106730000	SESW, Sec 17, T6S, R97W	MVRD/RLNS/WSTCG
		697-17-53D	05045106740000	SESW, Sec 17, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-02D	05045106630000	SESW, Sec 17, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-05D	05045106770000	SESW, Sec 17, T6S, R97W	MVRD/RLNS/WSTCG
		617-24	05045074500000	SESW, Sec 17, T6S, R97W	RLNS
	620-1 COGCC Loc #335190	620-1	05045068610000	SWSE, Sec 20, T6S	WFCM
		697-20-37D	05045139530000	SWSE, Sec 20, T6S	WMFK
		697-20-40D	05045138520000	SWSE, Sec 20, T6S	WMFK
		697-20-62D	05045139550000	SWSE, Sec 20, T6S	WMFK
		697-20-64D	05045138490000	SWSE, Sec 20, T6S	WMFK
		697-29-07DA	05045105670000	SWSE, Sec 20, T6S	MVRD/RLNS/WMFK/WSTCG
		697-29-07DB	05045139580000	SWSE, Sec 20, T6S	WMFK
		697-29-15DB	05045139570000	SWSE, Sec 20, T6S	WMFK
	620-21 COGCC Loc #335198	620-21	05045072110000	NENW, Sec 20, T6S, R97W	MVRD/RLNS
		697-17-58D	05045130350000	NENW, Sec 20, T6S, R97W	WMFK
		697-17-61D	05045130360000	NENW, Sec 20, T6S, R97W	WMFK
		697-17-62D	05045130340000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-01D	05045130370000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-04D	05045128330000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-06D	05045130310000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-09D	05045128340000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-11D	05045130400000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-14D	05045130380000.	NENW, Sec 20, T6S, R97W	WMFK
		697-20-17D	05045130290000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-19D	05045130320000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-20D	05045130390000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-22D	05045130330000	NENW, Sec 20, T6S, R97W	WMFK
		697-20-25D	05045130300000	NENW, Sec 20, T6S, R97W	WMFK
	620-24-43 Pad COGCC Loc #335205	697-20-50D	05045120100000	SESW, Sec 20, T6S, R97W	WMFK
		697-20-53D	05045119650000	SESW, Sec 20, T6S, R97W	WMFK
		697-20-61D	05045119660000	SESW, Sec 20, T6S, R97W	WMFK
		620-24-43	05045133770000	SESW, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG

Valley					
	620-33 COGCC Loc #335204	697-20-30D	05045106840000	NWSE, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-35D	05045106850000	NWSE, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-43D	05045116860000	NWSE, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-54D	05045116780000	NWSE, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		620-33	05045075210000	NWSE, Sec 20, T6S, R97W	MVRD/WSTCG
	620-43-32 COGCC Loc #335456	620-43-32	05045134860000	NESE, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-39D	05045118080000	NESE, Sec 20, T6S, R97W	WMFK
		697-20-56DA	05045118070000	NESE, Sec 20, T6S, R97W	WMFK
		697-20-56DB	05045118180000	NESE, Sec 20, T6S, R97W	WMFK
	629-2 COGCC Loc #335149	697-29-10D	05045105660000	SENW, Sec 29, T6S, R97W	MVRD/RLNS/WSTCG
		697-29-26D	05045105650000	SENW, Sec 29, T6S, R97W	MVRD/RLNS/WSTCG
		697-29-30D	05045105640000	SENW, Sec 29, T6S, R97W	MVRD/RLNS/WSTCG
		697-29-38D	05045105630000	SENW, Sec 29, T6S, R97W	MVRD/RLNS/WSTCG
		629-2	05045068690000	SENW, Sec 29, T6S, R97W	MVRD/WMFK
	629-23-42 COGCC Loc #335091	629-23-42	05045134330000	NESW, Sec 29, T6S, R97W	MVRD/RLNS/WSTCG
		697-29-29D	05045118110000	NESW, Sec 29, T6S, R97W	WMFK
		697-29-34D	05045118100000	NESW, Sec 29, T6S, R97W	WMFK
		697-29-36D	05045119260000	NESW, Sec 29, T6S, R97W	WMFK
		697-29-46D	05045118120000	NESW, Sec 29, T6S, R97W	WMFK
		697-29-54D	05045118090000	NESW, Sec 29, T6S, R97W	WMFK
	629-31-11 CGOCC Loc #335090	697-20-59D	05045118140000	NWNE, Sec 29, T6S, R97W	WMFK
		697-29-15DX	05045118160000	NWNE, Sec 29, T6S, R97W	WMFK
		697-29-20D	05045118150000	NWNE, Sec 29, T6S, R97W	WMFK
		697-29-22D	05045121810000	NWNE, Sec 29, T6S, R97W	WMFK
		629-31-11	05045078110000	NWNE, Sec 29, T6S, R97W	MVRD/WSTCG
	632-13-22 COGCC Loc #335113	697-29-59D	05045117670000	Lot 4, Sec 32, T6S, R97W	WMFK
		697-29-60D	05045117680000	Lot 4, Sec 32, T6S, R97W	WMFK
		697-32-01D	05045132910000	Lot 4, Sec 32, T6S, R97W	WMFK
		697-32-03D	05045132920000	Lot 4, Sec 32, T6S, R97W	WMFK
		697-32-09D	05045117690000	Lot 4, Sec 32, T6S, R97W	WMFK
		697-32-10D	05045132900000	Lot 4, Sec 32, T6S, R97W	WMFK
		697-32-12D	05045117660000	Lot 4, Sec 32, T6S, R97W	MVRD/RLNS/WMFK/WSTCG
		697-32-18D	05045117700000	Lot 4, Sec 32, T6S, R97W	WMFK
		632-13-22	05045134970000	Lot 4, Sec 32, T6S, R97W	MVRD/RLNS/WMFK/WSTCG
		697-16-36A	05045152290000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-36B	05045154500000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-38	05045152270000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-40A	05045156420000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-40B	05045156430000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-44A	05045153600000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-44B	05045153590000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-46A	05045152300000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-46B	05045152280000	SWSE, Sec 16, T6S, R97W	WMFK

Valley	697-16D (Cow Patty) COGCC Loc #335203	697-16-48A	05045156440000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-48B	05045157820000	SWSE, Sec 16, T6S, R97W	ILES/WMFK
		697-16-50B	05045152310000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-52A	05045153580000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-52B	05045153570000	SWSE, Sec 16, T6S, R97W	ILES/WMFK
		697-16-54A	05045156410000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-54B	05045154470000	SWSE, Sec 16, T6S, R97W	ILES/WMFK
		697-16-56	05045157830000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-58A	05045152260000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-58B	05045150150000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-60	05045150140000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-62	05045154490000	SWSE, Sec 16, T6S, R97W	WMFK
		697-16-63	05045154480000	SWSE, Sec 16, T6S, R97W	ILES/WMFK
	697-17-50 (Waterfall) COGCC Loc #335903	697-17-19B	05045147090000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-25A	05045152460000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-25B	05045150120000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-27A	05045152440000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-27B	05045152450000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-33A	05045150130000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-33B	05045152600000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-35A	05045152470000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-35B	05045152480000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-41A	05045152620000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-41B	05045152630000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-44	05045152490000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-50	05045152610000	SWSW, Sec 17, T6S, R97W	WMFK
		697-17-52	05045152520000	SWSW, Sec 17, T6S, R97W	WMFK
		697-18-39B	05045153150000	SWSW, Sec 17, T6S, R97W	WMFK
		697-18-47A	05045152530000	SWSW, Sec 17, T6S, R97W	WMFK
		697-18-47B	05045152420000	SWSW, Sec 17, T6S, R97W	WMFK
		697-18-56A	05045152500000	SWSW, Sec 17, T6S, R97W	WMFK
		697-18-56B	05045153990000	SWSW, Sec 17, T6S, R97W	WMFK
		697-18-64A	05045153140000	SWSW, Sec 17, T6S, R97W	WMFK
		697-18-64B	05045152510000	SWSW, Sec 17, T6S, R97W	WMFK
		697-19-08A	05045153130000	SWSW, Sec 17, T6S, R97W	WMFK
	697-20-28 COGCC Loc #335150	697-20-21D	05045118940000	SENW, Sec 20, T6S, R97W	WMFK
		697-20-26D	05045115470000	SENW, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-28	05045104770000	SENW, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-34D	05045115460000	SENW, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
		697-20-36D	05045115490000	SENW, Sec 20, T6S, R97W	MVRD/RLNS/WSTCG
	705-22-43 COGCC Loc #335186	797-05-06DA	05045119270000	SENW, Sec 5, T7S, R97W	WMFK
		797-05-06DB	05045119610000	SENW, Sec 5, T7S, R97W	WMFK
		797-05-12D	05045119280000	SENW, Sec 5, T7S, R97W	WMFK
		797-05-14DA	05045119600000	SENW, Sec 5, T7S, R97W	WMFK
		705-22-43	05045103450000	SENW, Sec 5, T7S, R97W	MVRD/RLNS/WSTCG
lley		797-05-29D	05045137030000	NESW, Sec 5, T7S, R97W	WMFK

797-05-36 COGCC Loc #335187	797-05-31DA	05045137020000	NESW, Sec 5, T7S, R97W	WMFK
	797-05-31DB	05045137010000	NESW, Sec 5, T7S, R97W	WMFK
	797-05-36	05045105090000	NESW, Sec 5, T7S, R97W	MVRD/RLNS/WSTCG
797-05-52 COGCC Loc #334774	797-05-45D	05045119630000	SESW, Sec 5, T7S, R97W	WMFK
	797-05-52	05045105120000	SESW, Sec 5, T7S, R97W	MVRD/RLNS/WSTCG
	797-05-61D	05045120110000	SESW, Sec 5, T7S, R97W	WMFK
	797-05-62D	05045120080000	SESW, Sec 5, T7S, R97W	WMFK
797-06-07	797-06-05A	05045150610000	NENE, Sec 6, T7S, R97W	WMFK
	797-06-07	05045150630000	NENE, Sec 6, T7S, R97W	WMFK
Oxy Fed 708-11 COGCC Loc #324283	708-11	05045102580000	Lot 2, Sec 8, T7S, R97W	MVRD
Oxy Fed 797-08-19 COGCC Loc #324339	797-08-19D	05045111720000	SENW, Sec 8, T7S, R97W	MVRD/RLNS/WSTCG
Oxy Fed 797-08-51D COGCC Loc #324338	797-08-51D	05045111710000	SWSW, Sec 8, T7S, R97W	MVRD/RLNS/WSTCG
Shell 797-03A COGCC Loc #427315	Shell 697-34-05	05045212830000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 697-34-06	05045212810000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-08A	05045212790000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-08B	05045212840000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-13	05045212850000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-16	05045212780000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-21A	05045212800000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-21B	05045161590000	Tract 71, Sec 3, T7, R97W	COZZ/CRCRN/ILES/WMFK
	Shell 797-03-29A	05045178810000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-29B	05045178920000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-40	05045212820000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-05	05045214410000	Tract 71, Sec 3, T7, R97W	WMFK
	Shell 797-03-13A	05045214420000	Tract 71, Sec 3, T7, R97W	WMFK
Shell 797-03B COGCC Loc #335482	Shell 697-34-08A	05045177640000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 697-34-08B	05045177670000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 697-34-14A	05045175850000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 697-34-14B	05045175840000	NWNE, Sec 3, T7S, R97W	CRCRN/WMFK
	Shell 697-34-16A	05045178790000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 697-34-16B	05045178840000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 697-34-22A	05045175860000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 697-34-22B	05045175870000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 697-34-24	05045183860000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 797-03-06A	05045177650000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 797-03-06B	05045177660000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 797-03-15A	05045178780000	NWNE, Sec 3, T7S, R97W	CRCRN/ILES/WMFK

Va		Shell 797-03-15B	05045178820000	NWNE, Sec 3, T7S, R97W	WMFK
		Shell 797-03-23A	05045178900000	NWNE, Sec 3, T7S, R97W	WMFK
		Shell 797-03-23B	05045178910000	NWNE, Sec 3, T7S, R97W	WMFK
		Shell 797-03-31A	05045178830000	NWNE, Sec 3, T7S, R97W	CRCRN/WMFK
		Shell 797-03-31B	05045178890000	NWNE, Sec 3, T7S, R97W	WMFK
		Shell 797-03-37	05045178880000	NWNE, Sec 3, T7S, R97W	WMFK
		Shell 797-03-38	05045178870000	NWNE, Sec 3, T7S, R97W	CRCRN/WMFK
		Shell 797-03-39A	05045178860000	NWNE, Sec 3, T7S, R97W	WMFK
		Shell 797-03-39B	05045178850000	NWNE, Sec 3, T7S, R97W	WMFK
	Shell 797-09A COGCC Loc #335018	Shell 797-09-12	05045137940000	NENW, Sec 9, T7S, R97W	WMFK
		Shell 797-09-37A	05045149260000	NENW, Sec 9, T7S, R97W	WMFK
Logan Wash	**796-16B COGCC Loc #324445**	796-16-14B	05045168380000	NWNE, Sec 16, T7S, R96W	COZZ/CRCRN/WMFK
	796-17C COGCC Loc #324414	796-17-53A	05045142020000	SESW, Sec 17, T7S, R96W	WMFK
	796-19C COGCC Loc #324415	796-19-13B	05045142030000	NWNE, Sec 19, T7S, R96W	COZZ/CRCRN/WMFK
	797-23-16 COGCC Loc #324321	797-23-16	05045109300000	NENE, Sec 23, T7S, R97W	ILES/WMFK/WSTCG
	797-23-45AX COGCC Loc #383305	797-23-45AX	05045137950000	NWSE, Sec 23, T7S, R97W	WMFK
	797-24-47D COGCC Loc #324337	797-24-47D	05045111670000	NESE, Sec 24, T7S, R97W	MVRD/RLNS/WSTCG
	796-17A COGCC Loc #324444	796-17-30A	05045168370000	SENE, Sec 17, T7S, R96W	COZZ/CRCRN/WMFK
	Shell 797-14-01D COGCC Loc #324373	Shell 797-14-01D	05045123990000	NWNW, Sec 14, T7S, R97W	WMFK
	Shell 797-27-13A COGCC Loc #324410	Shell 797-27-13A	05045141000000	NWNE, Sec 27, T7S, R97W	WMFK

Attachment D

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COGCC Formation Codes

Code	Description
AARPH	ALLUVIUM-ARAPAHOE
ABCK	ARBUCKLE
ACGMI	AMAZON-COUNCIL GROVE-MISSOURI
ADMI	Admire
AFXHL	ALLUVIUM-FOXHILLS
AKAH	AKAH SALT
AL-FU	ALMOND-FORT UNION
AL-LW	ALMOND-LEWIS
ALLFM	ALL FORMATIONS
ALLN	ALLEN
ALMD	ALMOND
ALRME	ALLUVIUM-LARAMIE
ALVM	ALLUVIUM
AMZN	AMAZON
ANMS	ANIMAS
APRRE	ALLUVIUM-PIERRE
APSP	APISHAPA
ARPH	ARAPAHOE
ATOK	ATOKA
BCKHN	BUCKHORN
BENT	BENTONITE
BENTN	BENTON
BK-CM	BUCKHORN-CEDAR MOUNTAIN
BK-MR	BUCKHORN-MORRISON
BKCK	BARKER CREEK
BKCKL	BARKER CREEK - LOWER
BKCKU	BARKER CREEK - UPPER
BLANK	HOT LINE FORM NA
BLFEN	BLUFF-ENTRADA
BLFF	BLUFF SANDSTONE
BLIN	BLAINE
BOWIE	BOWIE COAL
BRBSN	BRUSHY BASIN
BRCDK	BURRO CANYON-DAKOTA
BRCN	BURRO CANYON
BRPK	BROWNS PARK
BXTR	BAXTER
CAMCZ	CAMEO COAL-COZZETTE
CAMMV	CAMEO COALS-MESAVERDE
CAMSC	CAMEO SANDS-COALS
CARL	CARLILE
CARM	CARMEL
CCCMC	COZZETTE-CORCORAN-CAMEO C
CCCSW	CRCN-COZZ-CAMEO SD-WMFK
CCRCW	COZZ-CRCRN-RLNS-CMEO-WMFK
CCRMV	COZZ-CRCRN-RLNS-MESAVERDE
CCRWF	CRCRN-COZZ-RLNS-WMFK
CD-FH	CODELL-FORT HAYS
CDHL	CEDAR HILLS
CDMTN	CEDAR MOUNTAIN
CDRN	CHADRON
CGAFL	COUNCIL GROVE - AMAZON - FOUNTAIN - LYONS
CGTR	CHUGWATER
CHIN	CHINLE
CHRK	CHEROKEE
CHTIS	CUTLER-HONAKER TRAIL-ISMAY
CKEMW	CHEROKEE-MORROW
CLFH	CLIFF HOUSE
CLGP	COLORADO GROUP
CLMN	COALMONT
CM-MR	CEDAR MOUNTAIN-MORRISON
CMBR	CAMBRIAN
CMEO	CAMEO
CMEOC	CAMEO COAL
CMSMV	CAMEO SANDS-MESAVERDE
COAL	COAL
CODL	CODELL
COUGR	COUNCIL GROVE
COZZ	COZZETTE
CR-MN	CORCORAN-MANCOS
CR-MV	CORCORAN-MESAVERDE
CRCMS	CAMEO SAND-CORCORAN
CRCRN	CORCORAN
CRCWF	CRCRN-CMEO SD-WMFK
CRCZR	CORCORAN-COZZETTE-ROLLINS
CRKE	CHEROKEE K
CRLGR	CARLILE-GREENHORN
CRTC	CRETACEOUS
CRTS	CURTIS
CSGEM	CASTLEGATE-EMERY
CSGMN	CASTLEGATE-MANCOS
CSLGT	CASTLEGATE
CSPR	CASPER SAND
CT-HT	CUTLER-HONAKER TRAIL
CTARK	CUTLER-ARKOSE
CTHRM	CUTLER-HERMOSA
CTLR	CUTLER
CWMFK	COZZETTE WILLIAMS FORK
CYNN	CHEYENNE
CZ-CR	COZZETTE-CORCORAN

COGCC Formation Codes

Code	Description
CZ-MV	COZZETTE-MESAVERDE
CZCRM	COZZETTE-CORCORAN-MESAVRD
CZCRW	COZZETTE-CORORAN-WMFK
CZRLS	COZZETTE-ROLLINS
D-CDL	D SAND-CODELL
D-GRH	D-GREENHORN
D-J-O	D-J-O SANDS
DCKM	DOCKUM
DCMCR	DAKOTA-CEDAR MTN-CORCORAN
DENNB	DAKOTA-ENTRADA-NIOBRARA
DEVN	DEVONIAN
DGCK	DOUGLAS CREEK
DJ-LK	DSND-JSND-LAKOTA
DJINJ	DENVER BASIN COMBINED DISPOSAL ZONE
DJNCS	DKTA-J-NBRR-CODL-SUSX
DJSND	D & J SAND
DK-BC	DAKOTA-BUCKHORN
DK-CDL	DAKOTA-CODELL
DK-CM	DAKOTA-CEDAR MOUNTAIN
DK-GL	DAKOTA-GALLUP
DK-J	DAKOTA-JSND
DK-JD	DAKOTA-J SAND-D SAND
DK-LK	DAKOTA-LAKOTA
DK-LY	DAKOTA-LYONS
DK-MC	DAKOTA-MANCOS
DK-MR	DAKOTA-MORRISON
DK-NB	DAKOTA-NIOBRARA
DK-PR	DAKOTA-PURGATOIRE
DK-SN	DAKOTA-SANASTEE
DK-WB	DAKOTA-WEBER
DKCMM	DAKOTA-CEDAR MTN-MORRISON
DKENG	DAKOTA- ENTRADA-GLORIETA
DKENT	DAKOTA-ENTRADA
DKGP	DAKOTA GROUP
DKGRC	DAKOTA-GREENHORN-CODELL
DKJCD	DAKOTA-J-CODELL
DKJCS	DAKOTA-J SAND-CODELL-SUSS
DKJNC	DAKOTA-J-NIOBRARA-CODELL
DKJSX	DAKOTA-J SAND-SUSSEX
DKMCB	DAKOTA-MANCOS B
DKMNB	DAKOTA-MUDDY-NIOBRARA
DKMRS	DAKOTA-MORRISON-SALT WASH
DKNCD	DAKOTA-CODELL-NIOBRARA
DKPCF	DAKOTA-PICTURED CLIFFS
DKTA	DAKOTA
DMEDG	DKTA-PRGR-MRSN-ENRD-DCKM-GLRT
DNBCD	D SAND-CODELL-NIOBRARA
DNVR	DENVER
DOSND	D & O SAND
DPCK	DEEP CREEK SAND
DSCR	DESERT CREEK
DSMS	DES MOINES
DSND	D SAND
DUNE	DUNE SAND
DWSN	DAWSON
EMRY	EMERY
EN-DK	ENTRADA-DOCKUM
EN-GL	ENTRADA & GLORIETA
EN-LY	ENTRADA-LYONS
ENBLM	ENTRADA-BLUFF-MORRISON
ENBMR	ENTRADA-BLUFF-MORRISON
ENRD	ENTRADA
ENTNG	ENTRADA-NUGGET
EOCN	EOCENE
EPUP	ENTRADA - PERMIAN - UPPER PENNSYLVANIAN
ERCS	ERICSON
FCASLE	FNTN-AMZN-COUGR-LSTKA-LYNS-ENRD
FCMVD	FRUITLAND COAL-MESAVERDE
FLNLW	FORT UNION-LANCE-LEWIS
FMNG	FARMINGTON
FNTN	FOUNTAIN
FRDK	FRONTIER-DAKOTA
FRKR	FORAKER
FRLD	FRUITLAND
FRLDC	FRUITLAND COAL
FRLLE	FORELLE
FRMD	FRONTIER-MUDDY
FRPCL	FRUITLAND-PICTURED CLIFFS
FRSC	FORT SCOTT
FRSD	FERRON SANDSTONE
FRTR	FRONTIER
FT-LW	FORT UNION-LEWIS
FT-MV	FORT UNION-MESAVERDE
FT-WS	FORT UNION-WASATCH
FTH-J	FORT HAYS-J SAND
FTHYS	FORT HAYS
FTLN	FORT UNION-LANCE
FTUN	FORT UNION
FTUNC	FORT UNION COAL
FUSN	FUSON

COGCC Formation Codes

Code	Description
FWLLE	Fountain-Wolfcamp-Lyons-Lykins-Entrada
FXHLB	FOX HILLS BASE
FXHLS	FOX HILLS
GDMDG	GRRS-DKTA-PRGR-MRSN-ENRD-DCKM-GLRT
GLDR	GLACIAL DRIFT
GLLP	GALLUP
GLMC	GILMORE CITY
GLRT	GLORIETA
GOSH	GOTHIC SHALE
GR-DK	GRANEROS - DAKOTA
GRNHN	GREENHORN
GRNNC	GREENHORN-NIOBRARA-CODELL
GRNT	GRANITE
GRRS	GRANEROS
GRRV	GREEN RIVER
GRSD	GREELEY SAND
GRTNB	GREENHORN-TIMPAS-NIOBRARA
HEBNR	HEEBNER
HM-IS	HERMOSA-ISMAY
HN-DC	HONAKER TRAIL-DESERT CRK
HN-IS	HONAKER TRAIL-ISMAY
HNKRT	HONAKER TRAIL
HNTSM	HUNTSMAN
HOVS	HOVENWEEP SHALE
HR-DS	HERMOSA/DESERT CREEK
HRFN	HUERFANO
HRMS	HERMOSA
HRSN	HARRISON
HTCH	HATCH
HYGN	HYGIENE
IGLD	INGLESIDE
ILES	ILES
ILESC	ILES COAL
INTR	IGNEOUS SILL INTRUSIVE
IS-DC	ISMAY-DESERT CREEK
ISMY	ISMAY
J-2	J-2 SAND
J-3	J-3 SAND
J-CDL	J-CODELL
J-GRH	J & GREENHORN
J-O	J & O SAND
J-SN	J SAND & SHANNON
J-SX	J & SUSSEX
JCDSX	J-CODELL-SUSSEX
JCSUS	J-CODELL-SUSSEX-SHANNON
JDCNB	J-D-CODELL-NIOBRARA
JFHC	J-FORT HAYS-CODELL
JGGNC	JSND-GRANEROS-GREENHORN-NIOBRARA-CODELL
JGRNC	JSND-GREENHORN-NIOBRARA-CODELL
JGRRS	JSND-GRANEROS
JNBCD	J-NIOBRARA-CODELL
JNBRR	J-NIOBRARA
JNBSX	J-NIOBRARA-SUSSEX
JNCKS	J-NIOB-CODL-DAK-SUSSEX
JNCSN	J-CODELL-NIOBRARA-SHANNON
JNCSS	JSND-CODL-NIO-SUSX-SHAN
JNCSX	J-CODELL-NIOBRARA-SUSSEX
JNFCS	J-NIOBRARA-FORT HAYS-CODELL-SUSSEX
JNFHC	J-NIOBRARA-FT HAYS-CODELL
JRSC	JURASSIC
JSND	J SAND
JSXSN	JSND-SUSSEX-SHANNON
JTPCD	J-CODELL-TIMPAS
KDRK	KINDERHOOK
KEYES	KEYES
KRTLD	KIRTLAND
KSSC	KANSAS CITY
L-D-M	LAKOTA-DAKOTA-MUDDY
LASAL	LASAL
LDVLL	LEADVILLE
LECMP	LECOMPTON
LEWS	LEWIS SHALE
LFTUN	LOWER FORT UNION
LG-MR	LANSING-MARMATON
LG-MS	LANSING-MISSISSIPPIAN
LG-PN	LANSING-PENNSYLVANIAN
LGKC	LANSING-KANSAS CITY
LISMY	LOWER ISMAY
LKMR	LAKOTA-MORRISON
LKNB	LAKOTA-NIOBRARA
LKNS	LYKINS
LKSN	LAKOTA-SUNDANCE
LKT-J	LAKOTA - J SAND
LKTA	LAKOTA
LLWIS	LOWER LEWIS
LN-FX	LANCE-FOXHILLS
LN-LW	LANCE-LEWIS
LN-WS	LANCE-WASATCH
LNC-L	LANCE LOWER
LNC-U	LANCE UPPER

COGCC Formation Codes

Code	Description
LNCE	LANCE
LNFTW	LANCE-FORT UNION-WASTCH
LNFXW	LANCE-FOXHILLS-WASATCH
LNRD	LEONARD
LNSNG	LANSING
LOESS	LOESS
LOYD	LOYD SS
LRMI	LARAMIE
LSNGA	LANSING A
LSNGB	LANSING B
LSNGC	LANSING C
LSNGD	LANSING D
LSTKA	LOWER SATANKA
LW-MV	LEWIS-MESAVERDE
LWFTW	LEWIS-FORT UNION-WASATCH
LWIS	LEWIS
LWISA	LEWIS A ZONE
LY-NB	LYONS-NIOBRARA
LYLKA	LYONS-LAKOTA
LYNS	LYONS
LYTL	LYTLE
M-O-W	MISSISSIPIAN-OSAGE-WARSAW
MCCK	MCCRACKEN
MCCL	MCCLAVE
MCDM	MC DERMOTT
MD-DK	MUDDY-DAKOTA
MD-FS	MUDDY-FUSON
MD-LK	MUDDY-LAKOTA
MD-SK	MUDDY-SKULL CREEK
MDDY	MUDDY
MDDYD	MUDDY D
MDDYJ	MUDDY J
MDLYS	MUDDY-LYONS
MDMW	MUDDY-MOWRY
MDSN	MADISON
ME-PL	MENEFEE-POINT LOOKOUT
MENF	MENEFEE
MENFC	MENEFEE COAL
MFUNB	MUDDY-FUSON-NIOBRARA
MK-SR	MOENKOPI-SHINARUMP
MM-MW	MARMATON-MORROW
MN-EM	MANCOS-EMERY
MN-SE	MANCOS-SEGO
MNCAB	MANCOS A & B
MNCS	MANCOS
MNCSA	MANCOS A
MNCSB	MANCOS B
MNKP	MOENKOPI
MNRN	MINTURN
MOLS	MOLAS
MORG	MORGAN
MR-AT	MORROW-ATOKA
MR-FS	MARMATON-FORT SCOTT
MR-KY	MORROW-KEYES
MR-MN	MORAPOS-MANCOS
MR-MT	MORROW-MARMATON
MR-SN	MORRISON-SUNDANCE
MR-SW	MORRISON-SALT WASH
MRKYS	MARMATON-KEYES
MRON	MAROON
MRPS	MORAPOS
MRRW	MORROW
MRRW1	MORROW V-1
MRRW2	MORROW V-2
MRRW3	MORROW 3
MRRW4	MORROW V-4
MRRW5	MORROW V-5
MRRW6	MORROW V-6
MRRW7	MORROW V-7
MRRWA	MORROW A
MRRWB	MORROW B
MRRWU	MORROW-UPPER
MRSN	MORRISON
MRTFS	MARMATON-TOPEKA-FT SCOTT
MRTN	MARMATON
MRV11	MORROW V-11
MS-KY	MISSISSIPPIAN-KEYES
MS-MW	MISSISSIPPIAN-MORROW
MS-OS	MISSISSIPPIAN-OSAGE
MS-PN	MISSISSIPPIAN-PENNSYLVANI
MS-SL	MISSISSIPPIAN-ST LOUIS
MS-SP	MISSISSIPPIAN-SPERGEN
MSND	M SAND
MSPOS	MISS.-SPERGEN-OSAGE
MSSP	MISSISSIPPIAN
MSSR	MISSOURI
MULTI	MULTIPLE FORMATIONS
MV-SN	MESAVERDE-SANASTEE
MVDK	MESAVERDE-DAKOTA
MVMNB	MESAVERDE-MANCOS B

COGCC Formation Codes

Code	Description
MVRD	MESAVERDE
MVRDC	MESAVERDE COAL
MWRY	MOWRY
N-COM	NOT COMPLETED
N-COM1	NOT COMPLETED
N-COM2	NOT COMPLETED
N-COM3	NOT COMPLETED
N-COM4	NOT COMPLETED
N-T-C	NIOBRARA-TIMPAS-CODELL
NA	NOT APPLICABLE
NAVA	NAVAJO
NB-CD	NIOBRARA-CODELL
NB-FH	NIOBRARA-FT HAYS
NB-FR	NIOBRARA-FRONTIER
NB-SN	NIOBRARA-SHANNON
NB-SX	NIOBRARA-SUSSEX
NB-TM	NIOBRARA-TIMPAS
NBCDL	NIOBRARA-CODELL-LYONS
NBCSN	NIOBRARA-CODELL-SHANNON
NBCSX	NIOBRARA-CODELL-SUSSEX
NBCTB	NIOB-CODELL-TEPEE BUTTES
NBFHC	NIOBRARA-FT HAYS-CODELL
NBFHS	NIOBRARA-FT HAYS-SUSSEX
NBGFR	NIOBRARA-GREENHORN-FRONTI
NBRR	NIOBRARA
NBSSX	NIOBRARA-SHANNON-SUSSEX
NBTCL	NIOBRARA-TIMPS-CODL-LAKOT
NBTSX	NIOBRARA-TIMPAS-SUSSEX
NCMN	NACIMIENTO
NESLC	NESLEN COAL
NEVA	NEVA
NFCSX	NIOB-FT HYS-CODELL-SUSSEX
NGSD	NUGGET SANDSTONE
NOTSP	NOT SPECIFIED
NTCSX	NIOBRARA-TIMPAS-CODL-SUSS
OGLL	OGALLALA
OGRK	ORGAN ROCK
OHCRK	OHIO CREEK
OJAM	OJO ALAMO
OLGCN	OLIGOCENE
ORDV	ORDOVICIAN
OS-AB	OSAGE-ARBUCKLE
OSAGE	OSAGE
OSND	O SAND
OURAY	OURAY

Code	Description
OURAY	OURAY
PAWN	PAWNEE
PAWNA	PAWNEE A
PAWNB	PAWNEE B
PC-MV	PICTURED CLIFFS-MESAVERDE
PCCF	PICTURED CLIFFS
PCCK	PICEANCE CREEK
PCMB	PRECAMBRIAN
PCMDK	PICT CLIFFS-MESAVERDE-DAK
PENN	PENNSYLVANIAN
PHCK	PARACHUTE CREEK
PLZOC	PALEOZOIC
PNATK	PENNSYLVANIAN-ATOKA
PNLK	POINT LOOKOUT
POCNC	POISON CANYON COAL
PR-AP	PIERRE-APISHAPA
PR-DK	PURGATOIRE-DOCKUM
PRDX	PARADOX
PRGR	PURGATOIRE
PRKM	PARKMAN
PRKNC	PARKMAN-NIOBRARA-CODELL
PRMN	PERMIAN
PRRE	PIERRE
PRREA	PIERRE A
PRREB	PIERRE B
PSPR	PHOSPHORIA
RCRD	RICHARD
RCZCR	ROLLINS-COZZETTE-CORCORAN
RDCV	RED CAVE
REGN	REAGAN
RL-WF	ROLLINS-WILLIAMS FORK
RLNS	ROLLINS
RMVWS	ROLLINS-MESAVERDE-WASATCH
ROLCM	ROLLINS-CAMEO
ROLCR	ROLLINS-CORCORAN
RT-VJ	RATON-VERMEJO COALS
RTON	RATON COAL
RTONS	RATON SAND
RTS-VJ	RATON SAND - VERMEJO COAL
SCRL	STONE CORRAL
SD-NG	SUNDANCE-NUGGET
SECSG	SEGO - CASTLEGATE
SEGO	SEGO
SGDC	SANGRE DE CRISTO
SHLE	SHALE

COGCC Formation Codes

Code	Description
SHWNE	SHAWNEE
SKCRK	SKULL CREEK
SL-DV	SILURIAN-DEVONIAN
SLRN	SILURIAN
SLTW	SALT WASH
SMKH	SMOKY HILL
SMLM	SUNDANCE-MORR-LAKOTA-MDDY
SMVL	SUMMERVILLE
SN-CD	SHANNON-CODELL
SN-MO	SUNDANCE-MORRISON
SN-TP	SHANNON-TEEPEE BUTTES
SNDC	SUNDANCE
SNJS	SAN JOSE
SNSD	SHANNON
SNST	SANASTEE
SP-OS	SPERGEN-OSAGE
SPABK	SPERGEN-ARBUCKLE
SPGN	SPERGEN
SRMP	SHINARUMP
SRMWB	SHINARUMP/MOENKOPI/WEBER
SSNCD	SUSSEX-SHANNON-NIOB-CODL
STCH	SAWATCH
STGV	ST GENEVIEVE
STJO	ST JOE
STLLN	ST LOUIS-LANSING
STLS	ST LOUIS
STLSP	ST LOUIS-SPERGEN
STMTN	STONY MOUNTAIN
SUDD	SUDDUTH COAL
SUSX	SUSSEX
SW-DK	SALT WASH-DAKOTA
SX-CD	SUSSEX-CODELL
SX-MD	SUSSEX-MUDDY
SX-SN	SUSSEX-SHANNON
SXSCD	SUSSEX-SHANNON-CODELL
SXTCD	SUSSEX-TIMPAS-CODELL
TDLT	TODILTO
TDWL	TIDWELL
TMPS	TIMPAS
TNLP	TENSLEEP
TOCT	TOCITO
TOPAB	TOPEKA A & B
TOPAC	TOPEKA A C
TOPK	TOPEKA
TOPKA	TOPEKA A
TOPKB	TOPEKA B
TOPKC	TOPEKA C
TORCH	TORCH
TORON	TORONTO
TP-CD	TIMPAS-CODELL
TP-FS	TOPEKA-FORT SCOTT
TP-LK	TIMPAS-LAKOTA
TP-LS	TOPEKA-LANSING
TPABC	TOPEKA A B C
TPBT	TEEPEE BUTTES
TPKBC	TOPEKA B & C
TPKSH	TOPEKA-SHAWNEE
TPKWB	TOPEKA-WABAUNSEE
TPLCLS	TOPEKA-LECOMPTON-LANSING
TPLFS	TOPEKA-LANSING-FT SCOTT
TRCK	TROUT CREEK
TRDD	TRINIDAD
TRTY	TERTIARY
TUNK	TUNUNK
UNK	UNKNOWN
VLCC	VOLCANICS
VRGL	VIRGIL
VRMJ	VERMEJO COAL
W-N-L	WOLFCAMP-NEVA-LANSING
WBNS	WABAUNSEE
WEBR	WEBER
WFCGW	WOLFCAMP GRANITE WASH
WFCM	WILLIAMS FORK - CAMEO
WFCMC	WILLIAMS FORK-CAMEO COAL
WFCMP	WOLFCAMP
WFCMS	WILLIAMS FORK - CAMEO SD
WFFMV	WASATCH-FORT UNION_FOX HILLS_MESA VERDE
WFILM	WILLIAMS FORK- ILES - MANCOS
WFILS	WILLIAMS FORK-ILES
WFULW	WASATCH-FT UNION-LEWIS
WFUMV	WASATCH-FT UNION-MESAVERD
WHLRC	WHEELER COAL
WMFK	WILLIAMS FORK
WMFKC	WILLIAMS FORK COAL
WMRCM	WILLIAMS FK-ROLLINS-CAMEO
WNGT	WINGATE
WOSJA	WARSAW-OSAGE-ST JOE-ABCK
WROSG	WARSAW-OSAGE
WRSW	WARSAW
WRVR	WHITE RIVER

COGCC Formation Codes

Code	Description	Code	Description
WSGR	WASATCH-GREENRIVER		
WSMVD	WASATCH-MESAVERDE		
WSTAB	WASATCH A & B		
WSTAG	WASATCH A & G		
WSTC	WASATCH		
WSTCA	WASATCH A		
WSTCB	WASATCH B		
WSTCD	WASATCH D		
WSTCF	WASATCH F		
WSTCG	WASATCH G		
WSTFG	WASATCH F & G		
XBEN	X BENTONITE		

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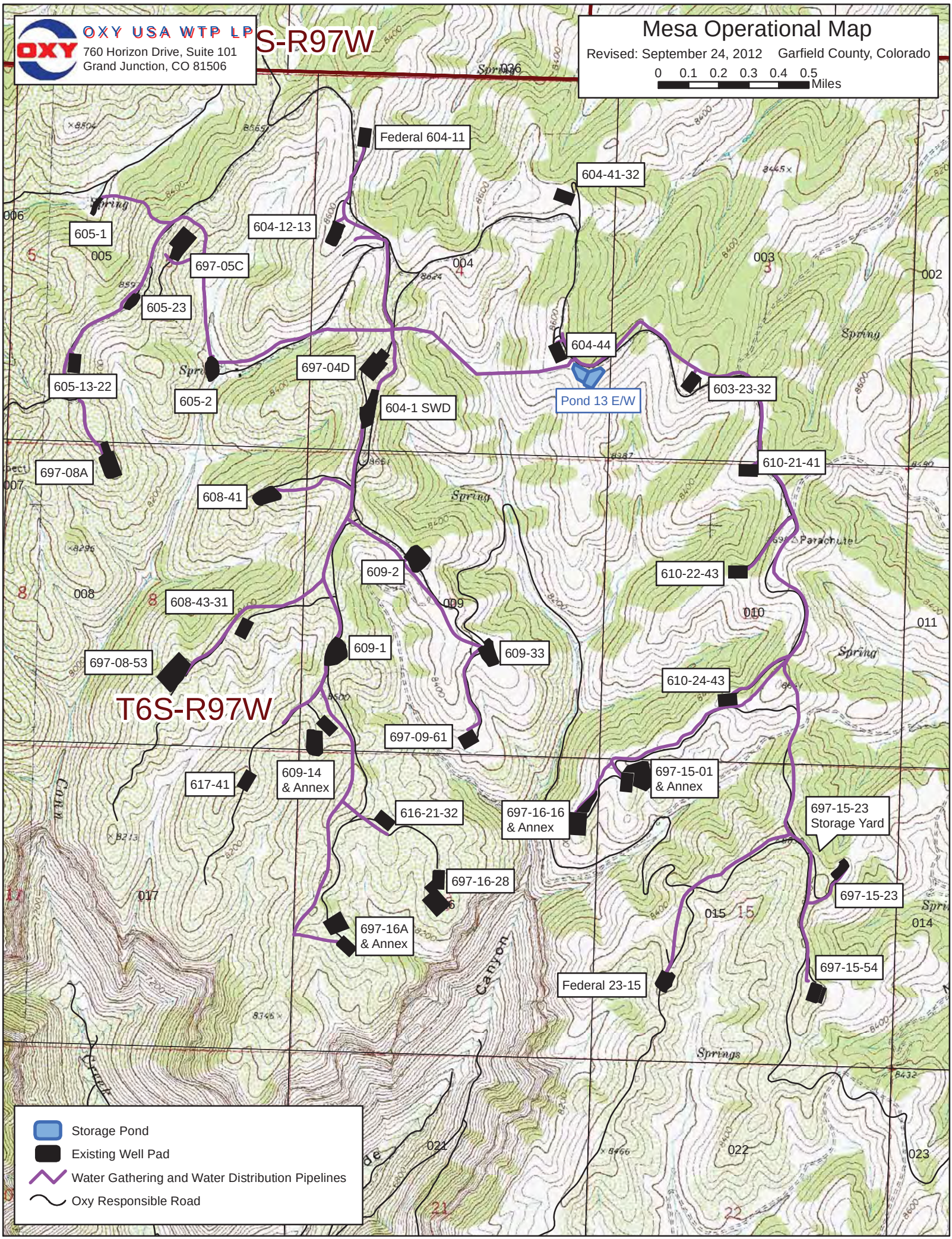
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Mesa Operational Map
Revised: September 24, 2012
Garfield County, Colorado
0 0.1 0.2 0.3 0.4 0.5 Miles
T5S-R97W
T6S-R97W
Federal 604-11
604-41-32
604-12-13
605-1
697-05C
605-23
605-13-22
605-2
697-04D
604-1 SWD
604-44
Pond 13 E/W
603-23-32
610-21-41
697-08A
608-41
609-2
610-22-43
608-43-31
609-1
609-33
697-08-53
610-24-43
697-09-61
617-41
609-14
& Annex
697-15-01
& Annex
616-21-32
697-16-16
& Annex
697-15-23
Storage Yard
697-16-28
697-15-23
697-16A
& Annex
697-15-54
Federal 23-15
Storage Pond
Existing Well Pad
Water Gathering and Water Distribution Pipelines
Oxy Responsible Road

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Wastewater Management and System Plan

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

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OXY USA WTP LP

POND 13 CENTRALIZED E & P WASTE MANAGEMENT FACILITY

WASTE MANAGEMENT AND SYSTEM PLAN

LUDC 4-203.N. Wastewater Management and System Plan.

The operations of the facility will be similar to other natural gas operations in relatively remote areas of Garfield County. Staff will not be assigned to the facility on a regular basis. Personnel will be at the facility only for short periods of time. Workers will be providing facility maintenance and inspections.

Sanitary facilities are provided by portable toilets placed at numerous sites in the field per OSHA standards. These portable toilets are maintained by Western Colorado Waste of Mack, Colorado. All waste is hauled to a licensed treatment facility. A "Will Serve" letter is provided documenting the maintenance of these sanitary facilities.

760 Horizon Drive, Suite 102
Grand Junction, CO 81506
TEL 970.263.7800
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WESTERN COLORADO WASTE, INC

Mailing Address: P. O. Box 26 Mack, CO 81525

Hank Bounds - Trash: (970) 210-2330 Terry Forrest – Toilets: (970) 216-5668

Fax: (970) 255-7080

Re: Portable Toilets

To whom it may concern,

Western Colorado Waste, Inc. provides portable toilet service to Oxy USA. Toilets are serviced on a weekly basis, or as requested by Oxy. The waste is disposed of at one of three locations.

Garfield Co. Landfill, Rulison, CO

Clifton Sanitation, Clifton, CO

Persigo Wastewater Treatment Facility, Grand Junction, CO

Thank you,

Terry Forrest

Western Colorado Waste, Inc.

970-216-5668

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Standards Analysis

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

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ARTICLE 7 – STANDARDS ANALYSIS

OXY USA WTP LP

POND 13 E/W CENTRALIZED E & P WASTE MANAGEMENT FACILITY

DIVISION 1. GENERAL APPROVAL STANDARDS FOR LAND USE CHANGE PERMITS

SECTION 7-101. COMPLIANCE WITH ZONE DISTRICT USE RESTRICTIONS

The subject property is located in the Resource Lands – Plateau (RL-P) zone District of Garfield County. The proposed Centralized E & P Waste Management Facility is considered a material handling use according to Table 3-403: Use Table of the Garfield County Land Use and Development Code. This type of use requires a Limit Impact Review (LIR) approval to receive a Land Use Change Permit.

SECTION 7-102. COMPLIANCE WITH COMPREHENSIVE PLAN AND INTERGOVERNMENTAL AGREEMENTS

The OXY Pond 13 facility generally conforms to the Garfield County Comprehensive Plan. The site is designated in the Garfield County Comprehensive Plan 2030 as a Resource Production/Natural (RPN) area. The Plan's description of RPN includes support buildings and facilities needed for the natural resource extraction industry. The existing use is not within an area governed by an intergovernmental agreement.

SECTION 7-103. COMPATIBILITY

The proposed site is located within the boundaries of a large, 640 acre, privately held property. The subject property and much of the surrounding property is owned by OXY USA WTP LP (OXY). Natural gas development is the predominate use on the property. The property is also leased for seasonal cattle grazing. The proposed use is intended to provide a centralized and convenient location for the natural gas operations in the immediate area. This proposed use is compatible with and supportive of the adjacent uses.

SECTION 7-104. SOURCE OF WATER

A source of potable water will not be required for workers utilizing the site. This facility is not manned on a regular basis and does not require a water distribution and wastewater system to properly function. Workers will provide their own potable water in their trucks. Potable water is made available at Oxy's field office for personnel and contractors. A source of water is not

required for the operation of the facility. The site will be used as a Centralized E & P Waste Management Facility. Water will not be required for the operation of sanitary facilities. Portable toilets located throughout Oxy's holdings will be used, and all wastes will be hauled to a licensed treatment facility. Water will not be required for landscaping. No landscaping is proposed at this site.

SECTION 7-105. CENTRAL WATER DISTRIBUTION AND WASTEWATER SYSTEMS

A. Water Distribution System

As stated above, the proposed facility will not require a source of water or a central water distribution system.

B. Wastewater System

As stated above, the proposed facility will not require a centralized wastewater system. Portable toilets located throughout Oxy's holdings will be used, and wastes will be hauled to a license disposal facility.

SECTION 7-106. ADEQUATE PUBLIC UTILITIES

The facility will not require public utilities in order to operate.

SECTION 7-107. ACCESS AND ROADWAYS

A. Access to Public Right of Way

The site is accessed from County Road (CR) 204 (Roan Creek Road) and CR213 (Conn Creek Road) and a series of private roads that were built and are maintained for the exclusive use of the natural gas industry.

B. Safe Access

The private road system was designed and built by the applicant to provide exclusive access to the natural gas operations in the area and is not designed for public use. The roadway is constructed of gravel and native materials and is treated with a dust palliative as needed. This roadway provides a safe access to the site for the applicant.

C. Adequate Capacity

The proposed facility will generate little traffic, and the current road system has adequate capacity to support the proposal. See Traffic Analysis included with this application for additional details.

SECTION 7-108. LAND USE SUBJECT TO NATURAL HAZARDS

The proposed site is located outside of the area mapped for slope, soils and surficial geology hazards on the Garfield County on-line GIS map resources. The proposed use is not subject to significant natural hazard risks and will not exacerbate existing natural hazards.

SECTION 7-109. FIRE PROTECTION

Oxy will make their Emergency Response Plan available to the appropriate fire protection district. If requested, Oxy will orient the appropriate fire protection district regarding this facility.

DIVISION 2. GENERAL RESOURCE PROTECTION STANDARDS

SECTION 7-201. AGRICULTURAL LANDS

A. No Adverse Affect to Agricultural Operations

The applicant leases the parcel for seasonal cattle grazing on the property. The proposed use will not directly affect this operation.

B. Domestic Animal Controls

Dogs and other domestic animals will not be permitted on the facility site or allowed to interfere with livestock.

C. Fences

The site will be fenced. The facility will not impact livestock operations.

D. Roads

No new roads will be constructed to access this facility and the existing road will be maintained.

E. Irrigation Ditches

The proposed use will not impact irrigation ditches.

SECTION 7-202. WILDLIFE HABITAT AREAS

Oxy commissioned ERO Resources Corporation (ERO) to prepare a biological resources survey of the site and it is included as an attachment to this application.

A. Buffers

Visual or sound buffers are not necessary to screen structures or activity areas from habitat areas. The facility will be fenced with an eight-foot tall wildlife fence, and the pond will be netted to exclude water fowl from the facility.

According to a Biological Resources Survey performed by ERO, the site has the potential for only one federally threatened, proposed and candidate species to occur near the project area. ERO surveyed the project site for potential habitat for the greater sage grouse. They found the area to be poor habitat for the greater sage grouse. This conclusion corresponds with the Suitable Habitat Results map of the adopted Garfield County Greater Sage-Grouse Conservation Plan.

B. Locational Controls of Land Disturbance

The project area is currently disturbed after being previously developed as a production pond. No additional wildlife habitat disturbance will occur. According to the ERO survey, most wildlife species that are likely to occur in the project boundaries are adapted to human-caused disturbance. The conversion of the site to an E & P Waste Management facility should not alter current migration patterns.

C. Preservation of Native Vegetation

The site will be reclaimed after the facility is no longer utilized and will be revegetated with native plant species. Noxious weeds will be controlled during the life of the facility and during the re-establishment of native plants. A Noxious Weed Management Plan specifically developed for this site is included with this application in the Grading and Drainage Plan section.

D. Habitat Compensation

No critical wildlife habitat will be disturbed in converting this site to an E & P Waste facility.

E. Domestic Animal Controls

Domestic animals will not be kept on the site.

SECTION 7-203. PROTECTION OF WATERBODIES

A. Minimum Setback

The proposed site will be more than 35 feet from the Typical and Ordinary High Water elevation of any waterbody.

B. Structures Permitted in Setback

There will not be any structures located in this setback area.

C. Structures and Activity Prohibited in Buffer Zone

There will not be any structures or activities located in the buffer zone.

SECTION 7-204. DRAINAGE AND EROSION

The site is an existing disturbed surface area. No additional surface disturbance is planned. BMPs will be used to protect waterbodies from stormwater runoff during the operation of this facility. This facility is more than 100 feet from a waterbody, and it does not create more than 10,000 square feet of impervious area outside of the pond area which is designed to accommodate precipitation within the maintained freeboard.

SECTION 7-205. ENVIRONMENTAL QUALITY

A. Air Quality

This facility will not cause air quality to be reduced below acceptable levels established by the Colorado Air Pollution Control Division and will comply with appropriate Colorado air emissions permitting regulations as applicable.

B. Water Quality

This facility will be operated in compliance with all applicable State and Federal hazardous material regulations. Implementation and adherence to Oxy's Stormwater Management Plan (SWMP) BMPs and Spill Prevention Control and Countermeasures Plan (SPCC) will assure that water quality is protected. There will be no hazardous materials stored at this proposed site.

SECTION 7-206. WILDFIRE HAZARDS

A. Location Restrictions

The site is in a moderate wildfire area according to the Garfield County on-line GIS map resources.

B. Development Does Not Increase Potential Hazard

The facility will not increase the potential intensity or duration of a wildfire, or adversely affect wildfire behavior or fuel composition.

C. Roof Materials and Design

No structures are being proposed. This standard is not applicable.

SECTION 7-207. NATURAL AND GEOLOGIC HAZARDS

A Geohydrology Report is included with this application under a separate tab.

A. Utilities

There are no utilities serving this site. This standard is not applicable.

B. Development in Avalanche Hazard Areas

The site is located on top of the plateau and not subject to significant avalanche hazards.

C. Development in Landslide Hazard Areas

The site is located on top of the plateau and not subject to significant landslide hazards.

D. Development in Rockfall Hazard Areas

The site is located on top of the plateau and not subject to significant rockfall hazards.

E. Development in Alluvial Fan Hazard Area

The site is located on top of the plateau and not subject to significant alluvial fan hazards.

F. Slope Development

According to the Geohydrology Report, the primary limitations for shallow excavations are based on the slopes and severe seepage. Consideration will be given to the design and construction of this facility to ensure that slopes are graded appropriately to minimize the potential for cutback caving. The suitability of the soils in the project area is identified as being somewhat to very limited in regard to the construction of ponds and embankments. The limitations identified are primarily applicable to unlined water impoundments. Consideration will be given to design and construction characteristics related to the area soil thickness and depth to bedrock to mitigate these limitations. Consideration will also be given to the design and operation of the high density polyethylene (HDPE) liner system for the impoundments, which will mitigate potential seepage and leaks.

G. Development on Corrosive or Expansive Soils and Rock

According to the Natural Resources Conservation Service (NRCS), the soils on the site have moderate corrosion of steel characteristics and low corrosion of concrete characteristics. As stated above, the primary limitations of the soil for shallow excavations are based on the slopes and severe seepage. The limitations identified are primarily applicable to unlined water impoundments. Consideration will be given to the design and operation of the liner system for the impoundments, which will mitigate potential seepage and leaks.

H. Development in Mudflow Areas

The site is located on top of the plateau and not subject to significant mudflow hazards.

I. Development Over Faults

According to the Geohydrology Report, there are no major faults in the central Roan Plateau area and only minimal seismic activity near the proposed facility has occurred in recent geologic time.

SECTION 7-208. RECLAMATION

After the completion of Oxy's natural gas production in the area, the facility will be decommissioned and reclaimed in accordance with the reclamation plan provided in the Grading and Drainage Plan section. All of Oxy's surface disturbances (final reclamation requirements) are covered under a statewide bond.

DIVISION 3. SITE PLANNING AND DEVELOPMENT STANDARDS

SECTION 7-301. COMPATIBLE DESIGN

A. Site Organization

The site was designed to accommodate the functional and efficient operations, monitoring and maintenance of the facility.

B. Operational Characteristics

Operation of the proposed facility will be consistent with nearby uses. Adjacent lands will not be impacted by the generation of vapor, dust, smoke, glare, noise or vibration. The facility will be unmanned. There will be minimal impacts, if any, to the existing roadway system during the operational phase.

C. Buffering

Buffering will not be necessary. This site is within a large and remote parcel and is surrounded by similar uses.

D. Materials

Buildings are not being proposed. This standard is not applicable.

SECTION 7-302. OFF-STREET PARKING AND LOADING STANDARDS

Adequate parking will be made available to accommodate Oxy personnel during regular operation, inspection and maintenance of the facility. All activities on this site will be conducted out of any public right-of-way.

SECTION 7-303. LANDSCAPING STANDARDS

The proposed site is located in a rural and remote area of Garfield County. The site is within a large property and only accessible via a private road system. Landscaping is not being proposed for this facility

SECTION 7-304. LIGHTING STANDARDS

A. Downcast Lighting

Any lighting will be directed inward, towards the interior of the site.

B. Shielded Lighting

Any exterior lighting will be shielded to not shine directly onto other properties.

C. Hazardous Lighting

Light from the site will not create a traffic hazard or be confused as traffic control devices.

D. Flashing Lights

The facility will not contain flashing lights.

E. Height Limitations

There will be no light sources exceeding 40 feet in height on the site.

SECTION 7-305. SNOW STORAGE STANDARDS

Snow will be stored in a vacant section of the existing disturbed area. The site is graded to accommodate snowmelt to insure sufficient drainage.

SECTION 7-306. TRAIL AND WALKWAY STANDARDS

The proposed site is located in a rural and remote area of Garfield County. The site is within a large property and only accessible via a private road system. A connection to public facilities is not appropriate or feasible.

DIVISION 10. ADDITIONAL STANDARDS FOR INDUSTRIAL USES

SECTION 7-1001. INDUSTRIAL USE

A. Residential Subdivisions

This site is not located in a platted residential subdivision.

B. Setbacks

This site is located in a large parcel and is more than 100 feet from an adjacent residential property line.

C. Concealing and Screening

This site is located in a large and remote parcel. Screening from dissimilar uses in the area is not required.

D. Storing

All products will be stored in compliance with all national, State and local codes and will be a minimum of 100 feet from adjacent property lines.

E. Industrial Wastes

All industrial wastes will be disposed of in a manner consistent with Federal and State statures and requirements of the CDPHE.

F. Noise

Noise will not exceed COGCC noise standards.

G. Ground Vibration

This facility will not generate ground vibrations perceptible beyond the boundary line of the property.

H. Interference, Nuisance, or Hazard

This facility will not emit heat, glare, radiation or fumes which will interfere with uses on adjacent properties or constitute a public nuisance or hazard.

Waiver Requests

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

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Grand Junction, CO 81506

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OXY USA WTP LP

POND 13 CENTRALIZED E & P WASTE FACILITY

WAIVER REQUEST

Pursuant to Section 4-202 of the Garfield County Land Use and Development Code, OXY USA WTP LP (Oxy) requests a waiver for the submittal requirement of a Landscape Plan, Development Agreement, and Improvement Agreement for the Pond 13 Centralized E & P Waste Facility.

Section 4-203.F. Landscape Plan

A waiver request shall be considered based on the following criteria:

1. The Applicant shows good cause for the requested waiver;

   Response: The site is located in a rural and remote area of Garfield County. The project is located in a large privately held property and is accessible from a system of private roads and is not visited by the public.

2. The project size, complexity, anticipated impacts, or other factors support a waiver;

   Response: The project is in an area zoned Resource Lands-Plateau. The facility will be used to provide produced water storage for natural gas operations in the area. There are no residences within view of the project site. The site is not visited by the public.

3. The waiver does not compromise a proper and complete review; and

   Response: A proper and complete review of the storage facility would not be compromised by the absence of a landscape plan. Adjacent uses include natural gas operations and are similar to the proposed use of the site.

4. The information is not material to describing the proposal or demonstrating compliance with approval criteria.

   Response: A landscape plan is not material to describing the purpose, operation and maintenance of the facility or demonstrating compliance with applicable approval criteria.

Section 4-203.J. Development Agreement

A waiver request shall be considered based on the following criteria:

1. The Applicant shows good cause for the requested waiver;

   Response: Oxy wishes to neither propose a phasing schedule or extend establishment of vested property rights.

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2. The project size, complexity, anticipated impacts, or other factors support a waiver;

   Response: The facility is largely constructed and only requires a modification to meet the COGCC standards for a Centralized E & P Waste Management Facility.

3. The waiver does not compromise a proper and complete review; and

   Response: The LIR request can be properly and completely reviewed without a development agreement.

4. The information is not material to describing the proposal or demonstrating compliance with approval criteria.

   Response: A development agreement is not material to describing the purpose, operation and maintenance of the facility or demonstrating compliance with applicable approval criteria.

Section 4-203.K. Improvements Agreement

A waiver request shall be considered based on the following criteria:

1. The Applicant shows good cause for the requested waiver;

   Response: No public improvements are being proposed that would warrant the creation of an improvements agreement.

2. The project size, complexity, anticipated impacts, or other factors support a waiver;

   Response: As stated above no public improvements are being proposed with this request.

3. The waiver does not compromise a proper and complete review; and

   Response: The application can be properly and completely reviewed without an improvements agreement.

4. The information is not material to describing the proposal or demonstrating compliance with approval criteria.

   Response: An improvements agreement is not material to describing the purpose, operation and maintenance of the facility or demonstrating compliance with applicable approval criteria.

Pursuant to Section 4-118 of the Garfield County Land Use and Development Code, Effective July 15, 2013, Oxy requests a waiver for the standards for Access and Roadways for the Pond 13 E/W Centralized E&P Waste Management Facility.

Section 7-107 Access and Roadways

The roadway between the end of CR 213 and the Pond 13 facility most closely resembles a Semi-Primitive roadway in Table 7-107 of the Garfield Land Use and Development Code based on the estimated number of average daily trips (ADT) that occur on this road. This road does not meet this standard due to a couple of sections that contain a 13-percent grade where the maximum standard is 12-percent. Additionally the surface material consists of native material, road base and gravel where the standard is a gravel surface only.

A waiver of standards request shall be considered based on the following criteria:

1. Achieves the intent of the subject standard to the same and better degree than the subject standard:

   Response: The intent of the roadway standard is to provide safe and adequate access to a development. The Pond 13 Facility will be accessed from CR 213 and then by a series of private roads. These private roads are built and maintained by Oxy for the use of the natural gas industry and provides regular access to numerous facilities in the area. Oxy has spent a considerable amount of effort and capital to assure that the access to their facilities is safe and adequate. Oxy spent $2.5 million to maintain their private road system in 2012 and $371,149.06 for maintenance on the mountain road section in 2012. Oxy has spent over $1 million for maintenance on their private road system and $219,093.19 for just the mountain road so far this year.

   Oxy has significantly improved both the grade and radius on their road system in recent years. Additionally, the road system is posted with signs to allow only authorized personnel. During drilling and completion activities with higher traffic volumes, a security station is manned to prohibit unauthorized personnel from accessing the road. A security firm has been hired to use radar to enforce the speed limits that are posted on the roads. Chain-up rules are implemented during inclement weather through the use of a web site, call-in number, and a sign at the guard shack. Finally, the road can be closed and operations rescheduled if the weather makes the roadway unsafe.

   These measures achieve the intent of the subject standard to the same and better degree than subject standards alone.

2. Imposes no greater impacts on adjacent properties than would occur through compliance with the specific requirements of this Code.

   Response: This private road system does not provide access to residential uses nor is it used by the general public on a regular basis. Oxy does authorize government agencies such as the BLM and CPW, in-holders, those with grazing leases and rights to use their road system. Oxy has not received any complaints from these authorized parties

regarding the condition of the road. The waiver of this standard will not create greater impacts on adjacent properties than would occur if it was in full compliance.

Stormwater Management Plan

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

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STATE OF COLORADO

John W. Hickenlooper, Governor
Christopher E. Urbina, MD, MPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
Located in Glendale, Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

http://www.cdphe.state.co.us

Colorado Department
of Public Health
and Environment

June 21, 2012

Doug Weaver, Ops Mgr & Attorney-in-Fact
Oxy USA WTP LP
760 Horizon Dr Ste 101
Grand Junction, CO 81506

RE: Renewal of Permit/Certification
Administrative Continuation
For: Cascade Creek Common Plan of Development
Located at: 13 Mi N of Debeque (See map in file), Debeque, Garfield County
Permit No.: COR038414

Dear Mr. Weaver;

The Division has received an application to renew the above permit/certification. It has been determined that there is sufficient information to make this permit/certification eligible for renewal. More information may be requested by the Division as progress is made in developing a new permit/certification for the above listed facility. This information must be made available to the Division when requested to complete the permit process.

The Division is currently in the process of developing a new permit or master general permit and associated certification for the above permitted facility. The development and review procedures required by law have not yet been completed. When the discharge permit issued to you for your facility expired on **June 30, 2012** your permit is administratively continued and remains in effect under Section 104(7) of the Administrative Procedures Act, C.R.S. 1973, 24-4-101, et seq (1982 repl. vol. 10) until the new permit/certification is issued and effective.

All effluent permit terms and conditions in your current permit will remain in effect until your new permit/certification is issued and effective.

PLEASE KEEP THIS LETTER WITH YOUR PERMIT AND SWMP TO SHOW CONTINUATION OF PERMIT COVERAGE.

Sincerely,

Debbie Jessop
Permits Section
WATER QUALITY CONTROL DIVISION

xc: Permit File

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
TELEPHONE: (303) 692-3500

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR-030000
STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION

Certification Number **COR038414**

This Certification to Discharge specifically authorizes:

Oxy USA WTP LP

LEGAL CONTACT:
Heidi Reed, Sr. EHS Advisor
Oxy USA WTP LP
2754 Compass Drive Ste. 170
Grand Junction, CO 81506
Phone # 970/263-3609
jfrey@cordcomp.com

LOCAL CONTACT:
Joanna Fry, ,
Phone # 970/ 263-7800
heidi_reed@oxy.com

During the Construction Activity: **Gas/Oil Field Exploration and/or Development**
to discharge stormwater from the facility identified as **Cascade Creek Development**
which is located at:

13 miles north of Debeque, map in file
Debeque, Co 81630

Latitude **39/30/45,** Longitude **108/14/10**
In **Garfield County**

to: Cascade Creek -- Colorado River

Anticipated Activity begins **07/01/2005** continuing through **05/17/2007**
On **5** acres **(5** acres disturbed)

Certification is effective: **07/01/2007** Certification Expires: **06/30/2012**

Annual Fee: $245.00 **(DO NOT PAY NOW** – A prorated bill will be sent shortly.)

Adjacent Property Owners and Mineral Rights Owners Information

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

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OXY USA WTP LP

POND 13 CENTRALIZED E & P WASTE FACILITY

ADJACENT PROPERTY OWNER AND MINERAL OWNERS LIST
August 7, 2013

Adjacent Property Owners

Parcel Number: 213529100008
Chevron Texaco Property Tax
Chevron USA Inc
PO Box 285
Houston, TX 77001

Parcel Number: 216902200019
JoJo Properties
PO Box 1926
Rifle, CO 81650

Parcel Number: 216902200019
Donna Koehler
PO Box 300
DeBeque, CO 81630

Parcel Number: 216902200019
Richard, Lyle & Ned Prather
PO Box 165
DeBeque, CO 81630-0165

Parcel Number: 216904100951
Colorado River Valley Field Office
Bureau of Land Management
2300 River Frontage Rd
Silt, CO 81652

Parcel Number: 216904400003
OXY USA WTP LP
5 Greenway Plaza, Ste 110
Houston, TX 77046-0506

Parcel Number: 216910100020
JoJo Properties
PO Box 1926
Rifle, CO 81650

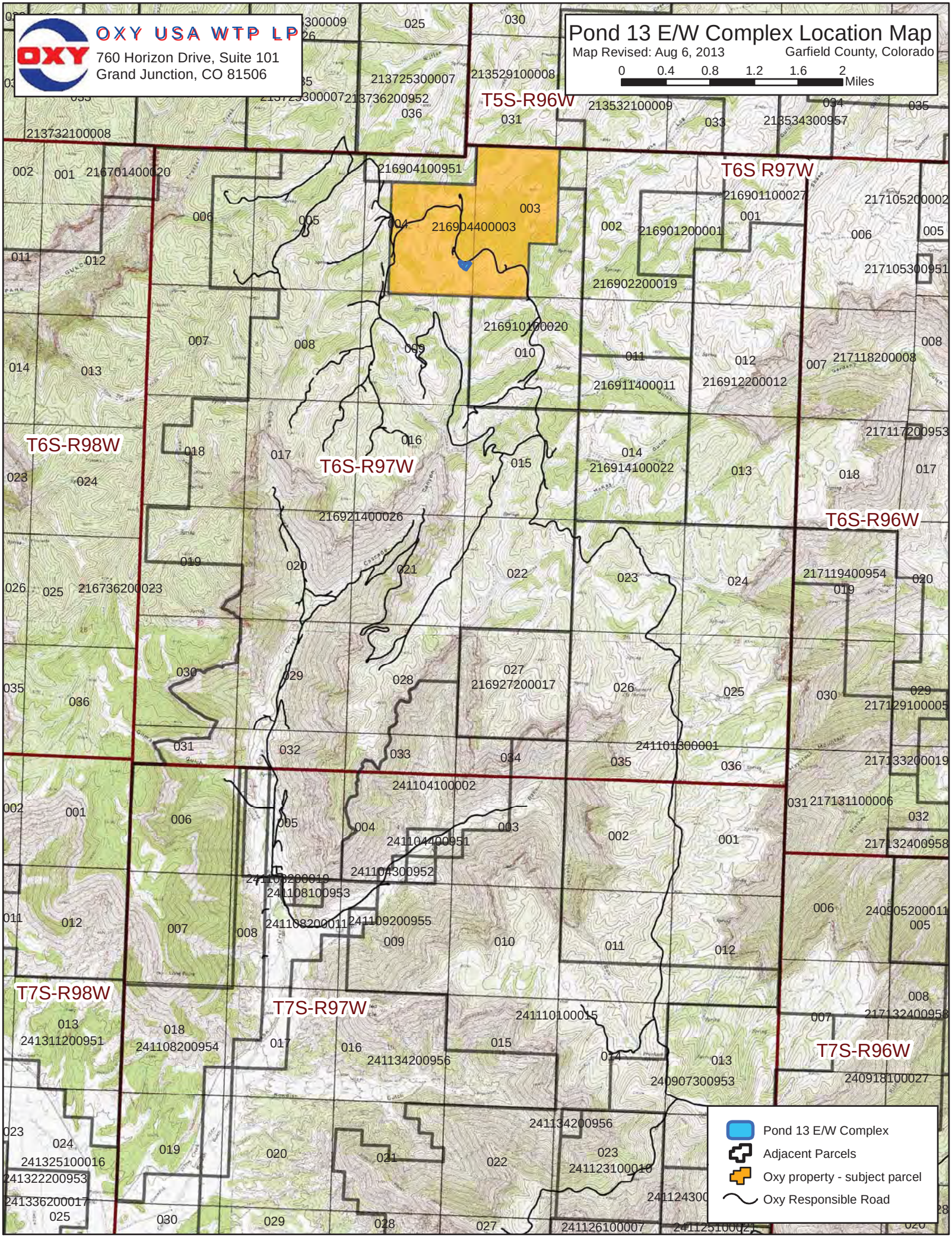
Parcel Number: 216910100020
Donna Koehler
PO Box 300
DeBeque, CO 81630

Parcel Number: 216910100020
Property Tax Department
OXY USA INC
PO Box 27570
Houston, TX 77227-7570

Parcel Number: 216921400026
Property Tax Department
OXY USA INC
PO Box 27570
Houston, TX 77227-7570

Mineral Rights Owners

OXY USA WTP LP
760 Horizon Dr, Ste 101
Grand Junction, CO 81506


OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex Location Map
Map Revised: Aug 6, 2013
Garfield County, Colorado
0 0.4 0.8 1.2 1.6 2 Miles
T5S-R96W
T6S R97W
T6S-R98W
T6S-R97W
T6S-R96W
T7S-R98W
T7S-R97W
T7S-R96W
216904100951
216904400003
216901100027
216901200001
216902200019
216910100020
216911400011
216912200012
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213532100009
213534300957
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217105300951
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217117200953
217119400954
217129100005
217133200019
217131100006
217132400958
241101300001
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241104300952
241108100953
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241108200954
241311200951
241134200956
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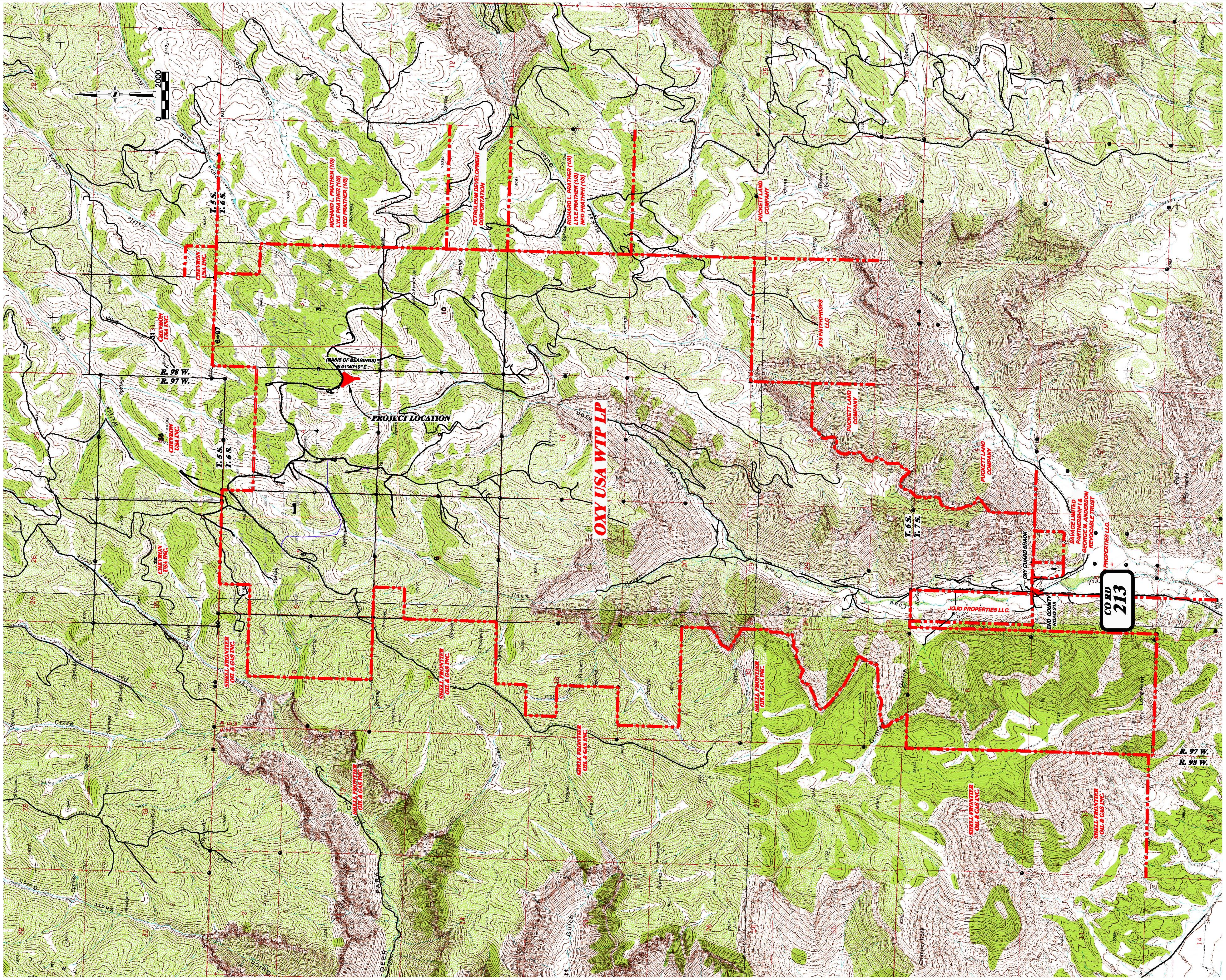
241336200017
241126100007



LEGAL DESCRIPTION:
OXY USA, INC TO OXY USA WTP LP
RECEPTION 713681, 759939, & 765804
GARFIELD COUNTY, COLORADO

TOWNSHIP 6 SOUTH, RANGE 97 WEST

SECTION 3: SE¼, SW¼, LOTS 9–16
SECTION 4: SE¼, SW¼, LOTS 9–16
SECTION 5: SE¼, W½ SW¼, E½ SW¼, LOTS 5–7, EAST 1.62 ACRES OF LOT 8, LOTS 9–16
SECTION 6: E½ SW¼, E½ SE¼, E½ W½ SE¼, W½ W½ SE¼, LOTS 13, 15, 16,18, 22–25, W½ LOT 14, W½ LOT 17 E½ LOT 14, E½ LOT 17
SECTION 8: SE¼, E½ NW¼, E½ SW¼, NE¼, SW¼ NW¼, W½ SW¼, E½ W½, E½
SECTION 9: S½ S½, N½, N½ S½, ALL
SECTION 10: W½, E½, ALL
SECTION 15: E½, ALL
SECTION 16: S½ NW½, N½ N½, SW¼, SE¼, S½ NE¼
SECTION 17: SW¼, NW¼, E½ NW¼, E½, W½ NW¼
SECTION 18: SW¼ NE¼, SE¼ NW¼, W½ SE¼, N½ NE¼, SE¼ NE¼, E½ SE¼
SECTION 19: NE¼, E½ NW¼, E½ W½ NW¼, 14.76 ACRES OUT OF VALLEY AREA PORTION OF FRACTIONAL SE¼
SECTION 20: NE¼, W½, SE¼, ALL
SECTION 21: ALL
SECTION 22: ALL
SECTION 28: 165.404 ACRES OUT OF UPLAND AREA PORTION OF S½, 241.1 ACRES OUT OF THE UPLAND AREA PORTION OF N½, NW¼,NW¼
SECTION 29: ALL
SECTION 30: 149.372 ACRES OUT OF SE/LY VALLEY AREA PORTION OF FRACTIONAL SEC. 30, 0.247 ACRES LYING IN THE NE¼
SECTION 31: 117.732 ACRES OUT OF VALLEY AREA PORTION OF FRACTIONAL SEC. 31 (A PORTION OF BECKY 5 AND 6 PLACER MINING CLAIMS)
SECTION 32: LOTS 1–4
SECTION 33: 80.269 ACRES OUT OF UPLAND AREA PORTION OF FRACTIONAL SEC. 33 (PORTION OF LOTS 3 & 4)

TOWNSHIP 7 SOUTH, RANGE 97 WEST

SECTION 4: 42.701 ACRES OUT OF PORTIONS OF TRACTS 78–81 IN UPLAND AREA PORTION OF SEC. 4
SECTION 5: SUB–TRACTS A&B OF TRACT 82, SUB–TRACTS A&B OF TRACT 83, THAT PORTION OF TRACT 80 LYING IN SEC 5, THAT PORTION OF TRACT 81 LYING IN SEC 5
SECTION 6: 442.281 ACRES± OUT OF PARTS OF SEC. 6&7 CONSISTING OF 235.734 ACRES BEING THE UPLAND AREA PORTION OF SEC. 6 (PORTIONS OF TRACTS 85–87, ALL SEC. 6 LESS AND EXCEPTING UPLAND LANDS IN 235.734 ACRES UPLAND AREA PORTION OF SEC. 6 (PORTIONS OF TRACTS 85–87)
SECTION 7: 442.281 ACRES± OUT OF PARTS OF SEC. 6&7 CONSISTING OF 206.547 ACRES BEING THE UPLAND AREA PORTION OF SEC. 6 (PORTIONS OF TRACTS 88–91, ALL SEC. 7 LESS AND EXCEPTING UPLAND LANDS IN 206.547 ACRES UPLAND AREA PORTION OF SEC. 7 (PORTIONS OF TRACTS 88–91)

NOTE: ZONING DESCRIPTION – RESOURCE LANDS

LEGEND

(red dash-dot line)	OXY USA WTP LP PROPERTY LINE PER RECEPTION #759939
(black line)	EXISTING ROADS
●	FOUND SECTION & TRACT CORNER

REVISIONS

SURVEYOR'S STATEMENT

I, DAVID E. HENDERHAN, AN EMPLOYEE AND AGENT FOR D.R, GRIFFIN & ASSOCIATES, INC. STATE THE PLAT HEREON IS A CORRECT REPRESENTATION OF A TOPOGRAPHIC SURVEY MADE UNDER MY AUTHORITY COMMENCING ON APRIL 15, 2013.

COLORADO PLS No. 38109

PROJECT APPLICANT:
OXY USA WTP LP
5 GREENWAY PLAZA, SUITE 110
HOUSTON, TEXAS 77046-0506

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

OXY USA WTP LP
POND 13
LIMITED IMPACT REVIEW
SITE PLAN

T.6 S., R.97 W.
GARFIELD COUNTY, COLORADO

SCALE:1"=2000'	DRAWN BY: RAS
DATE: 4/16/2013	CHECKED BY: DEH
JOB No.: 19810	PLOT SCALE: 1"=2000'
APPROVED:	SHEET 1 OF 2

NRCS Soils Report

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

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United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

Oxy Pond 13 E/W

May 29, 2013

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:2,150 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/29/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties (CO682)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
55	Parachute-Irigul complex, 5 to 30 percent slopes	7.4	69.9%
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes	3.2	30.1%
Totals for Area of Interest		**10.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties

55—Parachute-Irigul complex, 5 to 30 percent slopes

Map Unit Setting

Elevation: 7,600 to 8,800 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 36 to 40 degrees F
Frost-free period: 65 to 90 days

Map Unit Composition

Parachute and similar soils: 60 percent
Irigul and similar soils: 30 percent

Description of Parachute

Setting

Landform: Mountains
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from shale and siltstone and/or residuum weathered from sandstone and shale

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Mountain Loam (R048AY228CO)

Typical profile

0 to 10 inches: Loam
10 to 25 inches: Very channery loam, extremely channery loam
25 to 29 inches: Unweathered bedrock

Description of Irigul

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, shoulder, toeslope, summit, footslope
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Residuum weathered from sandstone and shale

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.3 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Loamy Slopes (R048AY303CO)

Typical profile

0 to 6 inches: Channery loam
6 to 13 inches: Very channery loam
13 to 17 inches: Unweathered bedrock

56—Parachute-Irigul-Rhone association, 25 to 50 percent slopes

Map Unit Setting

Elevation: 7,600 to 8,800 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 36 to 40 degrees F
Frost-free period: 65 to 80 days

Map Unit Composition

Parachute and similar soils: 35 percent
Irigul and similar soils: 30 percent
Rhone and similar soils: 20 percent

Description of Parachute

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale and/or residuum weathered from siltstone

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Brushy Loam (R048AY238CO)

Typical profile

0 to 10 inches: Loam
10 to 25 inches: Very channery loam, extremely channery loam
25 to 29 inches: Unweathered bedrock

Description of Irigul

Setting

Landform: Hills
Landform position (two-dimensional): Toeslope, summit, footslope, backslope, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and shale

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.3 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Loamy Slopes (R048AY303CO)

Typical profile

0 to 6 inches: Channery loam
6 to 13 inches: Very channery loam
13 to 17 inches: Unweathered bedrock

Description of Rhone

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, shoulder, summit, footslope
Landform position (three-dimensional): Mountainflank, side slope

Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium derived from sandstone and shale and/or residuum weathered from sandstone and shale

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Brushy Loam (R048AY238CO)

Typical profile

0 to 10 inches: Loam
10 to 39 inches: Channery loam
39 to 55 inches: Very channery loam
55 to 59 inches: Unweathered bedrock

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Corrosion of Concrete

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens concrete. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the concrete in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."

Custom Soil Resource Report
Map—Corrosion of Concrete

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- High
- Moderate
- Low
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:2,150 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/29/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Corrosion of Concrete

Corrosion of Concrete— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties (CO682)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
55	Parachute-Irigul complex, 5 to 30 percent slopes	Low	7.4	69.9%
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes	Low	3.2	30.1%
Totals for Area of Interest			**10.6**	**100.0%**

Rating Options—Corrosion of Concrete

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Corrosion of Steel

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."

Custom Soil Resource Report
Map—Corrosion of Steel

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- High
- Moderate
- Low
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:2,150 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 5, Feb 1, 2008

Date(s) aerial images were photographed: 8/29/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Corrosion of Steel

Corrosion of Steel— Summary by Map Unit — Douglas-Plateau Area, Colorado, Parts of Garfield and Mesa Counties (CO682)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
55	Parachute-Irigul complex, 5 to 30 percent slopes	Moderate	7.4	69.9%
56	Parachute-Irigul-Rhone association, 25 to 50 percent slopes	Moderate	3.2	30.1%
Totals for Area of Interest			**10.6**	**100.0%**

Rating Options—Corrosion of Steel

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

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Geohydrology Report

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

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Form 28 - Centralized E&P Waste Management Facility
Permit Application for COGCC ID #414403 and 414404
Oxy Water Storage Facility Pond 13 E/W
NE SE Section 4, T6S, R97W, 6th P.M., Garfield County, Colorado

Rule 908.b (4)

Topography

The Oxy Pond 13 E/W Water Storage Facility consists of adjacent ponds that are being permitted as one facility (Pond 13 E/W Complex). The site is shown on the U.S.G.S. Circle Dot Gulch 7.5-minute topographic map. The water storage facility is located near the rim of Cascade Canyon approximately 15 miles north of the town of De Beque in western Garfield County, Colorado. The site is located near the center of the Piceance Basin, an elongated, irregularly- shaped structural depression in the earth's crust resulting from tectonic forces associated with the uplift of the Rocky Mountains through geologic time.

The general terrain surrounding the facility consists of rugged canyons incised into the Roan Cliffs. The present topography is the result of uplift combined with stream erosion. The erosion produced a series of high plateaus and deep valleys associated with the down cutting of Colorado River located to the south. The site is located approximately 550 feet northwest of an unnamed drainage to Cascade Canyon. The site lies at an elevation of approximately 8,600 feet above mean sea level. The elevation of Cascade Creek lies at approximately 8,200 feet or 400 feet below the site elevation.

Soils (Rule 908.b (7).A.i)

The proposed facility is underlain by soils mapped by the U.S. Natural Resources Conservation Service as the Parachute – Irigul complex, which is found on mountain sides and on ridge crests with 5 percent to 30 percent slopes, at elevations of 7,600 feet to 8,800 feet above mean sea level. The unit is about 60 percent Parachute soil and 30 percent Rhone loam. The two soils occur as areas so intricately intermingled that mapping them separately was deemed impractical at the scale used in the soil survey.

The Parachute soil is moderately deep and is well drained. It formed in residuum derived dominantly from sandstone, siltstone, and shale. Typically the surface layer consists of grayish brown loam and is about ten inches thick; while the subsoil is brown very channery loam about 15 inches thick, with rippable, fractured siltstone encountered at depths of about 25 inches. Permeability is moderate in the Parachute soil, and the available water capacity is very low. Runoff is medium or rapid, and the hazard of water erosion is moderate to very severe.

The Irigul soil is shallow and well drained and is formed in residuum derived from predominantly from sandstone or shale. Typically the surface layer is brown channery loam about six inches thick, the subsoil is very dark grayish brown loam about 7 inches thick, and siltstone is

encountered at a depth of about 13 inches. Permeability is moderate and the available water capacity is very low. Runoff is medium or rapid, and the hazard of water erosion is moderate to very severe.

According to the Soil Survey the Parachute and Irigul soils are listed as “severe” for shallow excavations due to slope, and shallow depth to bedrock. A ‘severe’ limitation indicates that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. In this case the ponds have been designed with synthetic liners and engineered to overcome these limitations. Since this application is to convert an existing production pond into a Centralized E&P Waste Management Facility, no proposed Facility structures, access roads, or surface water diversion structures will be required. The Facility has been constructed to contain 121,480 barrels of produced water which does not include the required two feet of freeboard, 68,010 barrels for Pond 13 East and 53,470 barrels for Pond 13 West. The Facility utilizes a 60-mil high-density polyethylene (HDPE) liner and a geocomposite base liner to provide sufficient bedding material for the Facility. Once the Facility is approved by the COGCC for conversion, Oxy will install a sump and sight pipe and a second 60-mil HDPE liner. The sump and sight pipe will allow for fluid monitoring between the two HDPE liners at the Facility.

Bedrock Geology (Rule 908.b (7).A.ii)

The bedrock underlying the proposed facility is composed of the Tertiary age Uinta Formation or the Parachute Creek Member of the Green River Formation. The Uinta Formation consists of permeable, poorly sorted, fine to coarse sandstone with some siltstone and mudstone, becoming more coarse-grained and permeable toward the top of the formation. The Uinta Formation and the Parachute Member of the upper part of the Green River Formation comprise the Uinta – Animas aquifer in the Piceance Basin.

The Uinta Formation lies stratigraphically above the Tertiary age Parachute Member of the Green River Formation. The Parachute Creek Member consists primarily of dolomitic marlstone. Kerogen, a waxlike hydrocarbon, is present in some parts of the Parachute Creek Member in the Piceance and Uinta Basins. Marlstone containing large concentrations of kerogen is referred to as “oil shale” and is generally not as fractured and contains smaller concentrations of kerogen. Fractures and dissolution openings along fractures in the marlstone form the principal pathways for water movement in the aquifer (Robson and Banta, 1995).

Oil shale is generally less permeable and forms confining units. The Mahogany zone is an oil shale bed within the Parachute Creek Member that is an example of a confining unit found within the Piceance Basin. A saline zone in the lower marlstone of the Parachute Creek Member is found within the central part of the Piceance Basin and contains the minerals nahcolite and halite, is not extensively fractured, and forms part of the relatively impermeable lower confining unit of the aquifer (Robson and Banta, 1995). The depth to the top of the Mahogany zone in the vicinity of the site is expected to lie at an elevation of 6,000 feet.

The Garden Gulch Member, Anvil Points Member, and Douglas Creek Member of the Green River Formation and the Tertiary age Wasatch Formation forms a confining unit that separates the Uinta – Animas aquifer from the underlying upper Cretaceous Mesaverde aquifer.

Local and Regional Geologic Structures (Rule 908.b (7).A.iii)

The water storage facility is located on the northeastern limb of the Crystal Creek Anticline. The northwest trending fold system of the Crystal Creek anticlinal nose and the Clear Creek Syncline begins near the Colorado River and extends northward for approximately 30 miles into the southwestern part of the Piceance Creek Basin. A part of the Clear Creek syncline occupies the southwestern part of this area and the trace of its axis is closely parallel to that of the Crystal Creek anticline. The Clear Creek syncline is a broad shallow fold, the trace of which closely parallels the axis of the Crystal Creek anticline. The Crystal Creek anticlinal nose forms the southeastern element of an anticlinal fold that trends across the southwest part of the Piceance Basin. The fold plunges to the northwest and terminates near the western boundary of the area in a structural saddle (Hail, 1992). The anticline is somewhat asymmetrical and has steeper dips on its southwest limb of about 200 feet per mile and gentler dips on its northeastern limb of about 65 feet per mile (Hail, 1992).

No major faults are present in the project area. Two small groups of normal faults are present in the southern extent of the Roan Plateau with one set approximately 15 miles northeast and a second smaller group about 20 miles northwest of the project site (Hail, 1992).

Geologic Hazards (Rule 908.b (7).A.i)

There are no major faults in the central Roan Plateau area (Hail, 1992). Minimal seismic activity near the proposed disposal facility has occurred in recent geologic time. One earthquake of magnitude greater than 5.0 occurred in Garfield County since the early 1960s when proper instrumentation was implemented in the state of Colorado. The epicenter of this earthquake was approximately 17 miles southeast of the project site. A second recorded earthquake greater than 5.0 occurred in Rio Blanco County with an epicenter about 20 miles northwest of the project site. Mesa County has historically experienced few earthquakes. The USGS has rated Mesa County as having low to moderate earthquake hazard, although no specific seismic study has been done in Mesa County.

According to the Colorado Geological Survey, no Quaternary-age faults are present in the Roan Plateau area (Widmann and others, 1998). However, the Geologic Map of Colorado (Tweto, 1979) shows northeast-southwest trending normal faults exist in the Cretaceous bedrock near the Douglas Creek Arch and the western edge of the Piceance Basin. In addition, a series of normal faults trace along the eastern Piceance Basin boundary near the Grand Hogback to the east.

Although faults are not always visible at the surface, this does not preclude the chance of an earthquake happening in the area at some point in the future. According to the Colorado Earthquake Hazard Mitigation Council (2008), "Earthquakes can also occur on faults that do not

rupture the ground surface or on faults that are not yet recognized as being hazardous. These so called “random” earthquakes are considered in most hazard analyses to help account for faults that are not apparent at the earth’s surface."

No surficial geologic hazards (landslide, mudflow, fan) or soils hazards have been mapped in the immediate vicinity of the proposed disposal facility. The site is not located in an area mapped as a floodplain hazard by the Federal Emergency Management Agency (FEMA). However, because of the natural slope above the property within the northeast-to-southwest oriented drainage, overland flow is possible in the event of an extreme precipitation event. Although records of extreme rainfall events are unavailable for locations on top of the Roan Plateau, climate records since the mid-20th century indicate that the record 24-hour rainfall amounts at Grand Junction, Palisade, and Parachute have not exceeded 2 inches (Western Regional Climate Center, 2011). The duration of these events within a 24 hour period is not known, and it is possible that a short burst of intense rainfall event could cause local overland flow in the watershed that encompasses the project site if a precipitation rate exceeds the infiltration rate of the watershed soils.

The primary limitations for shallow excavations are based on the slopes and severe seepage. Consideration will be given to the design and construction of this facility to ensure that slopes are graded appropriately to minimize the potential for cutback caving. The suitability of the soils in the project area is identified as being somewhat to very limited in regard to the construction of ponds and embankments. The limitations identified are primarily applicable to unlined water impoundments. Consideration will be given to design and construction characteristics related to the area soil thickness and depth to bedrock to mitigate these limitations. Consideration also will be given to the design and operation of the high density polyethylene (HDPE) liner system for the impoundments, which will mitigate potential seepage and leaks.

Surface Water Features (Rule 908.b (7).B.i)

Surface water features within two miles of the project site include Cascade Canyon located approximately 1,640 feet to the southwest of the water treatment facility, and Little Creek approximately 1,624 feet to the northeast. The site lies on a drainage divide between Cascade Creek to the southwest and Little Creek to the northeast. If a produced water spill were to occur and leave the site, it is expected that it would flow toward Cascade Canyon. Oxy USA WTP had another permitted pit named the MCM #83-92 Pit (COGCC facility ID #273647) located approximately 1,130 feet to the north. The MCM #83-92 pit is shown as being closed on the COGCC GIS database.

The site is shown on the USGS 1:24,000 topographic map (Circle Dot Gulch Quadrangle). Cascade Creek has perennial flow, although no flow records are available to determine the flow conditions in these drainages. There are no springs shown in Section 4, Township 6 South, Range 97 West. However, there are springs shown in adjoining Section 3, Section 5, Section 9 Section 10, Township 6 South Range 97W, and in Section 36, Township 5 South, Range 97 West, of the 6th Principal Meridian. These springs are all located at elevations of less than 8,400 feet and most are closer to an elevation of 8,200 feet above mean sea level.

Shallow Groundwater and Major Aquifers (Rule 908.b (7).B.ii)

Shallow groundwater is not expected to occur in close proximity to the site due to the site being located on a prominence of Cascade Canyon at an elevation of approximately 8,600 feet. Cascade Canyon is the nearest surface water and lies at elevations of 8,200 feet to 8,400 feet.

Major aquifers in the area consist of the Uinta – Animas aquifer, and according to published geologic maps, the bedrock exposed at the surface consists of the Uinta Formation. The Uinta – Animas aquifer in the Piceance Basin consists of the Uinta Formation and the Parachute Creek Member of the Green River Formation. Much of the intergranular space in the sandstone and siltstone is filled by sodium and bicarbonate cements; however, fractures are numerous and produce substantial permeability.

Water Wells within the Site Boundary (Rule 908.b (7).B.iii)

According to the COGCC website and the Colorado Division of Water Resources, there are no permitted water wells within Section 4, Township 6 South, Range 97 West. There are no permitted water wells in close proximity to the site.

The nearest permitted water wells are shown in Section 5, Township 6 South, Range 97 West, and are located across the Conn Creek drainage from the proposed site. These wells are identified as belonging to Williams Production RMT, Cliffs Engineering, and Cities Service Oil and Gas Corp. Some of these wells appear to have been abandoned, and others appear to be used as monitoring wells. They are all located at an elevation of approximately 8,400 feet above mean sea level.

Hydrologic Properties of Shallow Groundwater and Major Aquifers (Rule 908.b (7).B.iv)

The Uinta – Animas aquifer in the Piceance Basin receives about 24,000 acre-feet per year of recharge, primarily in the upland areas near the margins of the aquifer. Discharge is approximately equal to recharge and primarily occurs in the valleys of Piceance Creek and other tributaries to the White River or in the valley of the Colorado River and its tributaries (Robson and Banta, 1995).

The permeability of the major formations in the Piceance Basin aquifers is relatively low. Permeability of the Uinta – Anima aquifer is dependent on the location and orientation of fractures. The potentiometric surface of the Uinta – Animas aquifer generally ranges from about 100 feet above land surface to 500 feet below land surface; the surface generally is near or above land surface in valleys in areas of groundwater discharge. Larger depths to water are more common in highland areas that are remote from streams or other sources of recharge (Robson and Banta, 1995). In the Piceance Basin, the potentiometric surface ranges in altitude from about 6,000 feet to 8,500 feet, and groundwater primarily flows toward the discharge areas along Piceance and Yellow Creeks (Robson and Banta, 1995). The total dissolved solids in the aquifer range from 500 milligrams per liter (mg/L) to 3,000 mg/L.

Site Location in Relation to Nearby Floodplains (Rule 908.b (7).B.v)

The facility is not within a mapped FEMA flood hazard zone; however, it is located near the rim of the Cascade Creek canyon an area that may be prone to flash floods. The site is located within 1560 feet of Cascade Creek, but is at an elevation of 200 feet to 400 feet above the creek. The site is not subject to COGCC Rule 317B since it is not close to the segment of the Colorado River that supplies the town of De Beque with drinking water.

Existing Shallow Groundwater Quality (Rule 908.b (7).B.vi)

Baseline groundwater quality sampling should occur prior to facility construction or modification to document pre-development conditions at the project site, as data in the area is currently not available. The groundwater quality, where it is present, is expected to be relatively fresh to 'bicarbonate' type groundwater.

Potential for Impacts to Nearby Surface Water and Groundwater (Rule 908.b (7).B.vii)
Cascade Creek could potentially be adversely impacted if a release from the facility were to reach it. Shallow groundwater resources are not expected at this location. The pond will be constructed with a HDPE plastic liner to prevent seepage.

Olsson Associates, Inc.

James W. Hix
Senior Geologist

References

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Western Regional Climate Center, 2011. Accessed on the world wide web on January 19, 2011 at http://www.wrcc.dri.edu/summary/Climsmco.html.

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FIGURES

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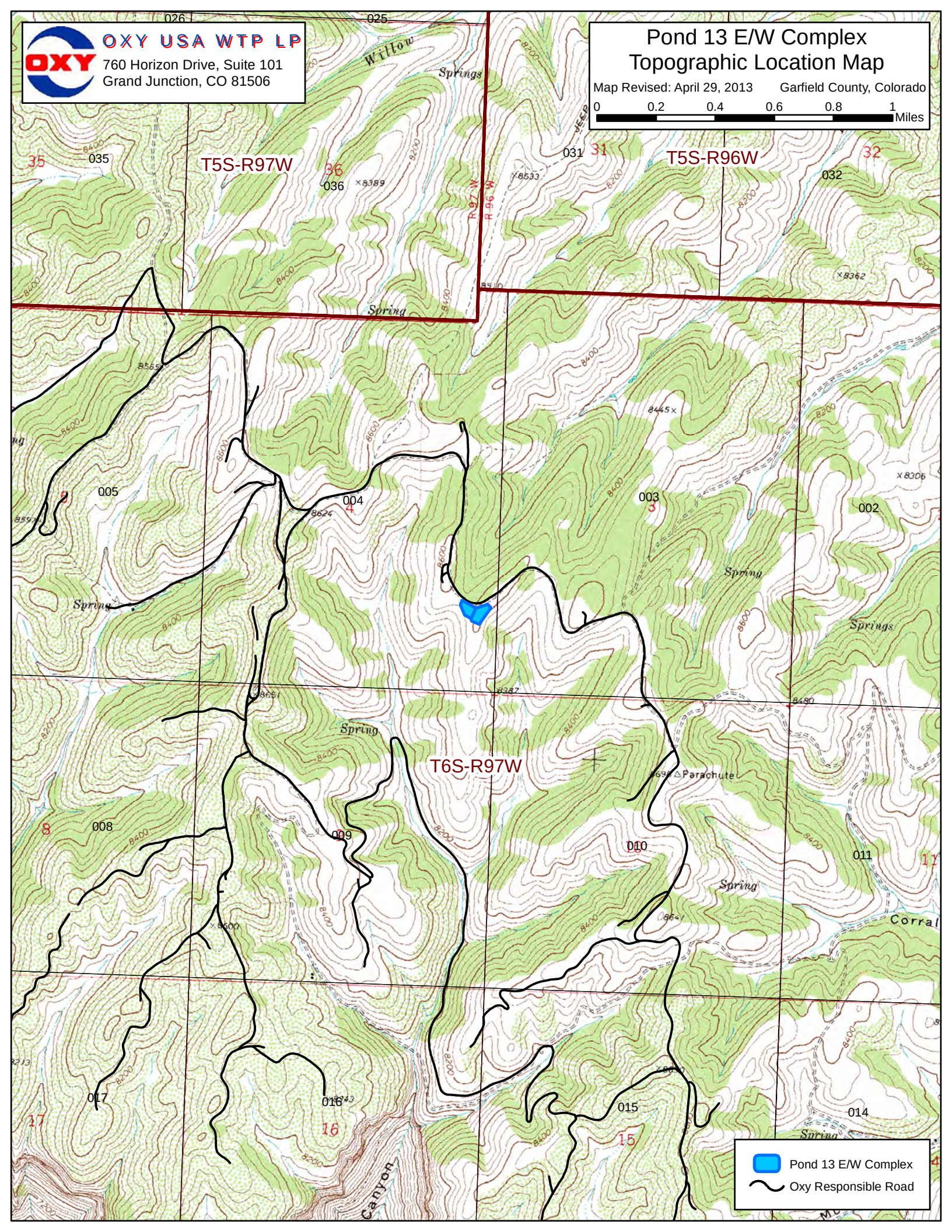
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Topographic Location Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.2 0.4 0.6 0.8 1 Miles
T5S-R97W
T5S-R96W
T6S-R97W
Pond 13 E/W Complex
Oxy Responsible Road

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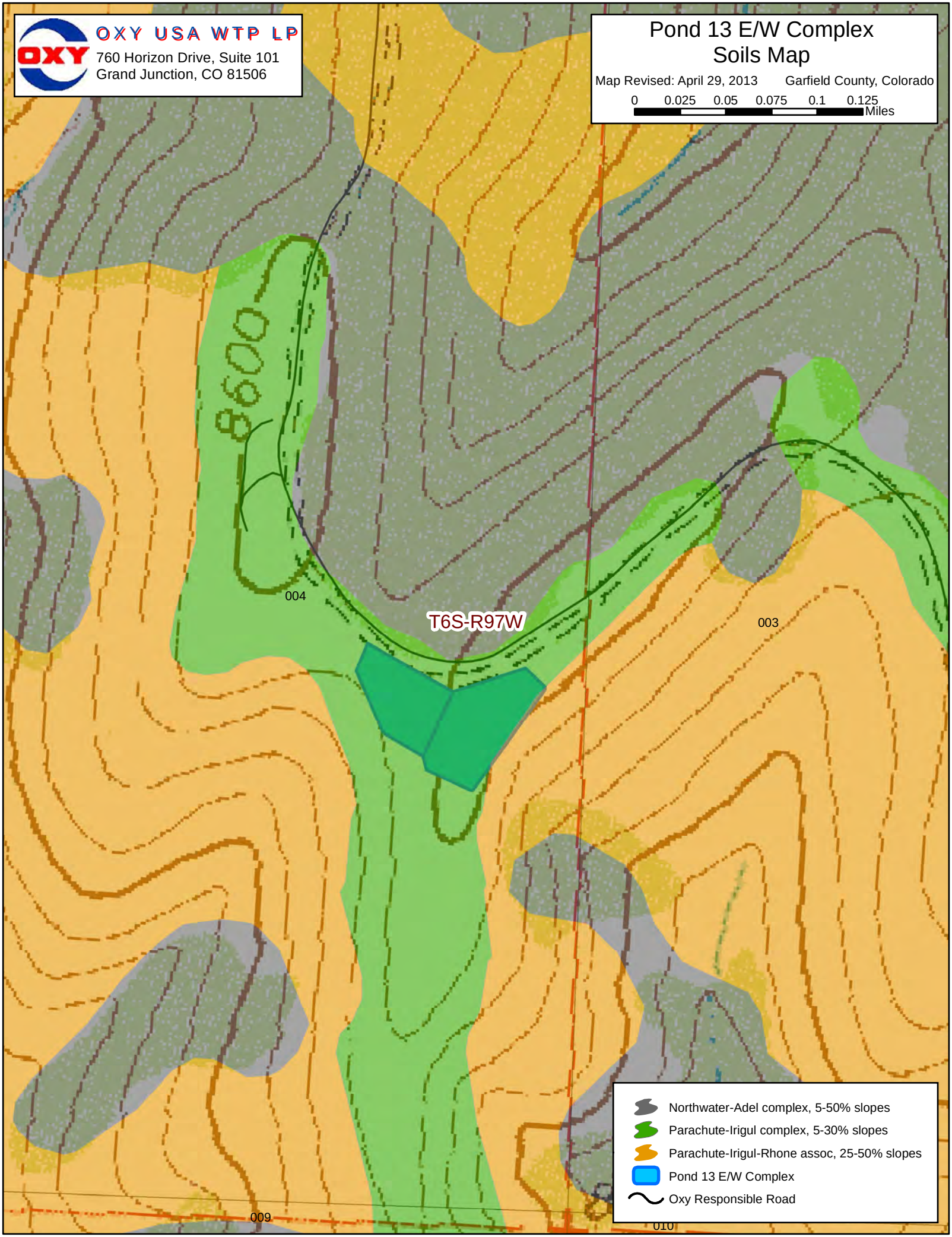
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Soils Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.025 0.05 0.075 0.1 0.125
Miles
8600
004
T6S-R97W
003
009
010
Northwater-Adel complex, 5-50% slopes
Parachute-Irigul complex, 5-30% slopes
Parachute-Irigul-Rhone assoc, 25-50% slopes
Pond 13 E/W Complex
Oxy Responsible Road

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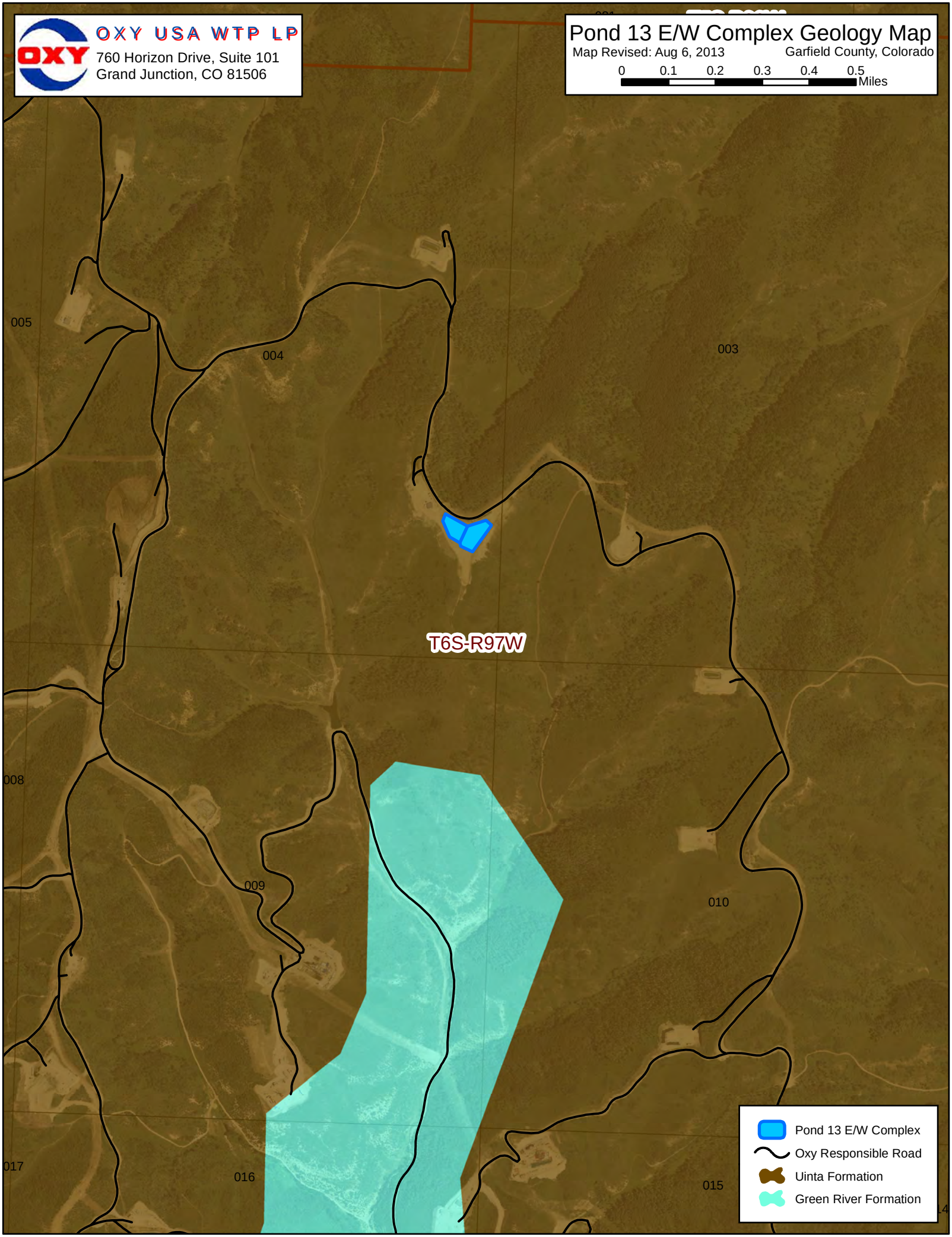
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex Geology Map
Map Revised: Aug 6, 2013
Garfield County, Colorado
0 0.1 0.2 0.3 0.4 0.5
Miles
005
004
003
T6S-R97W
008
009
010
017
016
015
Pond 13 E/W Complex
Oxy Responsible Road
Uinta Formation
Green River Formation

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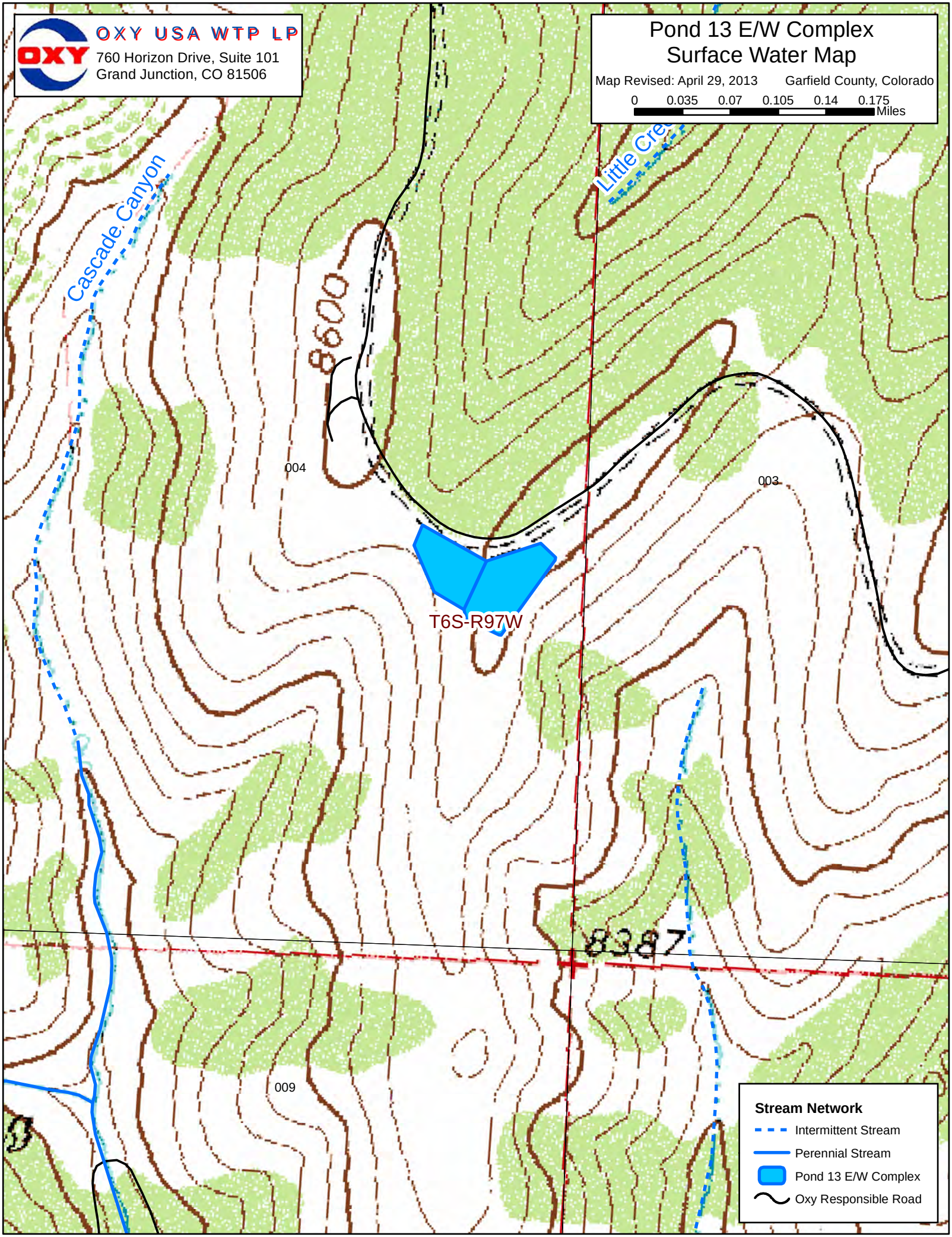
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Surface Water Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.035 0.07 0.105 0.14 0.175
Miles
Cascade Canyon
Little Cre
8600
8387
004
003
009
T6S-R97W
Stream Network
Intermittent Stream
Perennial Stream
Pond 13 E/W Complex
Oxy Responsible Road

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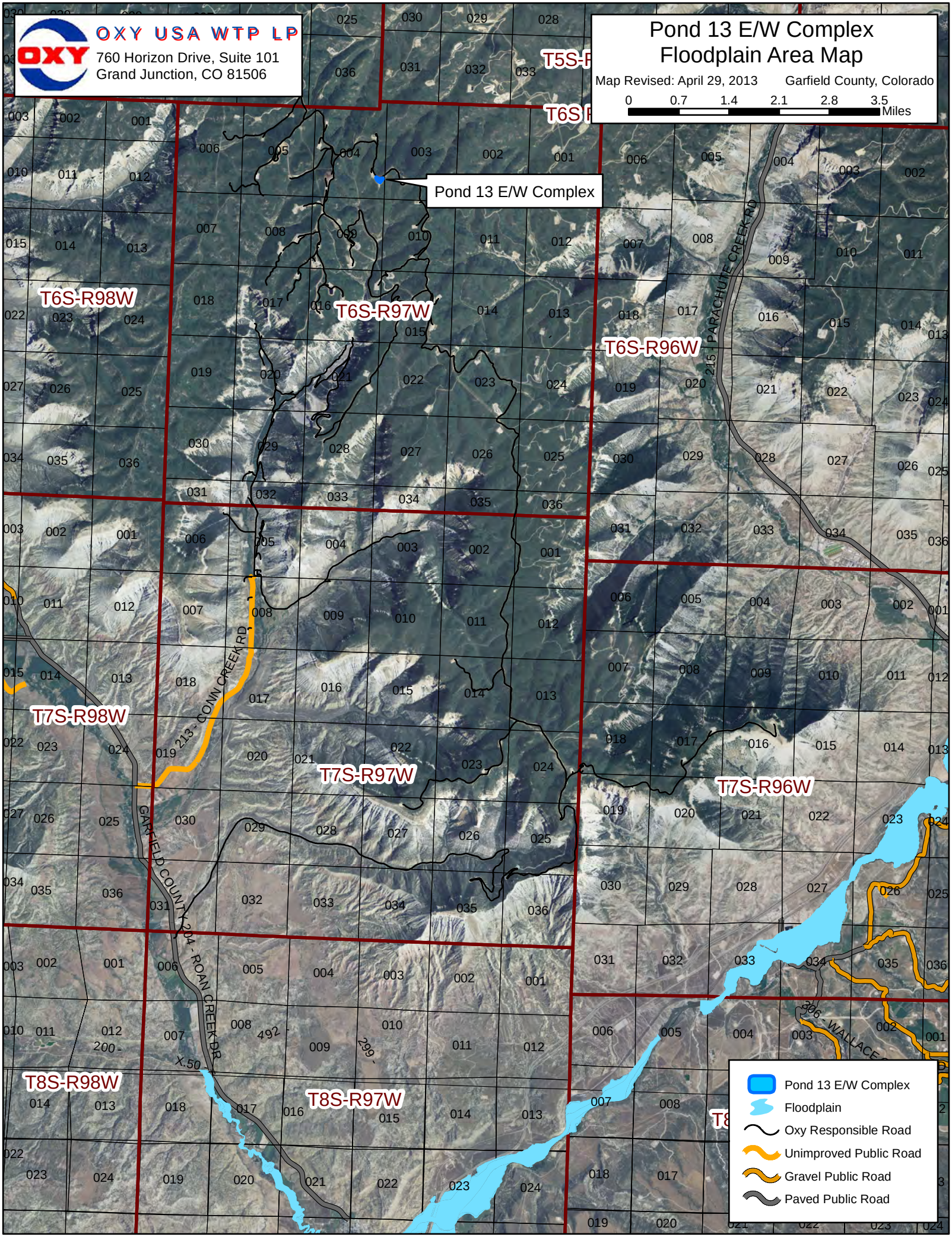
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Floodplain Area Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.7 1.4 2.1 2.8 3.5 Miles
Pond 13 E/W Complex
T5S-R
T6S-R
T6S-R98W
T6S-R97W
T6S-R96W
T7S-R98W
T7S-R97W
T7S-R96W
T8S-R98W
T8S-R97W
215 - PARACHUTE CREEK RD
213 - CONN CREEK RD
GARFIELD COUNTY 204 - ROAN CREEK DR
306 - WALLACE
Pond 13 E/W Complex
Floodplain
Oxy Responsible Road
Unimproved Public Road
Gravel Public Road
Paved Public Road

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Biological Resources Analysis

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

ERO Resources Corp.

July 15, 2013

Daniel Padilla
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506

RE: Biological Resource Memo
OXY USA WTP LP Pond 13 E/W

Dear Mr. Padilla,

On April 24, 2013, ERO Resources Corporation (ERO) conducted a biological resource survey for Pond 13 E/W in the Grand Valley Field on behalf of OXY USA WTP LP (Oxy). The survey area is located approximately 10 miles north of DeBeque in Garfield County, Colorado.

LOCATION AND PROJECT ACTIVITIES

The survey area, which includes a uniform 0.5-mile buffer around the existing project envelope, is located in southern Garfield County, Colorado (Figure 1). The legal location description of the approximate center of the project area is Sections 3 and 4, Township 6 South, Range 97 West of the 6th PM; UTM NAD 83 Zone 12N, 739145m Easting, 4381365m Northing; Latitude, Longitude: 39.548748°N, -108.216934°W; USGS Circle Dot Gulch, CO Quadrangle. Oxy is the surface owner.

The site contains an existing waste water evaporation pond with fencing for site security purposes, including but not limited to wildlife exclusion. Flagging deterrents are installed to discourage birds from accessing the pond.

Oxy proposes several site modifications to improve long-term capacity and conditions at Pond 13 E/W. There are no proposed changes to disturbance footprint or type, timing, or number of vehicles accessing the site. The site is currently manned intermittently, as needed to support completion activities; this level of staffing is anticipated to continue. Pond 13 E/W is checked once per day for routine monitoring.

The following modifications and activities are proposed within the existing previously disturbed footprint:

1. Drain, clean and remove the existing pond liner (disposal of E&P waste will be in accordance with COGCC regulations);
2. Conduct geotechnical survey work of the pond base material and make bedding improvements if recommended;
3. Install a geocomposite clay liner;
4. Install a 60 mil liner;
5. Install a leak detection system;

Denver
1842 Clarkson St.
Denver, CO 80218
303.830.1188

Boise
3314 Grace St.
Boise, ID 83703
208.373.7983

Durango
1015 ½ Main Avenue
Durango, CO 81301
970.422.2136

Western Slope
P.O. Box 932
161 South 2nd St.
Hotchkiss, CO 81419
970.872.3020

www.eroresources.com

6. Install a new primary 60 mil liner and hydro-test the liner and leak detection system; and
7. Drill three new groundwater monitoring wells;

Activity one will take up to two weeks to complete; activities 2 through 6 would take up to five weeks to complete; and activity 7 would take approximately one week to complete.

ENVIRONMENTAL SETTING

Pond 13 E/W occurs on a slightly-southern aspect at an approximate elevation of 8,400 feet above sea level (Figure 2). The existing pond location and parking/access areas consist of graveled and maintained surfaces with minimal to no vegetation. These developed areas are surrounded by aspen (*Populus tremuloides*) forest to the north, across the road, and mixed mountain scrub-shrub habitat on the other three borders. The scrub-shrub habitat is dominated by sagebrush (*Artemesia tridentata* sp.) and Gambels oak (*Quercus gambelii*), with several narrow stringers of aspen (*Populus tremuloides*) occurring intermittently along the adjacent drainages. The project area was moderately to heavily grazed at the time of the site visit, particularly toward the southern boundary. Dominant vegetation in the Pond 13 E/W vicinity is shown in Table 1.

Table 1. Vegetation observed near Pond 13 E/W.

Common Name	***Scientific Name***
Serviceberry	*Amelanchier alnifolia*
Sagebrush	*Artemisia tridentata* sp.
Lupine	*Lupinus* sp.
Indian paintbrush	*Castilleja* sp.
Gambels oak	*Quercus gambelii*
Aspen	*Populus tremuloides*
Yarrow	*Achillea lanulosa*
Wheatgrasses	*Thinopyrum* spp.
Rye	*Elymus* spp.
Crested wheatgrass	*Agropyron cristatum*
Rabbitbrush	*Ericameria nauseosa*
Mountain brome	*Bromus marginatus*

Noxious Weeds

No noxious weeds were observed at the time of the site visit. However, the site visit was performed early in the season, and germination and emergence was minimal.

TEPC Species

Table 2 lists the federally threatened, endangered, proposed, and candidate (TEPC) species with the potential to occur in the project area, as defined by the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPaC) mapper.

Table 2. TEPC species with the potential to occur in the project area.

Common Name	*Scientific Name*	USFWS Status	CPW Status	Potential to Occur?
Mammals				
North American wolverine	*Gulo gulo luscus*	PT	SE	No
Birds				
Greater sage-grouse	*Centrocercus minimus*	C	SC	No
Mexican spotted owl	*Strix occidentalis lucida*	T	ST	No
Yellow-billed cuckoo	*Coccyzus americanus*	C	SC	No
Fish				
Bonytail chub	*Gila elegans*	E	SE	No
Colorado pikeminnow	*Ptychocheilus lucius*	E	ST	No
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	T	ST	No
Humpback chub	*Gila cypha*	E	ST	No
Razorback sucker	*Xyrauchen texanus*	E	SE	No
Plants				
Ute ladies'-tresses	*Spiranthes diluvialis*	T	-	No
DeBeque phacelia	*Phacelia submutica*	T	-	No
Parachute beardtongue	*Penstemon debilis*	T	-	No

E = Federal Endangered; T = Federal Threatened; C = Federal Candidate; P = Federal Proposed; PE = Federal Proposed Endangered; PT = Federal Proposed Threatened; SE = State Endangered; ST = State Threatened; SC = State Special Concern.

Sources: USFWS 2013

There is potential for one species with ESA "candidate status" – greater sage-grouse (*Centrocercus minimus*) – to occur near the project area. According to the Colorado Oil and Gas Conservation Commission (COGCC) maps developed by Colorado Parks and Wildlife (CPW), the project area is within a greater sage grouse production area (COGCC 2013, CPW 2013; ERO Figure 3).

Most of the project area is disturbed, with graded slopes, pad areas, facilities, and steep cut/fill slopes. Areas within the mapped project area (see Figure 2 and 3) are lacking in suitable cover and bunch grasses required for sage-grouse production and forage. Some potential sage-grouse habitat occurs near the project area.

Based on ERO's site review, sagebrush stands within and surrounding the Pond 13 E/W project area are not anticipated to provide for sage-grouse life cycle needs. They are poor sage-grouse habitat for the following reasons:

1. Limited cover, with sage present belonging to a generally mature age class with relatively low recruitment;
2. Large interspaces and low cover of sage species;
3. Low percentage of bunch grasses in the understory; and
4. Hillsides are moderately to steeply sloped, and therefore do not provide optimal greater sage-grouse habitat.

Overall, the site contains relatively poor brood-rearing habitat for greater sage-grouse. The site and vicinity (see Figure 2, Project Area) was carefully reviewed and no visible evidence – scat, secal dropping, tracks, or feathers – was observed during the site visit.

General Wildlife

A majority of the Pond 13 E/W project envelope is disturbed or developed. However, many wildlife species are known to occur in the area. Most are adapted to human-caused disturbances in the region. Species may include coyote, mice rats, raccoon, fox, various snakes, hawks, ground squirrels, and lizards. Oxy's wildlife policy states that Oxy employees and contractors will not harm or harass wildlife.

A review of the COGCC/CPW maps identified no sensitive ungulate habitat within or in the vicinity of the project area.

No raptor nests or substrates were observed near the project vicinity at the time of the site visit. There also were no visual or auditory observations of raptors during the survey. Some aspen stingers are present though the trees are stunted and, based on past field observations, have low foliage cover during the growing season. The aspen stands likely do not provide suitable nesting raptor habitat and no raptors or nests were observed.

Migratory Birds

Most birds in Colorado – with the exception of grouse and the non-native house sparrows, starlings, and rock pigeons – are protected by the MBTA. The regulatory definition of the MBTA prohibits, among other things, the act [or attempt] to pursue, hunt, shoot, wound, kill, trap, capture, or collect migratory birds, and applies to both live and dead birds as well as any part of their anatomy, nests, or eggs.

However, the MBTA does not contain a prohibition that applies to the destruction of a migratory bird's habitat or the destruction of an inactive nest, as long as the nest or its contents are not collected. Nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the rules of the MBTA (Migratory Bird Permit Memorandum, USFWS, April 15, 2003).

The active nesting season for most migratory bird species in Colorado occurs between April 1 and August 31, which coincides with the peak construction season. Several state and federal agencies have adopted general species avoidance strategies, including vegetation removal outside of the breeding season, to preclude a violation of the MBTA.

IMPACT ANALYSIS

The following sections evaluate potential impacts from project implementation. The impacts can be completely mitigated; the approach to mitigate impacts is summarized in the "Recommendations" section that follows.

Noxious Weeds

No noxious weeds were observed during the site review; however, based on previous surveys, weeds likely are present. New activities, even if no new surface disturbance is proposed, can increase the distribution of noxious weeds via seeds trapped in equipment tires and crevices or personnel shoes and clothing.

Oxy monitors and treats noxious weeds seasonally, often beginning with bareground treatments in the early spring and spray applications as noxious weeds appear. Oxy tracks noxious weed treatment in compliance with Oxy's Noxious Weed Management Plan. Implementation of the Noxious Weed Management Plan minimizes the risk of the spread of noxious weeds.

TEPC Species

No federally threatened, endangered, proposed, candidate, or sensitive species occur in the project area. There are no anticipated impacts to this category of species.

General Wildlife

Temporary increases in human activity at the site may discourage use by some wildlife species; however, most species found in the project vicinity are acclimated to human presence and may temporarily alter their behavior patterns during active construction. The proposed project would not result in a permanent change in activity or any increase in the disturbance footprint; therefore no permanent impact to general wildlife habitat is anticipated.

Migratory Birds

Clearing, grubbing, and increased human activity all have potential temporary and permanent impacts to migratory birds. No new surface disturbance is anticipated to result from proposed activities at Pond 13 E/W; therefore no permanent impacts to migratory birds are anticipated. Increased human activity may temporarily discourage use of the project area by migratory birds; however this impact would be limited to the construction period. Following construction activities, birds are anticipated to resume their normal pattern of use and activity.

RECOMMENDATIONS

ERO recommends additional weed surveys and treatment be conducted prior to work at the site, in compliance with Oxy's Noxious Weed Management Plan.

Implementation of wildlife flagging, including appropriate spacing/interval, will be negotiated with COGCC as part of the Form 28 approval.

No new surface disturbing activities are proposed as part of the Pond 13 E/W activities. If surface disturbance is required, ERO recommends the following step-down approach consistent with state and federal recommendations to avoid disturbing active bird nests during construction projects:

1. Conduct habitat-disturbing activities (tree removal, grading, scraping, grubbing, etc.) in the non-breeding season (September 1 to March 31) to the extent practicable.

2. If surface disturbing work activities are planned between April 1 and August 31, remove or alter vegetation within construction footprints and road right-of-ways (ROW) prior to April 1 to discourage nesting within areas scheduled for summer construction. Removal or alteration of vegetation will also discourage nesting in areas adjacent to the construction footprints and encourage birds to nest in more suitable habitat. Vegetation altering activities can include mowing or and/or trimming to a height of six (6) inches or less, grazing vegetation to a height of six (6) inches or less, disking, herbicide application, etc.

    2a.Once vegetation has been removed and/or trimmed, appropriate measures, i.e. repeated mowing/trimming, should be implemented to assure vegetation does not grow more than six (6) inches.

Note: Implementing these BMPs demonstrates a "Good Faith" effort to avoid incidental violation of the MBTA, but does not guarantee that migratory birds will not still nest in some areas despite these efforts. Additionally, depending on the elevation, weather, and species, the active nesting season may be earlier for species such as owls and raptors, or later at higher elevations. ERO recommends checking with a biologist to confirm the active nesting season in a particular location.

No new surface disturbing activities are proposed as part of project activities. If surface disturbance is anticipated, ERO recommends that new temporary disturbance areas be reseeded with an appropriate seed mix similar to the mix shown in Table 3. Oxy will utilize the seeding mix identified in the SWMP.

Table 3. Sample Montane Seed Mix.

Common Name	***Scientific Name***	**Variety**	**Percent of Mix**	**PLS lbs/ac**
Western wheatgrass	*Pascopyrum smithii*	Arriba, Rosana	27	9
Sandberg bluegrass	*Poa secunda*	VNS	24	1
Indian ricegrass	*Achnatherum hymenoides*	Paloma or Rimrock	25	6
Bluebunch	*Pseudoroegneria*	Secar, Anatone,	24	6.5

Common Name	***Scientific Name***	**Variety**	**Percent of Mix**	**PLS lbs/ac**
wheatgrass	*spicata* var. *inermis*	P-7 or Goldar		
TOTAL			**100**	**22.5**

Please feel free to contact me at (970) 872-3020 or apowers@eroresources.com if you have any questions.

Sincerely,

Aleta Powers
Principal, Natural Resource Specialist

Attachments: Photo Log, Figures 1 through 3

REFERENCES

Colorado Department of Agriculture. 2013. Noxious Weed List. Available at: http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobheadername1=Content-Disposition&blobheadername2=MDT-Type&blobheadervalue1=inline%3B+filename%3D150%2F152%2FWeed+list+11-17-09.pdf&blobheadervalue2=abinary%3B+charset%3DUTF-8&blobkey=id&blobtable=MungoBlobs&blobwhere=1251602601181&ssbinary=true. Last Accessed: May 2013.

Garfield County. 2013. Noxious Weed List. Available at: http://www.garfield-county.com/vegetation-management/noxious-weed-list.aspx. Last accessed: May 2013.

Colorado Oil and Gas Conservation Commission (COGCC). 2013. COGCC GIS Online Wildlife Map. Available: http://cogcc.state.co.us/infosys/Maps/wildlifemap.cfm. Accessed: May 2013.

Colorado Parks and Wildlife (CPW). 2013. Natural Diversity Information Source (NDIS). Available: http://ndis.nrel.colostate.edu/. Accessed: May 2013.

U.S. Fish and Wildlife Service (USFWS). 2013. IPaC: Information, Planning and Conservation Program. Available at: http://ecos.fws.gov/ipac/wizard/trustResourceList!prepare.action. Last Accessed: May 2013.

Photo 1. Looking southwest from northwest corner of Oxy Pond 13 project area (4.24.13).

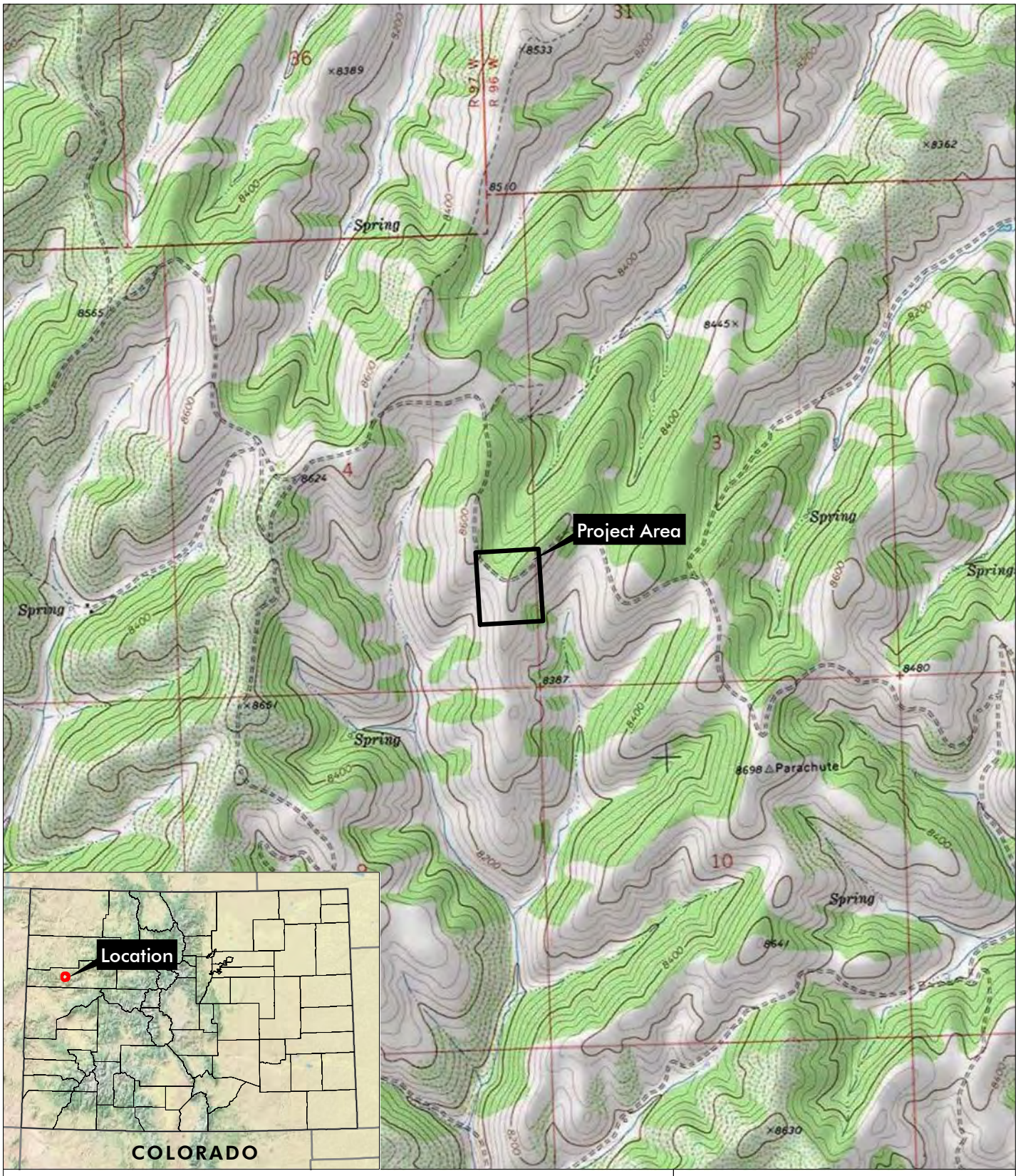
Photo 2. Looking northeast from approximate center of Oxy Pond 13 project area (4.24.13).

Photo 3. Looking east from approximate center of Oxy Pond 13 project area (4.24.13).

Photo 4. Looking southeast from approximate center of Oxy Pond 13 project area (4.24.13).

Photo 5. Looking west from southern boundary of Oxy Pond 13 project area (4.24.13).

Photo 6. Looking north from southern boundary of Oxy Pond 13 project area (4.24.13).



Oxy Pond 13

Sections 3 and 4, T6S, R97W; 6th PM
UTM NAD 83: Zone 12N; 739145mE, 4381365mN
Latitude, Longitude: 39.548748°N, 108.216934°W
USGS Circle Dot Gulch, CO Quadrangle
Garfield County, Colorado

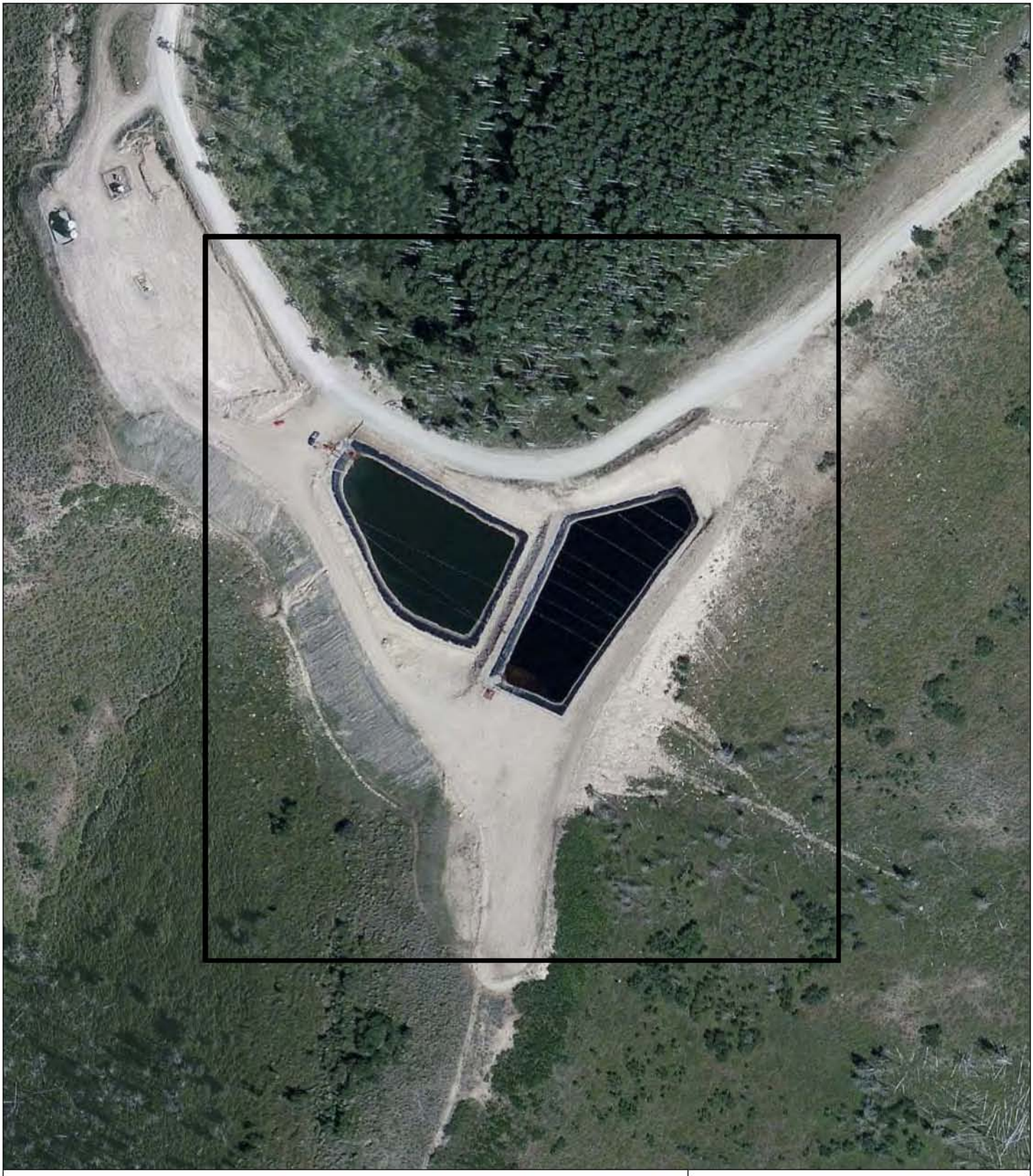
0 1,000 2,000 Feet

N

Figure 1
Site Location

Prepared for: Oxy
File: 5450 Figure 1.mxd [GS]
April 2013

ERO Resources Corp.



Oxy Pond 13

Project Area

Image Source: Microsoft, June 2010

0 100 200 Feet

N

Figure 2
Project Area

Prepared for: Oxy
File: 5450 Figure 2.mxd [GS]
April 2013

ERO Resources Corp.

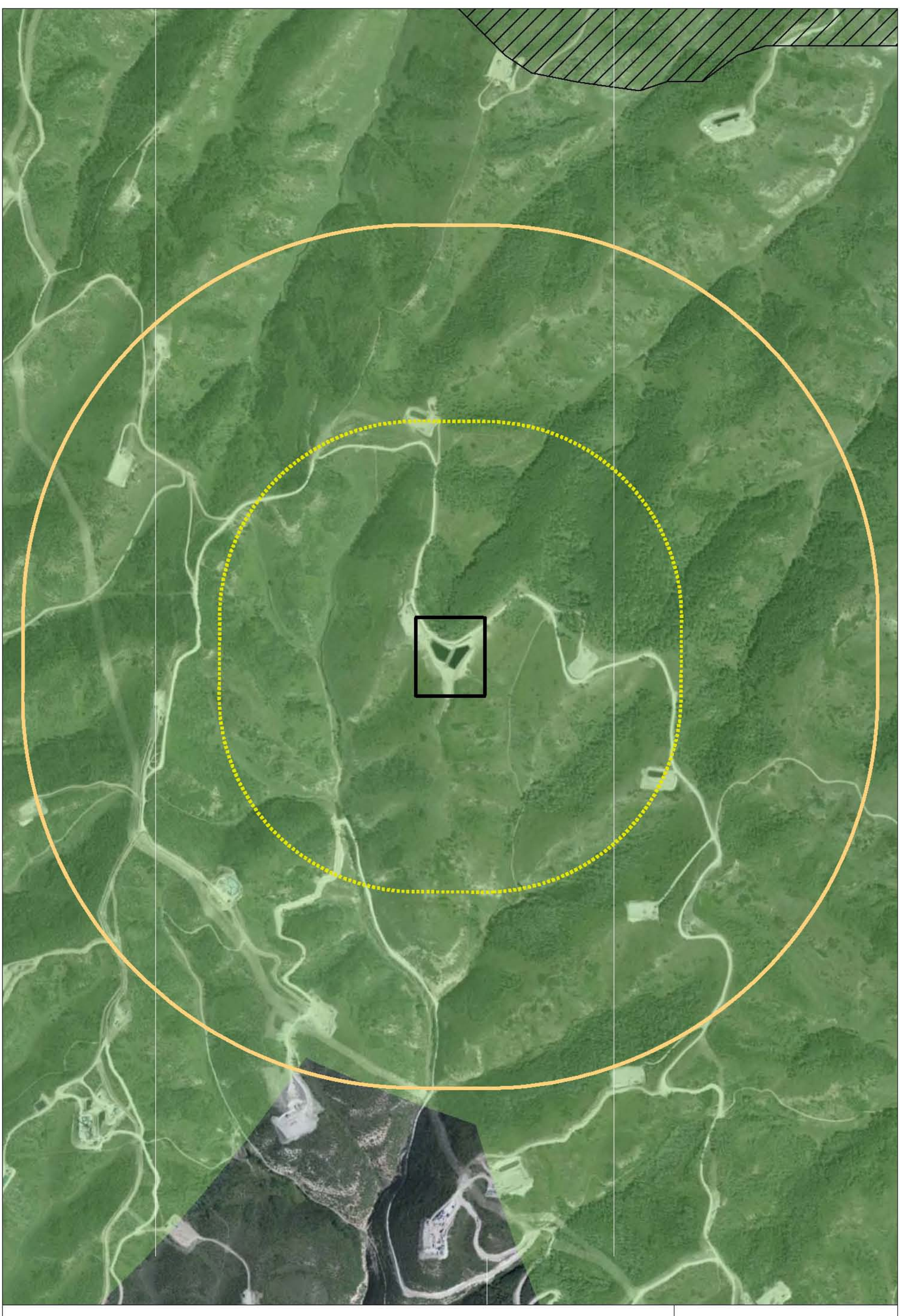


Figure 3
Natural Resources

Prepared for: Oxy
File: 5450 Figure 3.mxd [GS]
May 2013

ERO Resources Corp.

Emergency Response Plan

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

Planning~Preparedness~Prevention

Emergency Response Plan (ERP)

Mesa County Dispatch	**(970) 242-1234**
Garfield County Dispatch	**(970) 625-8095**
St. Mary's CareFlight Helicopter	**(970) 332-4923**
Poison Control Hotline	**(800) 222-1222**
CHEMTREC	**(800) 424-9300**

Piceance, Mid-Continent Business Unit
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
(970) 263-3600

24 Hour Oxy Emergency Reporting (970) 248 - 0497

rev8. 08/01/12

NOTE: The hard copy ERP Manual is an uncontrolled document. Updates to the notification list will be distributed as needed to all employees. Any questions or concerns should be directed to the HES Dept.

This plan is intended to provide general information about natural gas facilities owned and operated by Oxy and guidance for conducting emergency response operations, which cannot be handled in a routine manner. The information provided will help to increase an understanding of Oxy operations and help in providing assistance to the general public and to Oxy should unexpected conditions arise which create a concern for public safety. This document is designed to provide guidance for conducting emergency response operations and for meeting the obligations of OSHA in 29 CFR Part 1910.38-39, “Employee Emergency Plans and Fire Prevention Plans”, 1910.119(n) “Process Safety Management.”

Emergency - A sudden and urgent occasion for action; pressing necessity
-New American Webster Dictionary

Agency Emergency Contact List

NAME	PHONE
Government: Federal & State	
Bureau Land Management (BLM)	(970) 257-4800
CHEMTREC	(800) 424-9300
Poison Control Hotline	(800) 222-1222
National Response Center (NRC)	(800) 424-8802
US Army Core of Engineers	(202) 761-1001
US Forest Service (USFS) – White River	(970) 945-2521
US Forest Service (USFS) – GMUG	(970) 874-6600
Colorado Division of Wildlife (DOW)	(970) 255-6100
Colorado Oil & Gas Conservation Commission (COGCC)	(888) 235-1101
Colorado Department of Public Health & Environment (CDPHE)	(877) 518-5608
SEPC (State Emergency Planning Committee): Chuck Vale, Field Manager-Northwest Region	(970) 846-3912
Government: Local	
DeBeque Fire Department (Non-Emergency)	(970) 283-8632
Plateau Valley Fire Department (Non-Emergency)	(970) 268-5283
Garfield County Dispatch	(970) 625-8095
Mesa County Dispatch (Cascade Creek & Collbran)	(970) 242-1234
Rio Blanco County Dispatch	(970) 878-9620
LEPC Cascade Creek (Local Emergency Planning Committee): Chris Bornholdt, Garfield County Emergency Manager	(970) 945-0453
LEPC Collbran (Local Emergency Planning Committee): Andrew Martsolf, Mesa County Emergency Manager	(970) 244-1763
St. Mary's CareFlight Helicopter	(970) 332-4923
Operations	
Oxy 24 Hour Emergency Hotline	(970) 248-0497
DCP Plant Gas Control	(970) 487-3607 (303) 478-4256
Enterprise Gas Control 24 Hr.	(800) 331-3032 (800) 546-3482
Kinder Morgan Compressor Station Gas Control	(877) 335-3680
Questar Pipeline (Emergency / Gas Leak)	(800) 300-2025
HRL Compliance- Emergency Response /Clean-up	(970) 260-1576 (970) 261-2015
Critical Contractors	
OUSTABOUT/DIA Chris Marx	(970) 283-5706 (970) 261-2911
KNOWLES Mike Knowles	(970) 216-5664
ROAD MAINTENANCE- DIA Chris Marx	(970)283-5706

Table 1: Agency Emergency Contact List

*NOTE: **DO NOT USE "911" from a satellite phone. You will not be able to reach a local dispatcher.***
In many of our work areas, cell phones will not connect with a local dispatch. The above numbers can be used from any phone and will reach our immediate response teams. It is very crucial that each individual follows this procedure to ensure an appropriate response time of the emergency personnel.

Table of Contents

Introduction To The Piceance, Mid-Continent Business Unit (MCBU)

Oxy owns and operates natural gas exploration and production fields, covering approximately 129,000 net acres. The two fields operated by Oxy, the Cascade Creek Field and the Collbran Field, are both located within Garfield and Mesa Counties, Colorado, respectively. This operation includes +500 producing wells with associated production equipment and structures, several miles of natural gas and water gathering lines, satellite compressor stations and large compression facility. The office located in Grand Junction, Mesa County, Colorado serves as the support office for Piceance development. The business unit headquarters and additional support to Piceance operations is located in Houston, Texas.

Most of the Oxy Piceance area operations in Garfield and/or Mesa County are located in rugged terrain, away from public access or direct influence. The enclosed maps show the general route of the field roads, well-site locations and major above-ground facilities.

Natural gas is a safe, clean, dependable fuel used in millions of homes for cooking, heating, cooling and drying. It is also used by many commercial and industrial customers. Although typically safe to us, natural gas is an energy source and must be properly handled and does require a certain amount of caution when being produced and used. Natural gas is not poisonous; however, it does displace oxygen in enclosed spaces and may cause suffocation.

In its pure state, natural gas is odorless. Odorants, in low concentrations, are added when the gas enters local distribution systems for safety purposes to serve as a warning of natural gas presence. DO NOT trust your sense of smell to identify a gas leak. The most effective method used by natural gas companies to locate leaks is with an instrument designed to “sniff” or locate leaks. A pipeline leak can be indicated by the following signs: (1) blowing sound; (2) dirt being blown into the air; (3) bubbles or water being blown into the air when the pipeline is located in a water source; (4) fire emanating from the ground or burning above the ground; (5) vegetation turning brown on or near the right-of-way; (6) persistent odor associated with natural gas. Natural gas is lighter than air and will not travel or accumulate close to the ground, as will liquefied petroleum gas (LPG) or gasoline fumes. It will rise quickly and be diluted in the atmosphere unless it is trapped within an enclosure. In order for natural gas to burn, it must be combined with air to a perfect mixture. When the gas is between 4 – 14% combined with air, it will readily ignite.

Natural gas is compressible. It is compressed before entering transmission pipelines. Oxy Piceance area compressor and pipeline systems fully comply with state and federal standards for construction and operation. For production purposes, natural gas may also require the reduction and/or elimination of excess fluids and hydrocarbons. Separators and tri-ethylene glycol dehydration units are located at well locations and at the Conn Creek Compression Facility. The gas compression facility is not staffed 24 hours per day; however, emergency contacts are posted at the entry to the facility. Internal operations are monitored through electronic output with alerting capabilities 24 hours per day, 7 days per week. This facility is located on Oxy property. There are no residents within 1 mile of the facility.

Public Safety

Oxy Piceance area has operating procedures in place that are intended to protect the public and its employees from undue harm. In addition, the Company follows strict codes of compliance for the protection of public and Company property and the natural environment. When a concern for public safety is encountered within the Oxy Piceance area of operations, Oxy should be notified immediately! Oxy Piceance area employees and consultants are trained and equipped to handle unexpected conditions associated with the Company’s natural gas production, gathering and processing systems. Emergency response organizations will be utilized where necessary and to assist with the public and neighboring properties during emergencies.

Emergency Response Plan (ERP) Components

I. Pre-emergency Planning & Coordination With Outside Parties

The following procedures cover emergency response guidelines that address anticipated emergency scenarios and define training required for employees engaged in oil or gas exploration and production (E&P) operations. The degree to which this ERP will be activated will depend entirely on the nature of the occurrence. There are (3) main options Oxy will decide when implementing the ERP, from most engaged to least engaged: offensive tactics, defensive tactics, and non-intervention. Remember, if offensive and defensive tactics are not feasible, there is always the option to non-intervene. The incident commander's option must account for life safety first, the environment second, and lastly, property (Oxy or non-Oxy).

The ***Piceance ERP Manual*** will be reviewed and updated at least annually to reflect current activity and to increase effectiveness of the plan through discussions among all people involved. Each year Oxy employees are required to receive training on the ERP accompanied with real-life emergency drills, followed by a formal critique. These drills help improve the ER process, by addressing opportunities for improvement within the ERP system.

This ERP has been shared with both Mesa and Garfield County officials, including the Local Emergency Response Commission (LEPC). The plan has also been distributed to the DeBeque Fire Department and the Plateau Valley Fire Department.

II. Personnel Roles, Lines of Authority, Training, & Communication

When feasible (dependent upon emergency severity) the Incident Command System (ICS) should be established consisting of a designated and trained incident commander, with assignments given to the four main categories for proper incident management: operations, logistics, planning, and finance. The incident commander will have the overall responsibility of determining what personnel best fits each needed function.

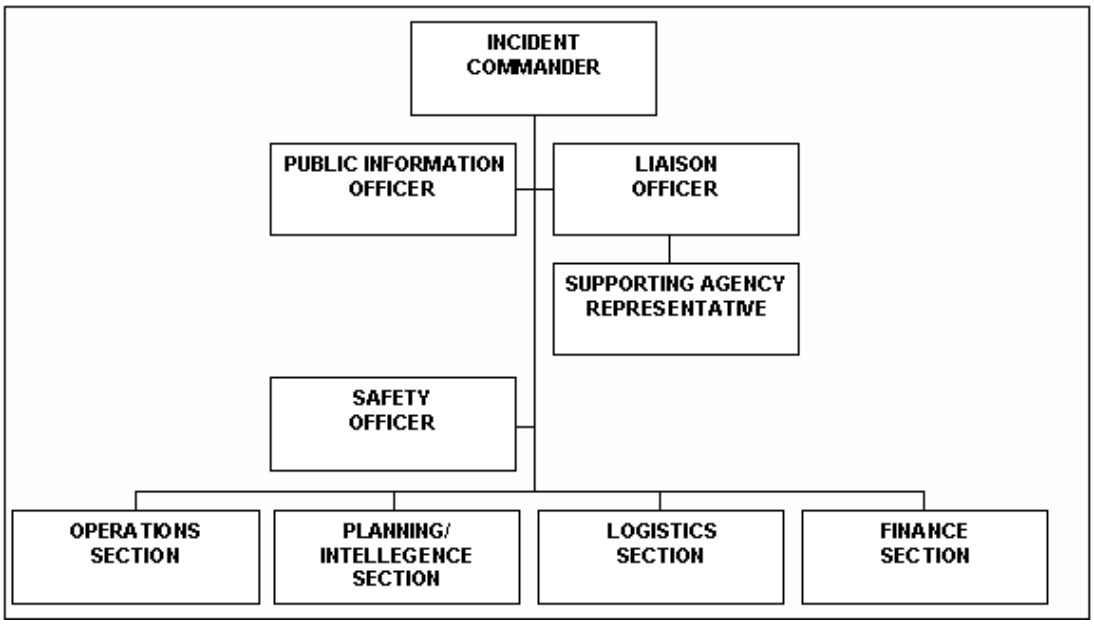


Figure 1: ICS (Incident Command System) Tree

Below is the roles & responsibilities with required training, of the main components of a proper ICS, based on *Figure 1: ICS Tree*. These established positions will vary, depending on incident severity, employee availability, and readily emergency identification.

Incident Commander (IC)

- Only an Oxy employee trained in HAZWOPER IC (24hr), Technician Level (24hr), and preferably Cleanup Ops (40hr) can assume this role
- Responsible for the command function at all times
- Overall management of the incident
- Assessment of the incident priorities
- Assess resource needs and orders
- Coordinate with outside agencies as needed
- In charge of setting up the ICP (incident command post)
- Will assign specific roles during the initial phase of the emergency

Public Information Officer (PIO)

- This individual shall have HAZWOPER or ERP awareness training
- This individual will coordinate with the *Oxy Public Affairs (See Table 3 in the Media Relations Guide* Section) prior to releasing any incident information to or associated members of the media
- Coordinate and get approval from the IC before the release of all incident-related information
- Should obtain advice/key messages from *Oxy Public Affairs* before talking to the media
- Determine staffing needs and order assistants as appropriate
- Monitor the public's reaction to information and report back to the IC

Liaison Officer (LNO)

- This individual shall have HAZWOPER or ERP awareness training
- Communicate with the IC the representing agencies (governmental, non-governmental, and private entities/stakeholders) concerns and issues
- Maintain contact of and with all involved agencies
- Prepare and include necessary information about agencies in the IAP
- Only one LNO will be assigned for each incident

Safety Officer (SO)

- This individual shall have HAZWOPER IC (24hr) & Technician Level (24hr) Training
    - This is usually an Oxy HES Specialist or designee
- Assess and communicate hazardous and unsafe situations
- Ensure a site safety and health plan is developed
- Develop safety measures or communication to assure personnel safety
- Immediately correct unsafe acts or conditions
- Maintain awareness of active and developing situations
- Prepare and include safety messages in the IAP (incident action plan)
- Assign assistants as needed

Operations Section

- This individual shall have HAZWOPER IC (24hr) & Technician Level (24hr) Training
- Directing the execution of the IAP
- Activating and executing the Site Safety and Health Plan
- Directing the preparation of unit operational plans
- Requesting or releasing sources
- Making expedient changes to the IAPs as necessary
- Reporting to the Incident Commander

Planning/Intelligence Section

- This individual shall have HAZWOPER IC Awareness Training at a minimum
- Work closely with the Operations Section and the IC in determining the best possible picture of the current situation
- Work closely with the Operations Section and the IC in determining the incident strategy and tactical objectives
- Staffing, organizing, and supervising the planning section

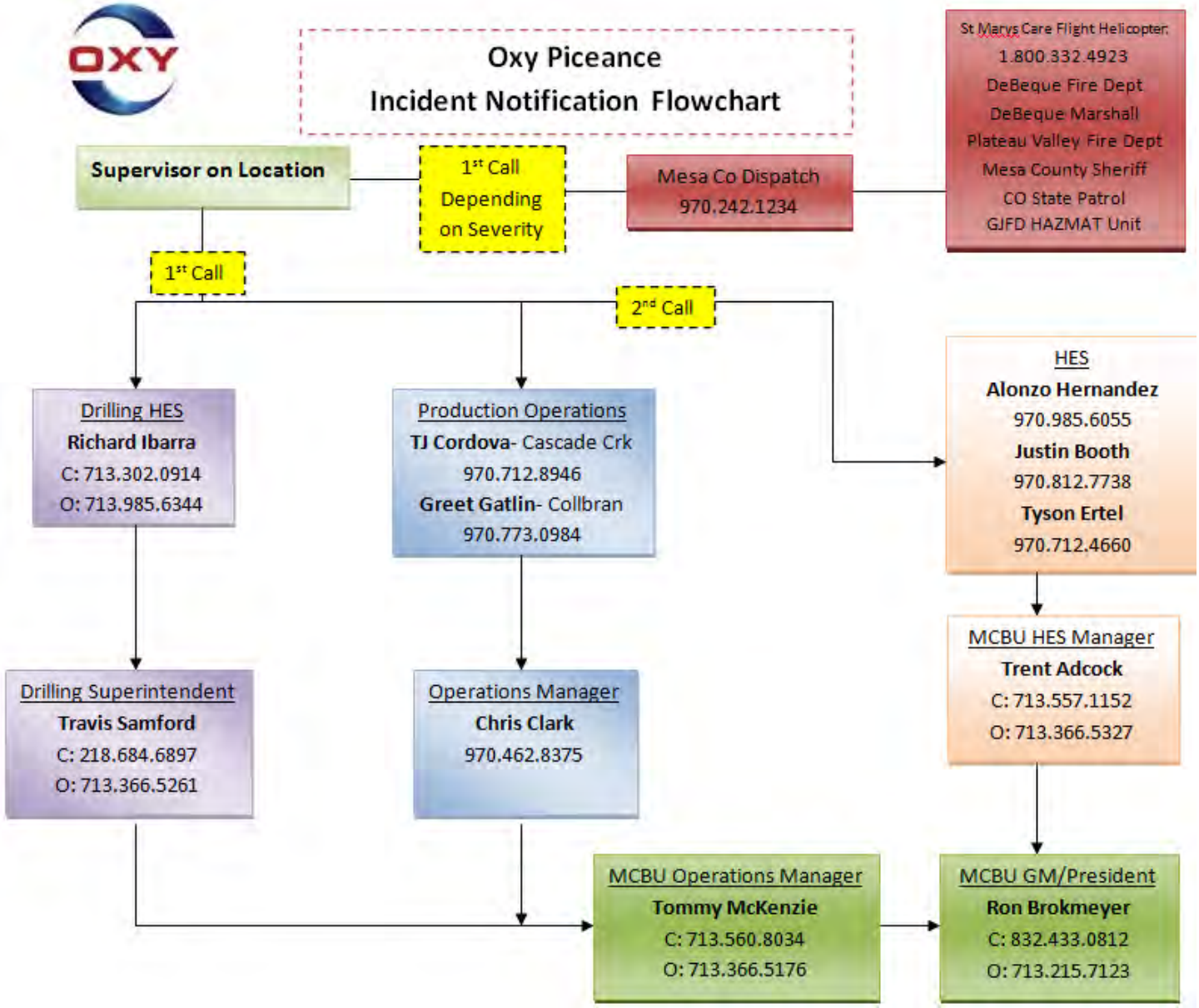
- Planning for relief and replacement of staff as appropriate
- Preparing for and participating in planning meetings
- Completing necessary ICS forms for the IAP
- Ensuring the IAP is constructing, copied, and disseminated to all incident personnel
- Communicating and implement the IAP
- Providing periodic status reports to the IC

Logistics Section

- This individual shall have HAZWOPER IC Awareness Training at a minimum
- Work closely with the IC in anticipating and providing all incident support requirements
- Order all resources through appropriate procurement methods
- Providing and establish all incident facilities, transportation, supplies, equipment, food, communications, and any medical assistance during the incident
- Staffing, organizing, and supervising the logistics section
- Planning for relief and replacement of staff as appropriate
- Preparing for and participating in planning meetings
- Completing necessary ICS forms for the IAP
- Providing periodic status reports to the IC

Finance Section

- This individual shall have HAZWOPER IC Awareness Training at a minimum
- Work closely with the IC in estimating, tracking, and approving all incident expenses
- Monitoring and coordinating funding from multiple sources
- Ensuring that all company, local, state, and federal rules and laws are complied with in regard to spending
- Staffing, organizing, and supervising the Finance Section
- Planning for relief and replacement of staff as appropriate
- Preparing for and participating in planning meetings
- Completing necessary ICS forms for the IAP
- Providing periodic status reports to the IC



III. Emergency Recognition & Prevention

In the event of an emergency resulting from an industrial accident, forces of nature, or enemy action, there are certain problems that can be anticipated. The purpose of this plan is to outline the responsibility for meeting such problems and to establish methods for handling the emergency with the least exposure to personnel, environment, and property.

For the purpose of this plan, an emergency is considered to be *any condition which requires assistance over and above that which can be supplied by the normal personnel present at the time or which cannot be handled in a routine manner*.

A first aid incident or minor fire which is limited to a small area, and which can be handled by the personnel present, does not fall under this plan. An emergency may include a medical emergency, fire, severe weather, explosion, uncontrolled release of natural gas or enemy action.

Upon recognition of an emergency it is critical that the supervisor on location follow the appropriate incident notification outlined in *Figure 1: Piceance Incident Notification Flowchart*. Any lapse within the chain of

command locally, may severely damage the level of response needed, immediate crisis communication required to Oxy-Houston personnel, and Oxy's self-image and operating reputation within the community.

Figure 2: Piceance Incident Notification Flowchart

It is essential that all personnel are familiar with the location, operation and properly trained on fire extinguishers. Select personnel (i.e., plant operator) should be thoroughly familiar with all valves necessary to isolate the source of any natural gas leak, pipeline rupture, processing facility failure or other production related emergency. The location of all utility control points should be known by plant and field personnel, i.e., electric switch boxes, water and gas control valves.

IV. Safe Distances & Places of Refuge

Depending on the emergency, personnel shall evacuate to a location upwind and uphill, if possible. Personnel will meet at the designated safe area and a head count will be taken by the supervisor or the designee to ensure that everyone is accounted for. Each field area has specific pre-determined areas of refuge with a primary mustering point and a secondary mustering point (where applicable). It is important to note that each mustering point is identified with a mustering sign and a windsock (where applicable). Personnel should look for the mustering sign when evacuation is necessary. Below is a summary of the pre-determined mustering points for each field: *(See the maps herein for aerial representation).*

Grand Junction Office:
- Primary Mustering Point → Southeast corner of the parking lot
- Secondary Mustering Point → Northeast corner of the parking lot

Cascade Creek Field
- Primary Mustering Point → Quadplex field office(s)
- Secondary Mustering Point → Corral at Conn Creek Rd (GC Rd 213) & GC Rd 204

Collbran Field
- East Plateau Area
  - Primary Mustering Point → East Plateau Field Office
- Brush Creek Area
  - Primary Mustering Point → Brush Creek Field Office
- Hell's Gulch Area
  - Primary Mustering Point → East of Compressor Station

Site-specific evacuation routes, emergency procedures, and pre-selected muster points should be identified and confirmed at each pre-job and regularly scheduled safety meeting for daily work tasks.

V. Site Security and Control

The Operations Section, in conjunction with the incident commander shall be responsible for assigning company employees or contracted security forces to provide traffic control and establish a secure outside perimeter prior to being assisted by local emergency response personnel. Additionally, the hot, warm, and cold zones must be established for effective incident control. *Figure 2* shows a generic incident layout.

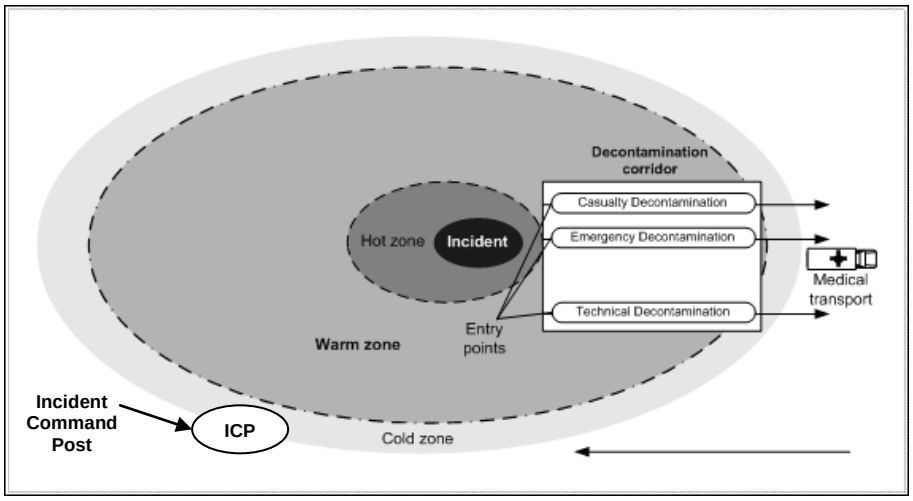


Figure 3: Typical Incident Site Layout

VI. Evacuation Routes and Procedures

The following are eight different potential emergencies that have been identified as having potential occurrence for Oxy's operations in the Piceance. It is imperative that employees familiarize themselves with each emergency procedure and varying evacuation route for each. The **RED BOX** is a quick tool to identify proper notifications, emergency tools, and forms that may need completion depending on emergency severity.

Emergency Procedure:
Fire in the Grand Junction Office
760 Horizon Drive, Suite 101

Notifications
- **911 (GJ Fire Department)**
- **Oxy Floor Warden**
- **Other Oxy Employees**

Emergency Tools
- **Nearest Fire Extinguisher(s)**
- **Nearest Manual Fire Alarm Pull Station**
- **Floor Fire & Life Safety Map**

Required Forms To Complete (post-incident)
- **Fire Report Form**

1. If safe to do so, determine the location of the fire in the building.

2. Warn others in building; activate the nearest fire alarm pull station.

3. Notify your floor warden immediately. Make sure others are aware of the danger and are evacuating the building.

4. If fire is in the incipient stage and it can be done safely, extinguish the fire. If not, proceed to step #5.

5. Leave the building quickly through the safest exit utilizing your specific floor Fire & Safety Map. ***(Do not use the elevator as an exit; the elevator is not a means of egress).***

6. Meet in designated muster point/area of refuge. **The Grand Junction personnel shall meet at the SOUTHEAST corner of the parking lot from the 760 Horizon building. You can identify the mustering area by the Oxy mustering sign .** If wind or other conditions prevent using this location as the muster area, **the *alternative muster area will be in the NORTHEAST corner of the parking lot from the 760 Horizon building.* You can identify the mustering area by the Oxy mustering sign.**

7. Make sure all Oxy Piceance area employees are accounted for. ***(Floor wardens should utilize the specific floor plan Fire & Safety maps to account for each floor)***

8. Call emergency personnel – **DIAL 911**

9. Contact Oxy Piceance area Operations Manager.

10. If warranted and safe to do so, notify adjoining businesses and/or residents.

11. Notify other company personnel to perform previously discussed & planned roles to setup the Incident Command System (ICS) which could include, secure the area, assist in first aid, assist in evacuation, guide EMS, etc.

Emergency Procedure:
Fire in the Field Office(s)
Cascade Creek

Notifications
- **Mesa Co. Dispatch (970.242.1234)**
- **Other Oxy Employees**
- **Any Contract Employees**

Emergency Tools
- **Nearest Fire Extinguisher(s)**
- **Listen for whistle/air horn (audible alarm)**
- **Trailer Fire & Life Safety Map**

Required Forms To Complete (post-incident)
- **Initial Incident Report Form**
- **Accident/Incident Statement Form**
- **Fire Report Form**

1. If safe to do so, determine the location of the fire in the building.

2. Warn others in building; activate the fire alarm .

3. Notify the office warden immediately. Make sure others are aware of the danger and are evacuating all offices.

4. If fire is in the incipient stage and it can be done safely, extinguish the fire. If not, proceed to step #5.

5. Leave the building quickly through the safest, nearest exit utilizing your specific Fire & Safety Map. Make sure you leave your office door open, to aid the floor warden in evacuation efficiency.

6. Meet in designated muster point/area of refuge. **The Cascade Creek mustering point/area of refuge is located by the field office(s). You can identify the mustering area by the Oxy mustering sign.** In the event that wind or other conditions prevent using this location as the muster area, **the *alternative mustering area is outside the Oxy gate at the Corral at Conn Creek Rd GC 213 & GC Rd 204 (look for the mustering sign).***

7. Make sure all Oxy Piceance area employees/critical contractors are accounted for.

8. Call emergency personnel – **DIAL 970.242.1234**

9. Contact Oxy Piceance Operations Manager.

10. If warranted and safe to do so, notify adjoining businesses and/or residents.

11. Notify other company personnel to perform previously discussed & planned roles to setup the Incident Command System (ICS) which could include, secure the area, assist in first aid, assist in evacuation, guide EMS, etc.

Emergency Procedure:
Medical, Fire and/or Explosion, or Wildland Fire
Cascade Creek & Collbran Fields

Notifications
- **Mesa Co. Dispatch: 970.242.1234**
- **Other Oxy Employees**
- **Other Contractors**

Emergency Tools
- **Nearest Fire Extinguisher(s)**
- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **CB Radio/Oxy Radio**
- **Vehicle (evacuation purposes)**
- **MSDS**
- **St. Mary's CareFlight Helicopter # (970) 332-4923**

Required Forms To Complete (post-incident)
- **Initial Incident Report Form**
- **Accident/Incident Statement Form**
- **Fire Report Form**

1. Survey the scene. If safe to do so, determine the nature and extent of the emergency. Determine proximity of any hazardous substances that may change the course of the emergency if exposed.

2. If fire is in the incipient stage and it can be done safely, extinguish the fire with a fire extinguisher or other extinguishing agent, fire blanket, water, etc. If not proceed to step #3.

3. If it is safe to do so, stop any unwanted release of flammables and de-energize unwanted power/energy sources, to include closing natural gas pipeline or facility valves. If not, proceed to step #4.

4. If the area is unsafe, move to a safe area. Isolate yourself and others from the area immediately and sound alarm with direct voice communication or other system as needed. Go to the applicable mustering points.

   - Conn Creek Compression Facility Alarm System
     - Utilizes combination strobe/audible combination to provide notification of egress both within the plant perimeter and inside buildings.
     - Alarm system activated on either facility ESD activation during emergency event or operator alarm system activation for notification of facility evacuation
     - Alarm system provides audible for 15 seconds, and strobes function until reset.

5. Notify Emergency Response Personnel
   DIAL → Mesa County Dispatch (970) 242-1234.
   Note: DO NOT USE "911" from a satellite phone. You will not reach a local dispatcher.

It is critical that the following information is provided when emergency services are needed in the Oxy field:

- Name and Phone Number of Caller.

- If Lat/Long is not known, provide driving directions and plan to meet responding agencies at a suitable rendezvous point and inform personnel where that will be and that someone will be at the appointed place to meet them. Give landmarks, mileage and any other information to help responders find your location.

- Be aware that it may require more than one person to guide emergency personnel. (*ambulance and fire may show up at different times)*

- Determine any hazardous substances located in or near the incident location

- Provide number of victims.

- Provide Mechanism of Injury (i.e. motor vehicle rollover, slip/trip/fall from elevated level, struck by heavy object, head-on collision, etc.)

- Describe, to the best of your ability, the Type of Injury(ies) (i.e. Amputation, burn, sprain/strain/fracture, crushing, poisoning, loss of consciousness, etc.)

- **STAY ON LINE WITH THE DISPATCHER UNTIL TOLD TO HANG UP. DO NOT GET AGGRAVATED WITH THE TIME TAKEN TO GATHER INFORMATION. THE DISPATCHER WILL SEND ASSISTANCE WHEN THEY HAVE ALL PERTINENT INFORMATION GATHERED. THEY WILL NOT SEND RESPONDERS INTO A HAZARDOUS ENVIRONMENT. DISPATCHERS ARE TRAINED TO GATHER INFORMATION FOR THE RESPONDERS AND THEY ARE YOUR LINK TO GETTING HELP AS SOON AS PRACTICAL.**

6. If the accident is severe enough, then it is feasible to call in flight support from St. Mary's CareFlight Helicopter. Refer to the *Appendix B: "How To Prepare A Landing Zone*" and to area maps (*Appendices D & F)* with designated Landing Zone locations.

7. Notify Supervisor or their designee
   Supervisor or their designee should:
   - Make sure EMS has been activated (*See Item 5)*

   - **Notify other company personnel to perform previously discussed & planned roles to secure the area, assist in first aid, assist in evacuation, guide EMS etc.**

8. Make sure all Oxy employees and contractors are accounted for by plant operations. Additional verification as needed using facility sign in log.

9. Report any incident to the Oxy Piceance Area Management Team IMMEDIATELY following *Figure 2: Incident Notification Flowchart.*

*** In some instances it may be more practical and efficient to notify the supervisor first and have them call EMS.*

Key Tips On How To Recognize Injury(ies) and Provide Initial Care:

- Activate Emergency Medical Services' Assistance **BEFORE** it is too late - Call for help early. If it looks bad, feels bad, smells bad; it is probably bad.

- **ALWAYS** activate the local ground emergency service, even if you have notified CareFlight. Many times, the helicopter cannot reach an area because of bad weather conditions or a higher priority call out. Ground ambulance will verify landing zones and can provide guidance into an area for the helicopter.

- **DO NOT CAUSE MORE HARM AND DO NOT BECOME ANOTHER VICTIM BY RUSHING INTO A HAZARDOUS ENVIRONMENT.**

- Only provide care to the level of your training.

- **DO NOT** move a victim unless there is imminent danger that could cause more harm.

- If available, communicate with CareFlight through the Emergency Services' radio channel for all landings. The frequency should be on all Oxy Piceance area radios.

Emergency Procedure:
Medical, Fire and/or Explosion, or Wildland Fire
Cascade Creek & Collbran Fields
Conn Creek Compression Facility/Cascade Creek Central Water Handling Facility/Compressor Stations

Notifications
- **Mesa Co. Dispatch: 970.242.1234**
- **Other Oxy Employees**
- **Other Contractors**

Emergency Tools
- **Nearest Fire Extinguisher(s)**
- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **CB Radio/Oxy Radio**
- **Vehicle (evacuation purposes)**
- **MSDS CD**
- **St. Mary's CareFlight Helicopter #**

Required Forms To Complete (post-incident)
- **Initial Incident Report Form**
- **Accident/Incident Statement Form**
- **Fire Report Form**

1. Survey the scene. If safe to do so, determine the nature and extent of the emergency. Determine proximity of any hazardous substances that may change the course of the emergency if exposed.

2. If fire is in the incipient stage and it can be done safely, extinguish the fire with a fire extinguisher or other extinguishing agent, fire blanket, water, etc. If not proceed to step #3.

3. If it is safe to do so, stop any unwanted release of flammables and de-energize unwanted power/energy sources, to include closing natural gas pipeline or facility valves. If not, proceed to step #4.

4. If the area is unsafe, move to a safe area. Isolate yourself and others from the area immediately and sound alarm with direct voice communication or other system as needed. Go to the applicable mustering points.

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8. Make sure all Oxy employees and contractors are accounted for by plant operations. Additional verification as needed using facility sign in log.

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*** In some instances it may be more practical and efficient to notify the supervisor first and have them call EMS.*

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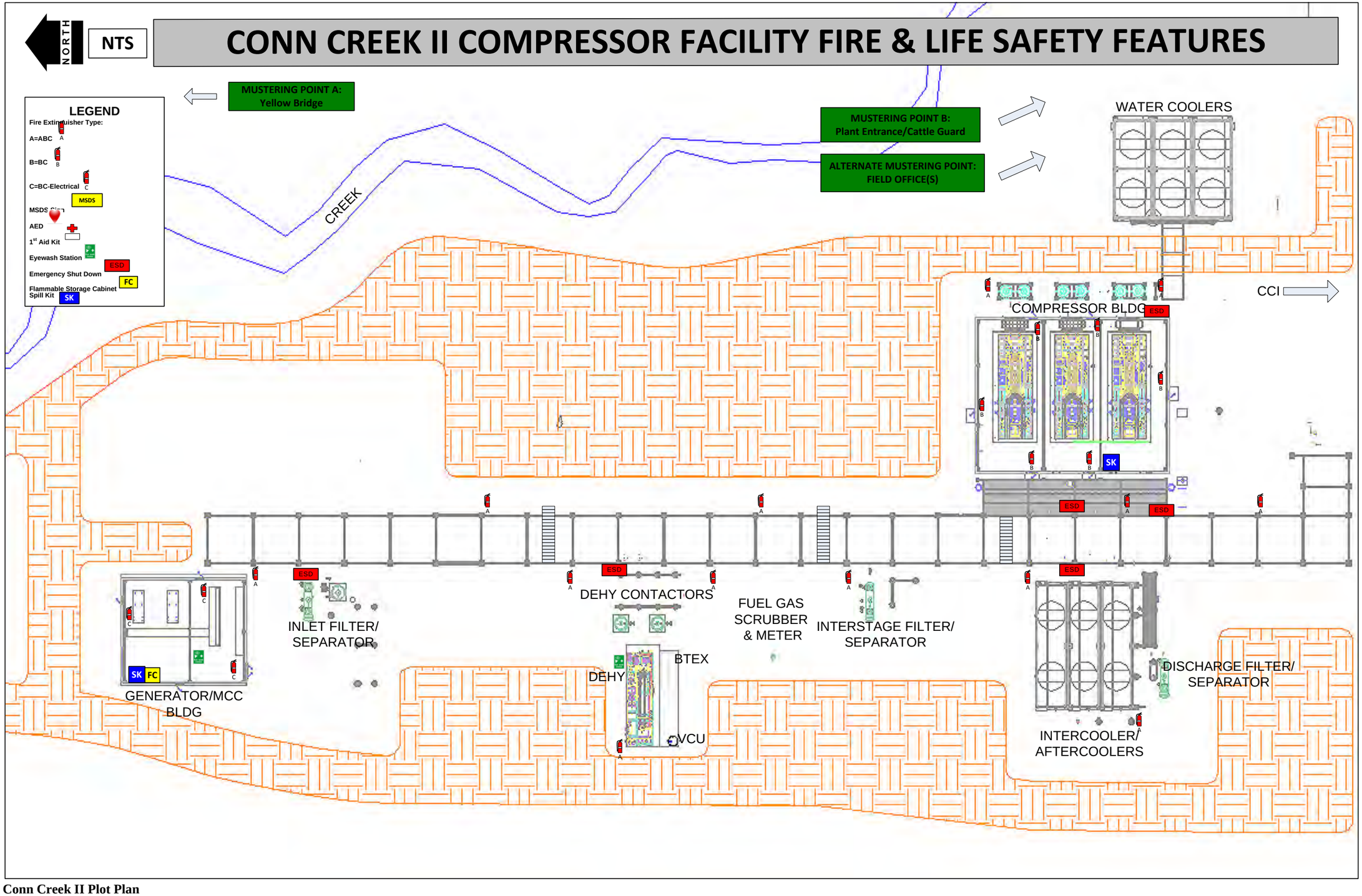
- Only provide care to the level of your training.

- **DO NOT** move a victim unless there is imminent danger that could cause more harm.

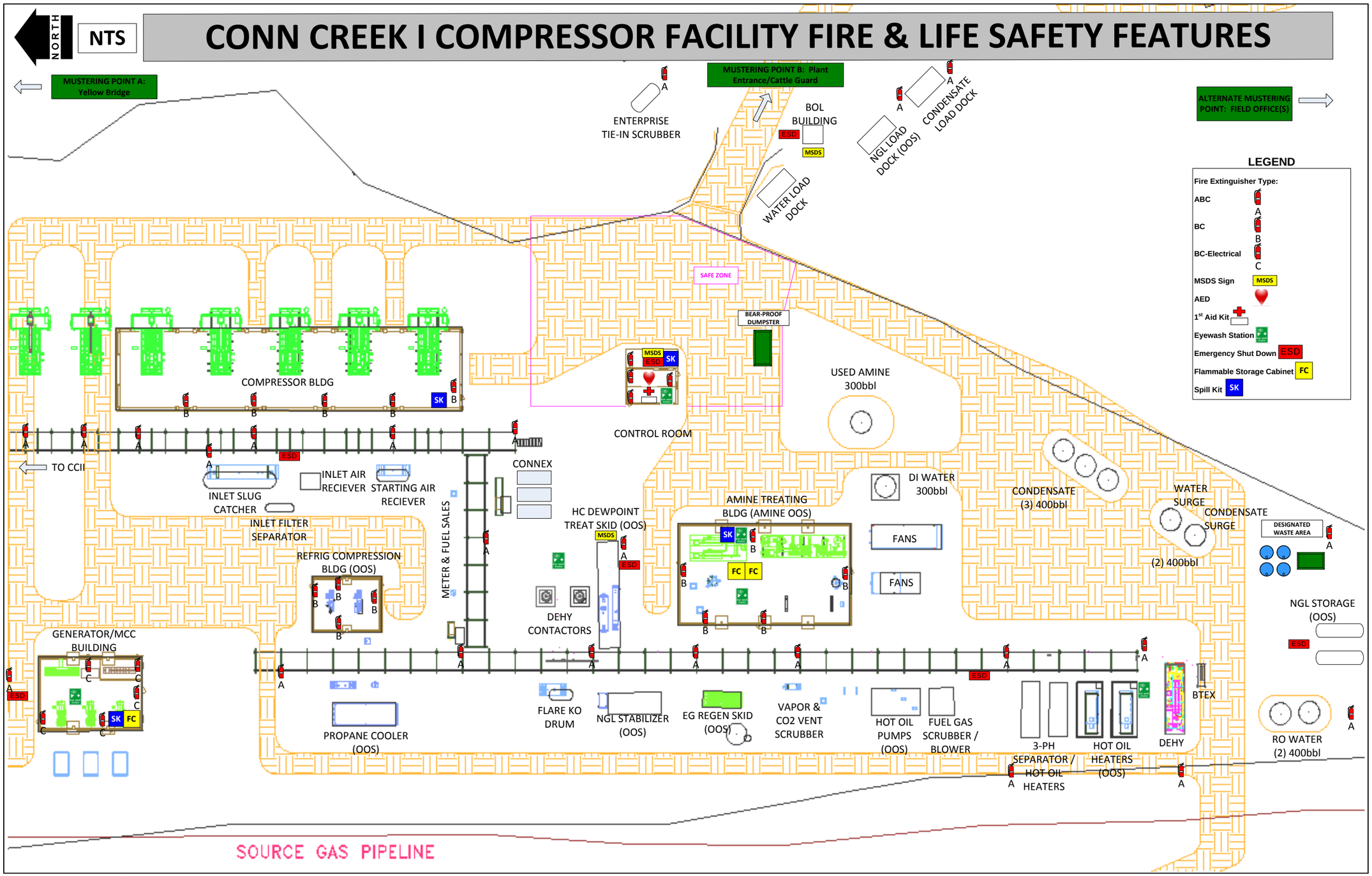
- If available, communicate with CareFlight through the Emergency Services' radio channel for all landings. The frequency should be on all Oxy Piceance area radios.

CONN CREEK II COMPRESSOR FACILITY FIRE & LIFE SAFETY FEATURES



Conn Creek II Plot Plan

CONN CREEK I COMPRESSOR FACILITY FIRE & LIFE SAFETY FEATURES



Conn Creek II Plot Plan

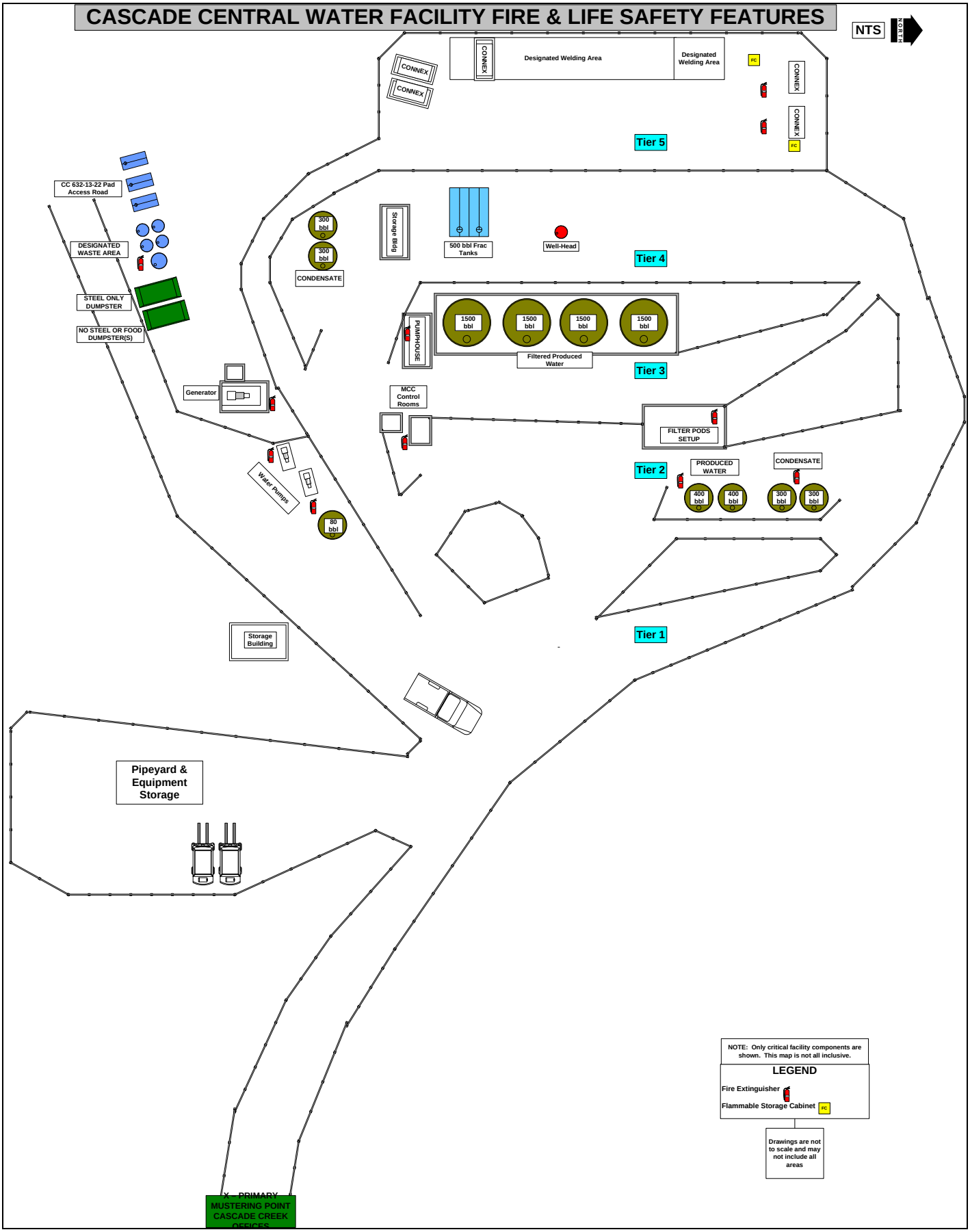


Figure 5: CC CWHF Map

Emergency Procedure:
Vehicle Collision/Incident

Notifications

- **Police *(Mesa Co. Dispatch: 970.242.1234 or 911)***
- **Supervisor**
- **HES Group**

Emergency Tools

- **CB Radio/Oxy Radio**
- **Vehicle Registration**
- **Insurance Card**
- **3-Day Emergency Preparedness Kit *(Oxy Employees)***

Required Forms To Complete (post-incident)

- **Injury Report Form (If Applicable)**
- **Driver's Accident Report Packet *(glove-box)***

OCCIDENTAL OIL AND GAS CORPORATION

Injury/Vehicle Accident Reporting

All vehicle accidents, including those that do not involve personal injury or damage to a vehicle, require the completion of a Driver's Report of Vehicle Accident immediately following the accident. Vehicle accidents occurring in leased vehicles and personal vehicles being used for company business must be reported.

If injury results from a vehicle accident, it will also be necessary to complete an injury report.

A. Employee Injury

1. You must immediately report to your supervisor any injury sustained at work, no matter how slight the injury may be. Failure to report an injury promptly could result in the Company questioning a claim at a later date.

2. Your immediate supervisor will investigate the injury and prepare the appropriate reports.

B. Vehicle Collision

1. A vehicle collision is defined as any vehicle contact or damage requiring repairs to a Company vehicle, another vehicle, injury to a pedestrian, animal, or third party or damage to Company property.

2. If you are involved in a vehicle collision:

   a. **STOP. NEVER LEAVE THE SCENE OF AN ACCIDENT.**

   b. Obtain help for injured persons. Render "GOOD SAMARITAN" first aid if you are qualified to do so.

   c. Notify police and a Company Supervisor.

   d. Obtain necessary information at the scene. Exchange only driver's license number and insurance information with the other driver, but DO NOT make commitments. Simply state that you will report the collision to your company. Any liability will be determined by the Company and our insurance carrier. DO NOT express opinions or become involved in arguments.

   e. Have witnesses provide you with their address and telephone numbers so they can be reached for follow-up statements regarding the collision.

72-285 (02-01)

OCCIDENTAL OIL AND GAS CORPORATION
DRIVER'S REPORT OF VEHICLE ACCIDENT

Report all vehicle accidents immediately on this form regardless of amount of damage or loss. Do not discuss accident with anyone except company representative or police. In case of injury to others, or serious property damage, notify your supervisor at once. Be certain to secure the names and addresses of witnesses, bystanders, or people in the immediate vicinity who may have seen the accident or heard any statement made by persons involved.

GIVE DETAILS AS FULLY AS POSSIBLE

COMPANY DRIVER

1.a) ☐ OPERATIONS b) ☐ GAS PROCESSING c) ☐ OTHER _____
2. REGION/OFFICE _____ 3. FACILITY _____
4. DRIVER _____
5. DRIVER'S HOME ADDRESS _____
6. CITY _____ 7. STATE _____
8. JOB CLASSIFICATION _____ 9. DATE EMPLOYED _____ 10. AGE _____
11. DRIVER'S SOC. SEC. NUMBER _____ 12. DRIVER'S LICENSE NUMBER _____
13. DRIVER'S LICENSE: a) ☐ OPERATOR b) ☐ COMMERCIAL
14. LICENSE RESTRICATIONS: a) ☐ Yes b) ☐ No
IN COMPLIANCE WITH THESE RESTRICTIONS? a) ☐ Yes b) ☐ No
OTHER OCCUPANT'S NAMES: _____

ACCIDENT SUMMARY

15. ACCIDENT LOCATION: _____ 16. CITY _____ 17. STATE _____
DATE OF ACCIDENT: 18. MONTH _____ 19. DAY _____ 20. YEAR _____
21. TIME: HOUR _____ a) ☐ AM b) ☐ PM
22. PURPOSE OF TRIP: _____

COMPANY VEHICLE

23. OWNER: a) ☐ OCCIDENTAL b) ☐ OTHER 24. COMPANY VEHICLE NUMBER _____
25. VEHICLE TYPE: a) ☐ AUTO b) ☐ PICKUP c) ☐ TRUCK _____ TON CAPACITY
26. YEAR: _____ 27. MAKE: _____
28. DESCRIBE DAMAGE TO VEHICLE: _____
29. ESTIMATED COST TO REPAIR COMPANY VEHICLE: _____

OTHER VEHICLE(S)

DRIVER: _____ YEAR _____ MAKE _____
OWNER'S ADDRESS: _____ CITY: _____ STATE: _____
OTHER OCCUPANT'S NAMES: _____
DESCRIBE DAMAGE TO VEHICLE: _____
30. ESTIMATED COST TO REPAIR VEHICLE(S): $_____
(ATTACH EXPLANATION IF MORE THAN ONE VEHICLE IS INVOLVED)

PERSONAL INJURIES

INJURED PERSONS' NAMES: _____
NATURE AND EXTENT OF INJURIES: _____

OTHER PROPERTY DAMAGE

DESCRIBE PROPERTY DAMAGED OTHER THAN VEHICLES: _____
31. ESTIMATED COST TO REPAIR DAMAGE: $_____

(OVER)

32. LIGHTING (Check One)
- a) ☐ Daylight
- b) ☐ Dawn
- c) ☐ Dusk
- d) ☐ Night-lighted
- e) ☐ Night-unlighted

33. ROAD CONDITIONS (Check One)
- a) ☐ Dry
- b) ☐ Wet
- c) ☐ Icy
- d) ☐ Snow

34. ROAD CHARACTERISTICS (Check All That Apply)
- a) ☐ Paved
- b) ☐ Unpaved
- c) ☐ Straight
- d) ☐ Curved
- e) ☐ Flat
- f) ☐ Hillcrest
- g) ☐ Sloped

35. ROAD DESIGN (Check One)
- a) ☐ Interstate
- b) ☐ Highway
- c) ☐ Expressway
- d) ☐ City Street
- e) ☐ Other

Number lanes____

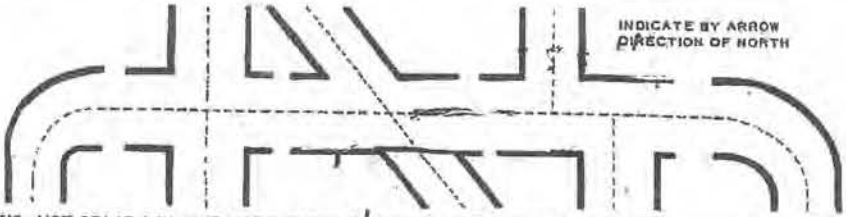
WHAT DRIVERS WERE DOING (Check One for Each)

36. COMPANY DRIVER	37. OTHER DRIVER	36. COMPANY DRIVER	37. OTHER DRIVER
a) ☐	a) ☐ Going Straight	g) ☐	g) ☐ Stopped in traffic
b) ☐	b) ☐ Overtaking, Passing	h) ☐	h) ☐ Stopped sign/light
c) ☐	c) ☐ Making Right Turn	i) ☐	i) ☐ Entering traffic
d) ☐	d) ☐ Making Left Turn	j) ☐	j) ☐ Parked
e) ☐	e) ☐ Making U Turn	k) ☐	k) ☐ Backing
f) ☐	f) ☐ Slowing	l) ☐	l) ☐ Other

CONTRIBUTING FACTORY BY EACH DRIVER (Check All That Apply)

38. COMPANY DRIVER	38. OTHER DRIVER	36. COMPANY DRIVER	37. OTHER DRIVER
a) ☐	a) ☐ Speeding	k) ☐	k) ☐ Under influence of alcohol, drugs
b) ☐	b) ☐ Traveling too fast for conditions	l) ☐	l) ☐ Inadequate brakes
c) ☐	c) ☐ Failed to yield right of way	m) ☐	m) ☐ Driver fatigue
d) ☐	d) ☐ Passed stop sign	n) ☐	n) ☐ Improper lane change
e) ☐	e) ☐ Disregarded traffic signal	o) ☐	o) ☐ Improper backing
f) ☐	f) ☐ Drove left of center	p) ☐	p) ☐ Road defect
g) ☐	g) ☐ Swerved to miss object	q) ☐	q) ☐ Mechanical defect
h) ☐	h) ☐ Following too closely	r) ☐	r) ☐ Tire defect
i) ☐	i) ☐ Made improper turn		
j) ☐	j) ☐ Driver inattention		

40. TYPE OF COLLISION: a) HEAD ON ☐ b) SIDESWIPE ☐ c) RIGHT ANGLE ☐ d) REAR END ☐
41. DAY OF WEEK: a) MON ☐ b) TUE ☐ c) WED ☐ d) THU ☐ e) FRI ☐ f) SAT ☐ g) SUN ☐
42. CITATION GIVEN TO: a) COMPANY DRIVER ☐ b) OTHER PARTY ☐ VIOLATION TYPE: _____
43. VEHICLE CARGO: _____; DATE OF LAST STATE VEHICLE INSPECTION: _____
44. ANY KNOWN DEFECTS ON VEHICLE PRIOR TO ACCIDENT? a) YES ☐ b) NO ☐ List: _____
45. WERE OCCUPANTS OF COMPANY VEHICLE WEARING SEAT BELTS? a) YES ☐ b) NO ☐
46. WERE OCCUPANTS OF OTHER VEHICLE(S) WEARING SEAT BELTS? a) YES ☐ b) NO ☐
47. HAD COMPANY DRIVER ATTENDED DEFENSIVE DRIVING COURSE? a) YES ☐ b) NO ☐



INSTRUCTIONS: USE SOLID LINE TO SHOW PATH OF VEHICLE BEFORE ACCIDENT
USE DOTTED LINE TO SHOW PATH OF VEHICLE AFTER ACCIDENT
INDICATE OUR VEHICLE A OUTSIDER'S VEHICLE B
SHOW MOTORCYCLE BY →O-O PEDESTRIAN BY →O RAILROAD BY ////

PLEASE COMPLETE THE SKETCH ABOVE SHOWING THE MOVEMENT OF THE VEHICLE(S).
PLEASE EXPLAIN HOW THE ACCIDENT HAPPENED: _____

HAVE YOU SUBMITTED REQUIRED REPORTS TO STATE AND LOCAL AUTHORITIES? a) YES ☐ b) NO ☐
WHAT WOULD YOU DO TO PREVENT A SIMILAR ACCIDENT? _____

Date of Report

Signature of Driver

Signature of Driver's Supervisor

72-285 (02-01)

Distribution: OOGC HES Department, P.O. Box 27757, Houston, TX 77227-7757

Emergency Procedure:
Severe Thunderstorm/Flash Flood

Notifications
- **Other Oxy Employees**
- **Other Contractors**
- **Other Operators**

Emergency Tools
- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **3-Day Emergency Preparedness Kit *(Oxy Employees)***
- **Oxy Radio/CB Radio**

1. During threatening weather or if severe weather has been predicted, tune to and monitor local weather radio or news broadcasts. When a severe weather warning has been issued for any location in the area, immediately notify office and field personnel that may be affected.

2. If possible, inform others to tune into local weather newscasts to stay abreast of possible conditions and/or weather changes in their area.

3. In the office:
   - Inform personnel.
   - If damage is sustained refer to emergency procedures for “Medical and/or Fire and Explosion”

   In the field:
   - If time allows, notify others of your location and situation.
   - Do not attempt to out run severe weather or flash floods.
   - Seek shelter if available, otherwise stay in vehicle.
   - Do not drive into flowing water.
   - Do not park and take shelter beneath trees.
   - Avoid exposed areas, ridgelines, natural washes
   - If caught out of your vehicle in the open then proceed downhill to a less exposed side slope location. Avoid trees, fences, large rocks. Squat in the open on the balls of your feet with your head down. Cover ears with hands, elbows in, and wait the situation out.
   - After Severe Weather or Flash Flood is clear notify others that you are okay, if possible.
   - Provide assistance to others if you are capable.

4. Make appropriate company notifications of injuries or damage to company property.

Emergency Procedure:
Severe Weather – Blizzard

Notifications

- **Other Oxy Employees**
- **Other Contractors**
- **Other Operators**

Emergency Tools

- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **3-Day Emergency Preparedness Kit *(Oxy Employees)***
- **Oxy Radio/CB Radio**

1. During threatening weather or if severe weather has been predicted, tune to and monitor local weather radio or news broadcasts. When a blizzard warning has been issued in the area, immediately notify office and field personnel that may be affected. Inform others to tune into local weather newscasts to stay abreast of possible conditions and/or weather changes in their area.

2. If a blizzard is underway:

   - Inform personnel.

   If stranded in blizzard conditions:

   - If possible, notify others of deteriorating conditions along with your location and situation before communications are lost.
   - **DO NOT** leave your vehicle unless absolutely necessary. Assure exhaust pipe is clear of obstructions and run engine only when needed to conserve fuel.
   - If stranded away from your vehicle or if it is necessary to abandon the vehicle, seek shelter in a stable structure and wait for help to arrive. If shelter is not available build a snow cave and wait for help. If caught outside of shelter, build a fire if possible.
   - Try to stay dry. Change to dry and weather resistant gear.
   - If you are caught with more than one person in a blizzard **DO NOT SEPARATE**. Provide assistance to others, if you are capable.
   - Do not attempt to walk off the Mesa during blizzard conditions.

3. Make appropriate company notifications of injuries or damage to company property.

Emergency Procedure:
Spill and/or Uncontrolled Gas Release

Notifications
- **Other Oxy Employees**
- **Other Contractors**
- **Other Operators**

Emergency Tools
- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **MSDS**
- **Emergency Response Guidebook (ERG)**
- **Wind direction**

Required Forms To Complete (post-incident)
- **Accident/Incident Statement Form**
- **Spill Report Form**

1. If safe to do so, determine the nature and extent of the release and isolate the release. Be aware of hazardous substances or equipment in the area that may potentially create a change to the immediate emergency, i.e., hydrocarbon vapors.

2. If the release can not be safely isolated, evacuate the premise and establish roadblocks to prevent others from entering.

3. Notify Supervisor or their designee
   **Supervisor or their designee should:
   - If necessary, notify other company personnel to perform previously discussed & planned roles to secure the area or assist as operationally needed.
   - Begin cleanup and remediation procedures as soon as possible.
   - **Contact Oxy Piceance area IMMEDIATELY!!!**
   - Fill out and submit spill report form, in accordance with Oxy policies and procedures.

The (4) most common releases that could occur under this potential emergency are:

- Condensate
- Produced Water
- Wet Natural Gas
- Dry Natural Gas

****Note: <u>Report</u> all spills/releases to Oxy Piceance area no matter the quantity. Oxy Piceance area will make the proper notifications to government agencies.**

- A spill is less than five barrels is not reportable to the COGCC, but reportable to Oxy.
- A spill is greater than five barrels, shall be reported to COGCC.
- If the spill is greater than 20 barrels, then verbal notification shall be provided to COGCC within 24 hours.
- A spill of a refined petroleum product (hydraulic fluid, fuel, etc) from a regulated storage tank and greater than 25 gallons is reportable to CDPHE.
- All spills on federal lands are reportable.
- Consult Oxy's SPCC plan for additional reporting requirements.

Emergency Procedure:
Chemical Release/Spill

Notify Affected Personnel
- **Other Oxy Employees**
- **Other Contractors**
- **Other Operators**
- **Mesa Co. Dispatch: 970.242.1234 (if needed)**

Emergency Tools
- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **MSDS**
- **Emergency Response Guidebook *(ERG)***
- **Wind direction**

Required Forms To Complete (post-incident)
- **Accident/Incident Statement Form**
- **Spill Report Form**

1. If safe to do so, determine the nature and extent of the release.
   - Stay up wind and uphill
   - Locate Material Safety Data Sheets (MSDS), placards or labels that would help identify the chemical
   - Refer to Hazardous Communication (HAZCOM) program, Oxy Piceance Chemical Inventory, the ERG guidebook, placards, and labels for help in identifying the chemical and response procedures if necessary.

2. If there is no danger, isolate the release.

3. If the release can not be safely isolated, evacuate the premises and establish roadblocks to prevent others from entering the affected area.

4. Notify Supervisor or their designee

5. Supervisor or their designee should:
   - If necessary, notify other company personnel to perform previously discussed & planned roles to secure the area or assist as operationally needed. **
   - Contact local HAZMAT Response Team **(Mesa County Dispatch 970-242-1324)**, if needed for immediate response and control of a hazardous chemical release.
   - **Notify Oxy Piceance area IMMEDIATELY!!!**
   - Begin cleanup and remediation procedures as soon as possible.
   - Consult Oxy's SPCC plan for additional reporting requirements.

The most common chemical spills having potential to release are:
- Methanol
- Corrosion/Scale Inhibitor
- Diesel Fuel

** ***If the spill is on public ground or the public might be in any danger, notify local emergency services.***

Emergency Procedure:
Earthquake

Notify Affected Personnel

- **Mesa Co. Dispatch: 970.242.1234**
- **Other Oxy Employees**
- **Other Contractors**
- **Other Operators**

Emergency Tools

- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **CB Radio/Oxy Radio**
- **Emergency Response Guidebook *(ERG)***
- **MSDS**

Required Forms To Complete (post-incident)

- **Injury Report Form (If Applicable)**

If you are inside during an earthquake:

1. Immediately take cover under a table or desk, or stand in a doorway. In areas where cover is not available, kneel at the base of an interior wall, facing the wall and with head down and covered by arms.
2. Turn your body away from windows and mirrors.
3. Be alert for falling objects and stay away from overhead fixtures, filing cabinets, bookcases, and electrical equipment.

If you are outside during an earthquake:

1. Move to an open area away from buildings, trees, and power lines.
2. If unable to move to an open area, watch for falling objects.

If you are in an automobile during an earthquake:

1. Stop your vehicle in the nearest open area.
2. Stay in the vehicle until the shaking stops.

After an earthquake:

1. Be aware of the possibility of aftershocks.
2. If possible and it is safe to do so, evacuate the building as soon as the shaking has ceased. (Meet at the applicable Primary Mustering Area)
3. Do not move injured persons unless they are in obvious immediate danger (from fire, building collapse, etc.)
4. Open doors carefully. Watch for falling objects.
5. Do not use elevators.
6. Do not use matches or lighters.
7. Limit use of telephone to calls for emergency services.

Emergency Procedure:
Terrorism Attack/Threat/Enemy Action

Notifications

- **Mesa Co. Dispatch: 970.242.1234**
- **Other Oxy Employees**
- **Other Contractors**
- **Other Operators *(See Emer. Contact List)***

Emergency Tools

- **Tune to 106.7 FM *OR* Weather Channel on CB Radio**
- **CB Radio/Oxy Radio**
- **MSDS**
- **Emergency Response Guidebook *(ERG)***
- **Wind direction**

Required Forms To Complete (post-incident)

- **Injury Report Form (If Applicable)**

1. There are (4) main types of terrorist activity to be aware of:
   - ☐ Chemical
   - ☐ Biological
   - ☐ Radiological/Nuclear
   - ☐ Explosives

2. Pay attention to the following **indicators**: **(Any *suspicious* activity should be reported immediately.)**

   - ☐ Is the emergency response to a target hazard or target threat?
   - ☐ Has there been a threat?
   - ☐ Are there multiple (non-trauma related) victims?
   - ☐ Are responders victims?
   - ☐ Are hazardous substances involved?
   - ☐ Has there been an explosion?
   - ☐ Has there been a secondary attack/explosion?

If There Is **One Indicator**...

   - ☐ Respond with a heightened level of awareness

If There Are **Multiple Indicators**...

   - ☐ You may be on the scene of a terrorist attack
   - ☐ Initiate response operations with extreme caution
   - ☐ Be alert for actions against responders
   - ☐ Evaluate and implement personal protective measures
   - ☐ Consider the need for maximum respiratory protection or a full evacuation
   - ☐ Make immediate contact with law enforcement for coordination

3.Evacuate the area immediately to the applicable primary muster point,, make notifications to immediate supervisor, HES Group, applicable Fire Department.

VII. Decontamination

Decontamination or DECON will be very limited to Oxy employees, due to the fact that offensive operations will be infrequent without the implementation of a respiratory protection program. However, it is the IC's responsibility to ensure that contract personnel involved with cleanup of hazardous materials follow proper DECON procedures. DECON shall always be established in the warm zone of an incident.

VIII. Personal Protective Equipment (PPE) & Emergency Equipment

PPE and emergency equipment is critical to an effective and safe emergency response for entry personnel. The Operations Section is responsible to ensure all entry team members are wearing the appropriate level of PPE. Currently, Oxy Piceance area have not implemented a respiratory protection program (RPP), since a program has not been deemed necessary for Oxy employees at this time. For this reason, PPE will strictly consist of an ANSI-approved hard hat and safety glasses w/ sideshields, ASTM-approved steel-toe boots or chemical resistant steel-toe boots, and 100% cotton/wool or FRC (flame resistant clothing). Additional PPE may include a Tyvek chemical splash suit, neoprene gloves, face-shield, goggles, etc., depending on the scenario. Of course, all emergencies shall require an appropriate PPE site analysis prior to entry. Emergency equipment is also critical to effective emergency response. Below is a general list of Oxy-provided equipment: *(Note: this list may not be all inclusive)*

Emergency Equipment	
1st Aid Kits	4-Gas Monitor (CO, H2S, LEL, O2)
Fire Extinguishers	AED (automatic external defibrillator) (GJ office, CC Field office, CCCF Control room_)
Backboard (located in CC Field Office)	Explosion-Proof Flashlights
Eyewash Stations & Bottles	Spill Confinement Supplies (booms, diapers, pillows) (CCWHF, EPCS, Brush Creek office)
Landing Zone LZ Turbo Lights (CC Field office, CCCF Control Room)	

Table 2: Emergency Equipment

IX. Emergency Medical Treatment & First Aid

In the event of an emergency involving injury to Oxy employees and/or contract personnel, immediate care shall be provided to the injured to abate any life-threatening injuries (e.g.; cardiac arrest, breathing stopped, and profuse bleeding, etc.), if deemed safe to do so. At least 50% of all Oxy employees are required to be trained in First Aid (FA), Cardiopulmonary Resuscitation (CPR), and the use of an Automatic External Defibrillator (AED).

All other medical treatment beyond the first aid level, will require the evaluation of trained medical professionals from ambulance service to medical physicians at the clinic/hospital. The DeBeque Fire Department, the Plateau Valley Fire Department, and the St. Mary's Care Flight Helicopter can all provide advanced first aid at the Emergency Medical Technician (EMT) level. Hospital attention should be considered with respect to the below table, outlining medical facility protocol by priority. However, each emergency or incident should be managed case by case depending on injury severity.

Priority	Medical Facility	Contact Number
Non-Emergency	Work Partners Occupational Clinic	970.241.5585
Non-Emergency	Grand River Health & Safety Center	970.285.5731
Emergency	St. Mary's Hospital	970.244.2990

Table 3: Medical Facility Protocol

X. Emergency Alerting and Response Procedure

Once an employee recognizes the occurrence of an emergency, he/she will notify their immediate supervisor, following *Figure 2: Incident Notification Flowchart*.

The on-scene Incident Command Staff shall notify the appropriate lines of authority and emergency response agencies as follows:

A. Notify Mesa County Dispatch at 970.242.1234.
B. Call law enforcement officers to help control traffic and the public, if necessary. If roadblocks are required and established during an emergency, advise the control points what outside help may be expected so that they can be admitted to the project area.
C. Consider the necessity of evacuating any residents in the area. Currently, there are ranching interests and residential areas in the field(s) that may need notification.
D. Establish contact with Civil Defense, Electric Companies, Gas Companies or other service organizations as needed.
E. Contact Doctors, Hospitals, HAZMAT and ambulances as necessary.
F. Contact any outside help necessary, such as construction contractors, tank trucks and other producers in the area which may be affected.
G. Maintain communications and information flow with Oxy Piceance area and all potentially affected personnel.

Notification to Oxy-MCBU management of any Health, Environment and Safety (HES) incident shall be made as soon as possible after the incident, so that additional steps can be taken as needed. Emergency response agencies as listed on page 3 of this plan shall be notified as needed. Below is the typical notification via the OXY chain of command, in accordance with OOG HES&S Procedure *60.400.0500 Incident Reporting and Investigation Standard*.

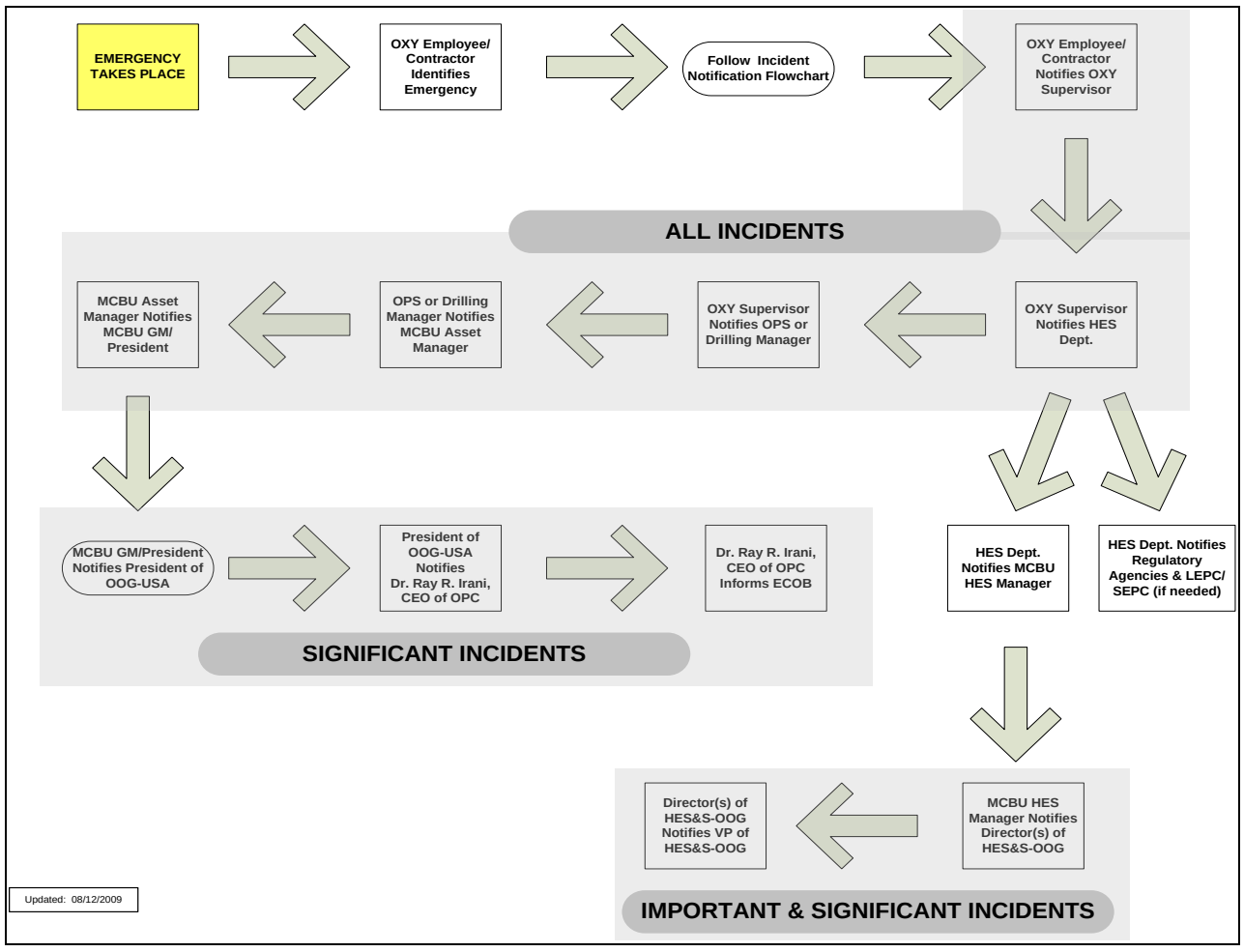


Figure 6: Oxy Crisis Notification Flowchart

XI. Media Relations Guide

All inquiries/requests for information from the media and the public should be referred to the Oxy Piceance area Operations Manager or MCBU-Asset Manager. Media relations are prohibited from entering the incident scene and must stay outside the perimeter. Below is the list of *Oxy Public Affairs* that the PIO must liaison with:

Preference	Name	Office	Home	Cell
Primary	Nancy Turner	713-215-7759	NA	832-798-4947
Secondary	Heather Margain	956-429-0606	NA	956-270-1280
Tertiary	Eric Moses	310.433.6377	310.458.3458	310.710.0743

Table 4: Oxy Public Affairs

XII. Critique of Response & Follow-up

Following all emergency response operations, a critique of the response efforts should be conducted to allow critical feedback that could improve the next potential emergency response management. This can be accomplished either verbally or in a structured, classroom setting outlining "what went right, what went wrong, and what can be improved on". The critique should always be documented for legality reasons. It is important to remember that a critique should be constructive, which means a positive effort is being conducted. An incident critique is not a "blame game".

Additionally, all forms from each functional ICS group should be reviewed, for assistance with the critique. Any corrective actions developed from the critique should be documented and followed with action plans/target dates to ensure consistency with emergency response efforts throughout all operational phases.

Appendix A: Field Fire Prevention Plan

Introduction

The *Fire Prevention Plan* is a guide to help you know what to do and who to contact during a fire breakout in the mesa/valley where Oxy has operations.

Having the available resources and knowing how to access them is crucial for someone who is involved in a fire incident and is injured or in critical condition. The information provided will help to increase an understanding of Oxy's policy and help in providing assistance to the general public and to Oxy should unexpected conditions arise which create a concern for public safety.

All Oxy employees, contractors, sub-contractors, or anyone on Oxy-owned property should have the *Emergency Response Plan (ERP) Manual* available if needed for a resource in case of an emergency situation. The *Fire Prevention Plan* is in addition in the ERP Manual and specifically lays out a plan of action for workers to follow when an unexpected fire does happen.

This section cannot cover all potential situations that may require emergency procedures. Check with the local Oxy representative for site specific procedures in effect for a particular work location.

Types of Fires

There are five general types of fires that have the possibility to occur on Oxy operations. They are lightning, smoking, flaring, hot work, and vehicle fires all which can result in a serious wild-land fire. Better understanding these types of hazards will only help you realize how to respond more efficiently if a wildfire occurs.

Lightning

Lightning is one of the most beautiful displays in nature. It is also one of the most deadly natural phenomena known to man. With bolts that are hotter than the sun, lightning can do some serious damage. One of the most common natural fires is caused by lightning. According to the Colorado Department of Local Affairs, "about half of all the wildfires in Colorado are lightning caused fires". Storms can move in very quickly on top of the mountain and lightning can become a severe hazard. In the United States alone, lightning sets 10,000 forest fires and causes $100 million in property damage every year. Always stay inside during a lightning storm; never go outside. If you are caught outside during a lightning storm avoid trees, fences, poles, or anything metal.

Smoking

The second type of fire is smoking. The best way to prevent a fire from smoking is to smoke only in designated smoking areas or in your vehicle. Never throw a cigarette butt outside. This is one of the most common ways fires are started. Pay attention to posted "NO SMOKING" signs and never smoke near flammable liquids or gases.

Flaring

Another potential fire hazard is flaring. Flaring or venting is a controlled burning process of natural gas that cannot be processed for sale or use because of technical reasons. Oxy has long used flaring and venting to

safely dispose of gases that occur in the production and processing of natural gas. In emergency situations, flaring provides a safe way to stabilize equipment.

Hot Work

A fourth fire danger is hot work which includes welding, grinding, and cutting. Each one of these is extremely dangerous because of the high fire danger they present. Dry, hot temperatures provide the perfect environment for sparks to ignite and start a wild-land fire. Every contractor who intends to perform one of these operations for Oxy must have a permit to do so before they start their job. Each contractor must have an established person that is the "fire watch" while the hot work is being performed. This person stands ready with an approved fire extinguisher to put out any fires that may start. The fire watch is required to remain at the hot work area for a period of 30 minutes after the job is complete. This lessens the chance of a fire occurring.

Vehicle Hazards

Another fire concern is vehicles that are equipped with catalytic converters. Catalysts reduce emissions by accelerating the combustion of pollutants leaving the engine. In doing this job, they get hot. The outside metal temperatures of some types of converters may approach 800 to 1000 F under conditions of extremely high engine loading. In other words, catalytic converters on vehicles get extremely hot after a long drive up the mountain. So parking should be only in a designated parking area at the location. Never park a catalyst-equipped vehicle, or any vehicle, on a pile of dry grass/brush or other dry vegetation. Always park where you can easily access the nearest exit by driving forward. Survey the scene so you know your exits for means of a quick escape.

When a Fire Breaks Out:

If a potential wildfire breaks out on the mesa, the most important thing is accountability. First of all notify someone of the fire, whether it be your supervisor, coworker, etc. Second, call the ***Mesa County Dispatch*** immediately at **(970) 242-1234**; the sooner the fire department is dispatched, the quicker the response time will be. All fires on federal lands should require immediate notification to the applicable Oxy personnel. Then analyze the situation and determine what the potential hazards are.

Ask yourself these questions:

Are there any hazardous or toxic chemicals at risk?
Is the fire life threatening?
Is there damage to public property?
If possible and not a risk to life, isolate the fuel sources.

Next, determine if the fire can be extinguished, if so, alert someone else of your plans, locate the nearest fire extinguisher and proceed to put the fire out. Every employee of Oxy should be trained on how to properly extinguish a fire.

Note: Oxy recommends fighting a fire ONLY in the incipient stage. What is the incipient stage? A fire in its beginning stage. Incipient stage fires can be controlled with portable fire extinguishers.

There are (4) steps to extinguish a fire called the ***PASS* system**:
Pull - *Pull* the safety pin
Aim - Remove the hose and *aim* the nozzle toward the fire
Squeeze - Holding the handle, *squeeze* the trigger
Sweep – Extinguish the fire in a *sweeping* motion, from left to right

When to Leave

If the fire cannot be put out by the fire extinguisher in the *incipient stage*, it is time to evacuate the area immediately. Communication is key, inform everyone to evacuate the location and make sure everyone is accounted for. There should be designated meeting or muster points on location, where the entire crew/employees would meet in the event of an emergency. During the brief meeting, decide which route is the safest to use and evacuate as soon as possible.

Cascade Creek
There are (4) alternative routes of escape from Oxy Cascade Creek operations. The first three possible exits are drivable escape routes and the latter is a cow trail. The primary escape route is off the Oxy road leading to Conn Creek Road. The second is off Logan Wash Road if possible. The third alternative is to drive north on Trail Ridge Road, which is the road that lays directly north of the mesa well locations. If you stay on Trail Ridge Road it will eventually take you north to Rio Blanco County on County Road 5 and then to Colorado Highway 13. The other possible route would be to hike down the cow path that is connected to Oxy's valley operations. This allows (4) different evacuation routes where if one exit is blocked there is always an alternative. Please note the (3) secondary routes are ONLY for emergency access and are intended for the safe escape of *Oxy contractors/sub-contractors*.

Collbran
There are (3) alternative routes from the Oxy Collbran operations. All three are drivable escape routes on public highways. From the East Plateau area, one can take 60 Road, 59 ½ Road, and Grove Creek Road North to Highway 330 and then head eastbound to Highway 65 to I-70. A secondary escape route can be followed by heading South on 59 Road, to AA 50 Drive, to Lakeshore Drive, to Highway 65 southbound to Delta, then to the City of Cedaredge, to the City of Delta at Highway 92.

The Brush Creek area primary escape route is Highway 330 eastbound to the City of Collbran and then eastbound to Highway 65, to I-70. A secondary route can be followed westbound on Highway 330 to Northeast County Road 342, to North Divide Creek Road to the City of Silt and then I-70.

The Hell's Gulch area primary escape route is south on Canyon Road 342, to Highway 330 eastbound to the City of Collbran, and then eastbound to Highway 65, to I-70. A secondary route can be followed westbound on Highway 330 to Northeast County Road 342, to North Divide Creek Road to the City of Silt and then I-70.

Where To Go

Once you have evacuated the area, the primary muster point for each individual on the Cascade Creek lease would be the Oxy field offices. (Secondary is the cattle pens at Conn Creek Rd GC 213 & GC Rd 204.) Everyone should meet there and be accounted for by the supervisor in charge. If your path of escape is Trail Ridge Road, continue until you reach Piceance Creek, Rio Blanco county roads. Travel east on Rio Blanco County Road 5 to Colorado Highway 13 and then south on Highway 13 to Rifle, CO and Interstate 70.

Once you are in the safe zone contact your supervisor immediately for accountability. Drive careful and when emergency vehicles are met on the road, pull over and always give them the right away. ***Report all fires, regardless of the size to an Oxy representative as soon as possible.***

If a situation occurs where all exits are blocked, find a location with a bare, dirt pad and wait out the fire. Park your vehicle the farthest point away from all production units and methanol/condensate tanks and turn the engine off. Stay in your vehicle with the windows rolled up and the air conditioner/heater off, with all vents closed. This will keep smoke from entering the vehicle.

Who/What is in Danger?

There are several major operations that are in the danger zone if a fire breaks out. Drilling rigs, multiple production sites, various contractors on location, hunter/rancher cabins, and particularly temporary housing units are a major concern for Oxy. Also, other oil/gas companies in the area travel daily on Logan Wash Road and could also be affected.

Temporary Housing Units

One of the most susceptible places for a wild-land fire to catch employees off-guard is the temporary housing units. Remote locations provide an opportunity for a fire to easily arrive and trap employees with no access/egress to escape. The temporary housing units are being assessed per Colorado state and county regulations to ensure the health and safety of each employee.

Fire Dangers/Hazards

The following is a list of things that should be considered for fire prevention:

- Temporary housing units must be a minimum of 75 feet from the well-head and condensate/methanol tanks.
- Smoking is allowed only in designated smoking areas. Smoking is **NOT ALLOWED** inside any temporary housing units owned or leased by Oxy on Oxy property. Matches and all smoking equipment may not be carried into “No Smoking” areas. Butt disposal containers should be placed in the designated smoking areas.
- Absolutely no drugs, alcohol, or firearms. Methamphetamine laboratories are EXTREMELY DANGEROUS and will not be tolerated on Oxy property.
- All exits must be maintained free and clear of any obstructions. Exits must have free clearance of 10 feet. EXIT signs must be posted at each exit in the facility. Center to center between trailers must be maintained at a minimum of 20 feet. Exit stairs must be sturdy and level.
- Areas around all temporary housing units shall be kept free of clutter.
- All combustible waste materials must be disposed of daily. Bear-proof trash containers must be provided on the location.
- No gas heaters are allowed on location. Only electric heaters or unit heaters are acceptable means of heating.
- Absolutely no open-flame fires or charcoal grilling is allowed. Only gas cooking grills are allowable per Oxy approval, but must be 50 feet away from the well-head.
- Vegetation must be cleared within a 10 foot distance around the facility.

- Fully charged and mounted fire extinguishers shall be available and accessible to all residents. They must be monthly and annually inspected and be located 75 feet (maximum) from any point in the facility. Access should be unobstructed and personnel trained to use the extinguisher. Extinguishers must be clearly marked.

- Only non-flammable cleaning materials are allowed.

- Flammable liquids shall not be stored within 50 feet of the well-head, unless otherwise approved.

- All small gas/diesel containers must be stored at least 50 feet away from the temporary facility and the container must be an OSHA/NFPA approved safety can.

- All electrical wiring and appliances shall be UL rated and shall meet all applicable federal, state and local building codes, OSHA standards and NFPA regulations. All units must be grounded.

- Smoke alarms are required by NFPA Life Safety Code and will be inspected on a monthly basis.

- Each site shall have a pre-determined muster point and all occupants of the temporary housing site shall be briefed on emergency action plans.

How To Prepare for a Fire?

Evacuation Drills/Training

Every drilling rig crew, temporary housing occupants, and contractor that is staying on the mesa for a set time frame is required to have routine evacuation drills and training. Supervisors should provide information concerning the (4) evacuation routes, existing fire hazards, and important safety concerns on a weekly basis. Employees need to know the Fire Prevention Plan, so when the unexpected does happen, they will be ready.

The *Emergency Response Plan (ERP) Manual* and Fire Prevention Plan is available upon request to each critical contractor/employee before employment, with the expectation that the critical contractors/employees will brief individuals and visitors they oversee. The fire hazards will be discussed and any questions or concerns should be brought to attention immediately. It is important to know the potential hazards that exist during a job and the resources that your safety depends on.

Fire Prevention Checklist

To ensure that you know this fire plan, ask yourself these questions:

- ✓ What fire hazards exist around me?
- ✓ What are the (4) evacuation routes that are available?
- ✓ What is the best exit for a means of escape?
- ✓ Who do I call in case of a fire?
- ✓ Where do I access emergency contact information?
- ✓ Is the fire life threatening?
- ✓ Where is the closest fire extinguisher?
- ✓ Where is the muster points in case of an emergency?
- ✓ What is the weather like, windy, thunderstorms, etc.?

St. Mary's CareFlight
2635 N. 7th Street • P.O. Box 1628 • Grand Junction, CO 81502-1628

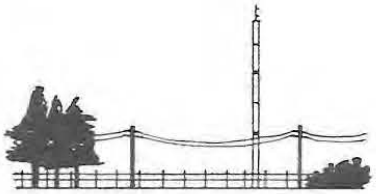
HOW TO PREPARE A LANDING ZONE 1-800-332-4923

Selecting an On-Scene LZ (Landing Zone)

First, determine if the area is large enough to land the CareFlight helicopter safely. The landing surface should be flat, firm, and free of debris that would blow up into the rotor system or be a hazard to persons at the scene.

Touchdown Area: The touchdown area should be square with a minimum of 100 feet on each side.

The landing site should be clear of people, vehicles, and obstructions such as trees, poles, and wires. **Keep in mind that wires cannot be seen from the air at night.** The landing site must be free of stumps, brush, posts, and large rocks.



Select a landing site clear of trees, poles and wires.

Wind Direction & Touchdown Area

Consider the wind direction. Helicopters land and take off into the wind. Inform the pilot of the direction **from** which the wind is blowing. *i.e. "Wind from the north."*

Is the approach and departure path free of obstructions (wires, poles, antennas, trees, etc.)? If there are obstructions, please tell the CareFlight team during the initial radio call.

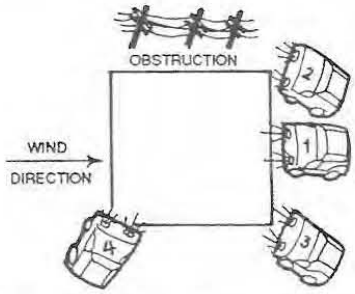
Keep approach/departure path free of obstructions.

Illumination of the LZ at Night

Mark the touchdown area with five lights/road flares (one in each corner and one indicating wind direction).

When using automobile(s), place the vehicle(s) in position based upon the number of vehicles available. For instance, if only one vehicle is available, place it in vehicle #1 position (pointing into the wind). If two vehicles are available, place them in vehicle #1 and #2 positions, etc. Use any additional vehicles (if more than 3 available) to illuminate flight and landing surface obstacles.

At night, assure that spotlights, floodlights, vehicle lights, and handlights used to define the LZ and obstacles are not pointed toward the helicopter. Turn off non-essential lights. White lights, such as spotlights, flash bulbs, and headlights ruin the pilot's night vision and temporarily blind him. Red lights or blue lights, however, are very helpful in finding accident locations and do not have a detrimental effect on the pilot's night vision.



When using automobiles to illuminate the nighttime landing zone, place in the positions as shown above.

1

St. Mary's CareFlight

HOW TO PREPARE A LANDING ZONE (cont.)

Personnel Safety

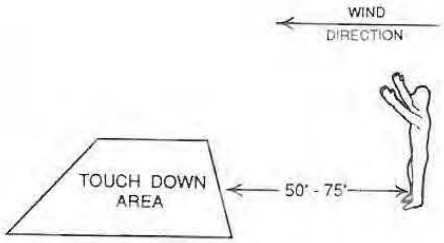
Keep spectators at least 200 feet from the touchdown area. Keep emergency service personnel at least 100 feet away, if possible. Encourage everyone working near the helicopter to wear eye protection.

Remove hats or helmets or fasten chin straps (no loose hats blowing up through the rotors)!

Rules of Thumb for Safe Distances:

- 100 feet from helicopter to waiting ambulance
- 200 feet from helicopter to crowds & pedestrians
- 300 feet from the helicopter to stopped traffic
- 200-400 feet from accident victims to traffic

Ground Guide: When CareFlight arrives at the scene, **only one** person should give LZ, wind, and obstacle instructions. That person should wear eye protection and they should stand with their **back to the wind** and arms raised over head to indicate the direction of the wind, which will usually be the opposite of the landing direction. As the helicopter turns into the wind, and begins the final descent, the ground guide should leave to a safer area.



Ground guide should stand with their back to the wind, and with arms raised over their head to indicate direction of the wind.

Communications

One person, the LZ coordinator, will be responsible for all communication with the pilot. The LZ coordinator should monitor the radio at all times when the helicopter is running. It is CareFlight's policy to monitor the LZ frequency for at least two minutes after departure.

Every attempt will be made to contact the LZ coordinator on the frequency specified in the dispatch call. In the event that communication cannot be established on that frequency, the helicopter will monitor NLEC (National Law Enforcement Channel).

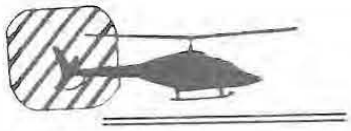
Please immediately report to the pilot any observed hazards and wait for his acknowledgement.

Safety Summary

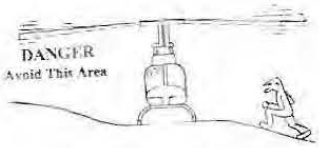
The St. Mary's CareFlight team can serve YOU only if we arrive safely. Our safety and the safety of the people on the ground depends on your professionals and CareFlight working together as a team.

General Helicopter Safety Rules

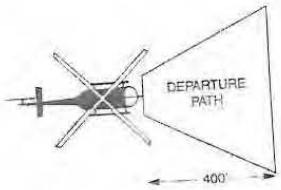
- The pilot will perform as many high reconnaissance orbits as they feel necessary to insure a safe landing.
- When working around any helicopter, never approach from the rear. Always approach and depart the aircraft towards the front so you can see the pilot and so he can see you.
- The LZ coordinator will designate as many persons as necessary for crowd control.
- If the helicopter is landed on a slope, approach and depart from the down-slope side, unless that is the rear of the helicopter. In that circumstance, approach from the left or right from the most level ground and **in plain sight of the pilot**.
- When the helicopter is loaded and ready for take-off, **keep the departure path free of vehicles and spectators or rescue personnel**. If an emergency were to occur during take-off, we would need this area to execute our landing.



Approach and depart helicopter from the front, so the pilot can see you.



Approach and depart helicopter from the down-slope side.



Keep departure path free of vehicles, spectators and rescue personnel.

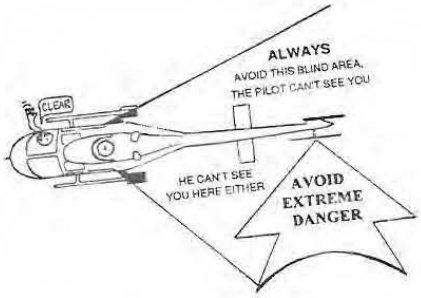
Assisting the CareFlight team

Once CareFlight has landed, only briefed emergency personnel should approach the helicopter. Be sure to receive a "go-ahead" sign from the pilot before stepping under the rotor tip path and then approach from the front of the helicopter.

A landing zone coordinator should be prepared to assist the crew by providing security for the helicopter. The tail rotor is the most dangerous area. If asked to provide security, do not allow anyone but the crew to approach the helicopter.

Note: The Bell 412 loads from the left or right side, feet first.

Designate two or three personnel to assist the CareFlight team in loading the patient. When approaching or departing the helicopter, always be aware of the tail rotor and always follow the CareFlight team's directions or the pilot's directions for your own safety.



Be sure to receive a "go-ahead" sign from the pilot before approaching the helicopter. Always be aware of the tail rotor, the most dangerous area.

Hazardous Chemicals/Gases

Accidents involving hazardous materials require special handling by Fire/Rescue units on the ground. The preparations for helicopters responding to these accidents also require special considerations.

Helicopter medical crews normally do not carry protective suits or breathing apparatuses to protect them from hazardous materials. Upon initial radio contact, the CareFlight team must be made aware of any hazardous materials or gases in the area. If the aircraft were to fly through the hazardous gases, the crew could be poisoned and the engines could develop mechanical problems, or cause an explosion or fire. Never assume that the crew has already been informed of the Hazmat situation.

Hazardous materials of concern are toxic, poisonous, flammable, explosive, irritating, or radioactive in nature. Patients exposed to hazardous materials will require decontamination prior to air transport to avoid contamination of the crew and aircraft.

Some radioactive materials are more dangerous than others, depending upon the type and amounts of those materials. In general, radioactive materials are difficult to ignite, but will burn, and the smoke is toxic.

The CareFlight team should be advised if victims may be contaminated by radioactivity.

CareFlight must be notified of hazardous materials on the scene in order to avoid contamination of the flight team and aircraft.

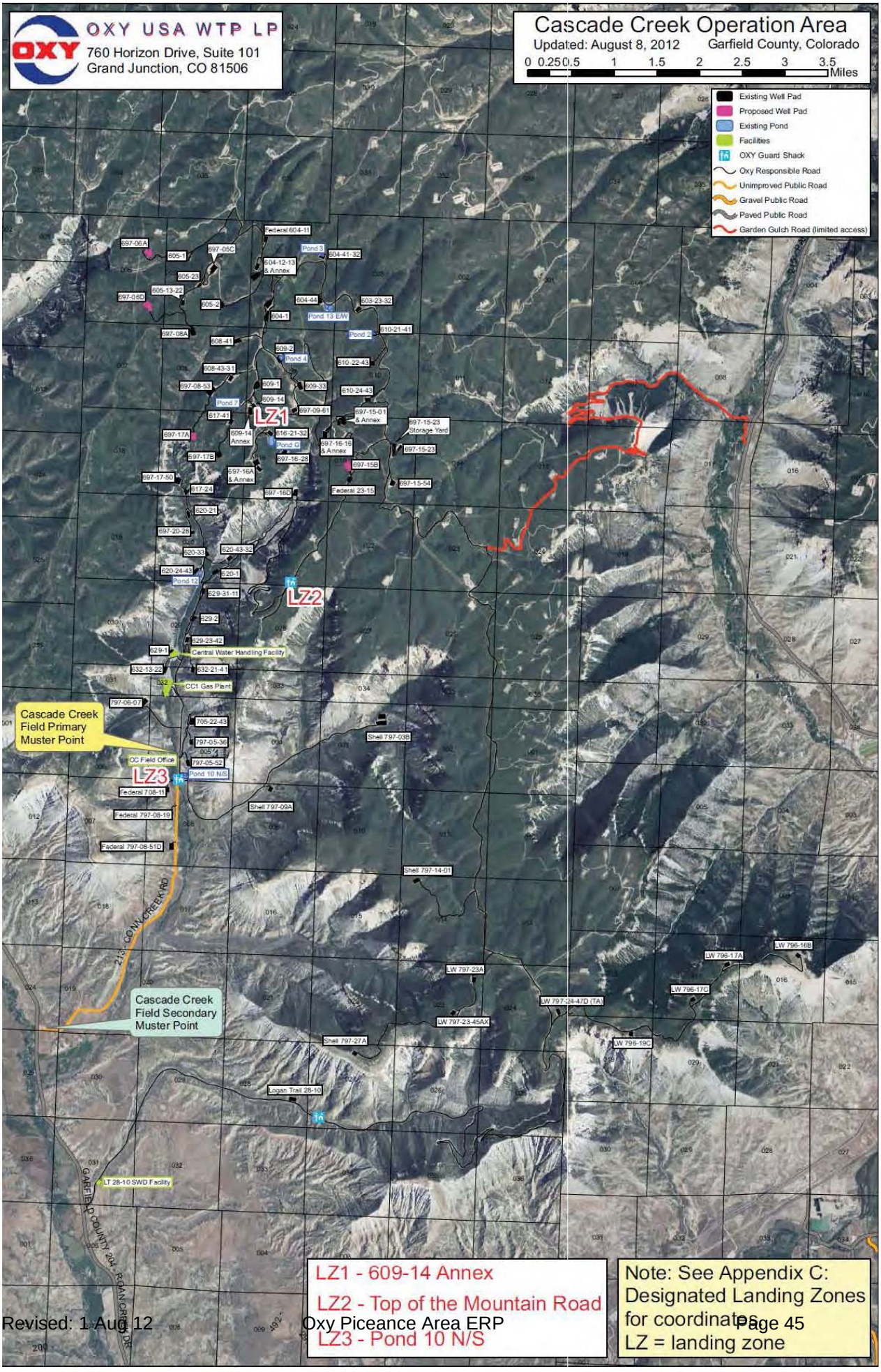
Hazardous Materials LZ Preparation and Considerations

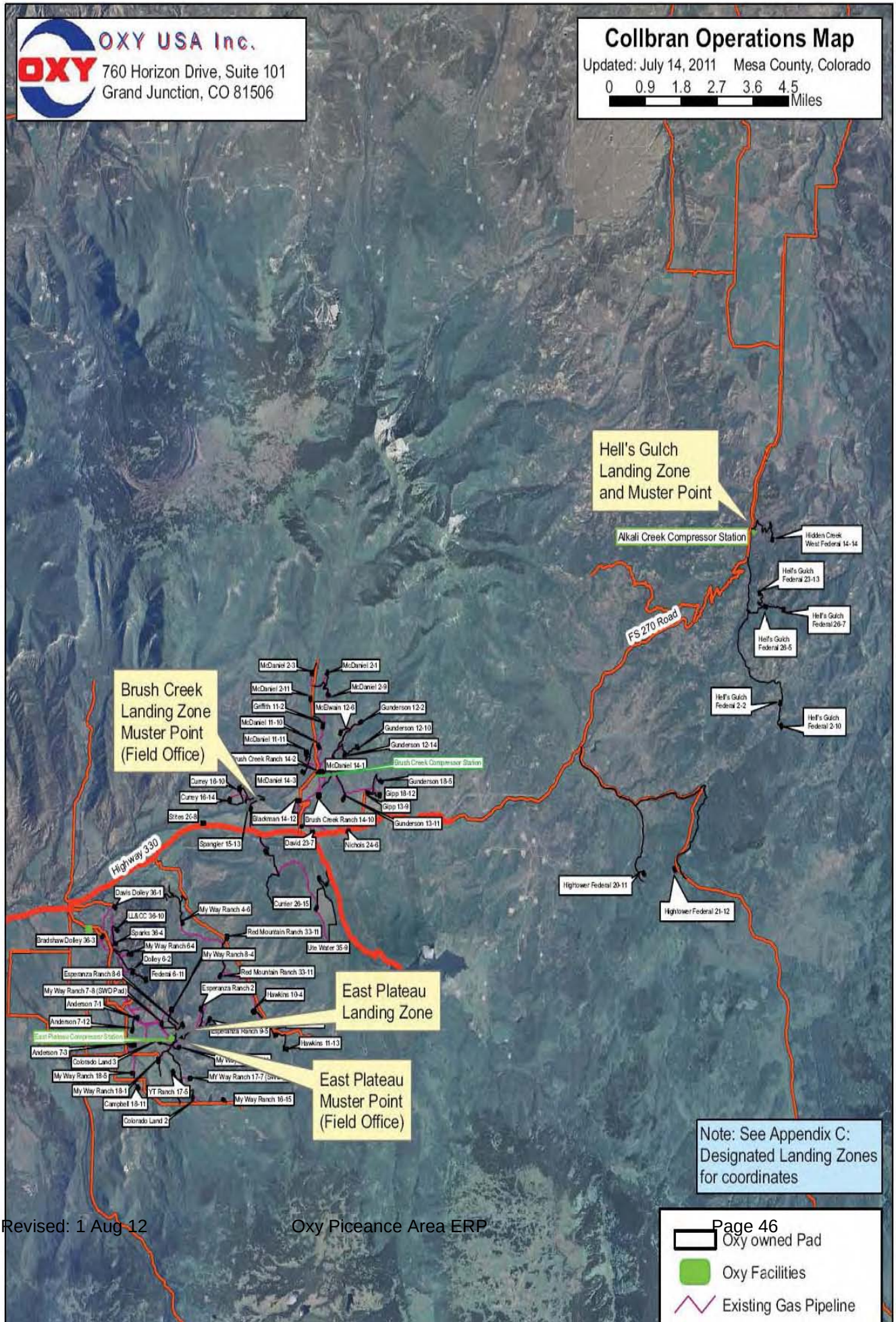
Helicopter landing zones must be selected to avoid possibility of compromising the safety of the CareFlight team and adjacent people and property.

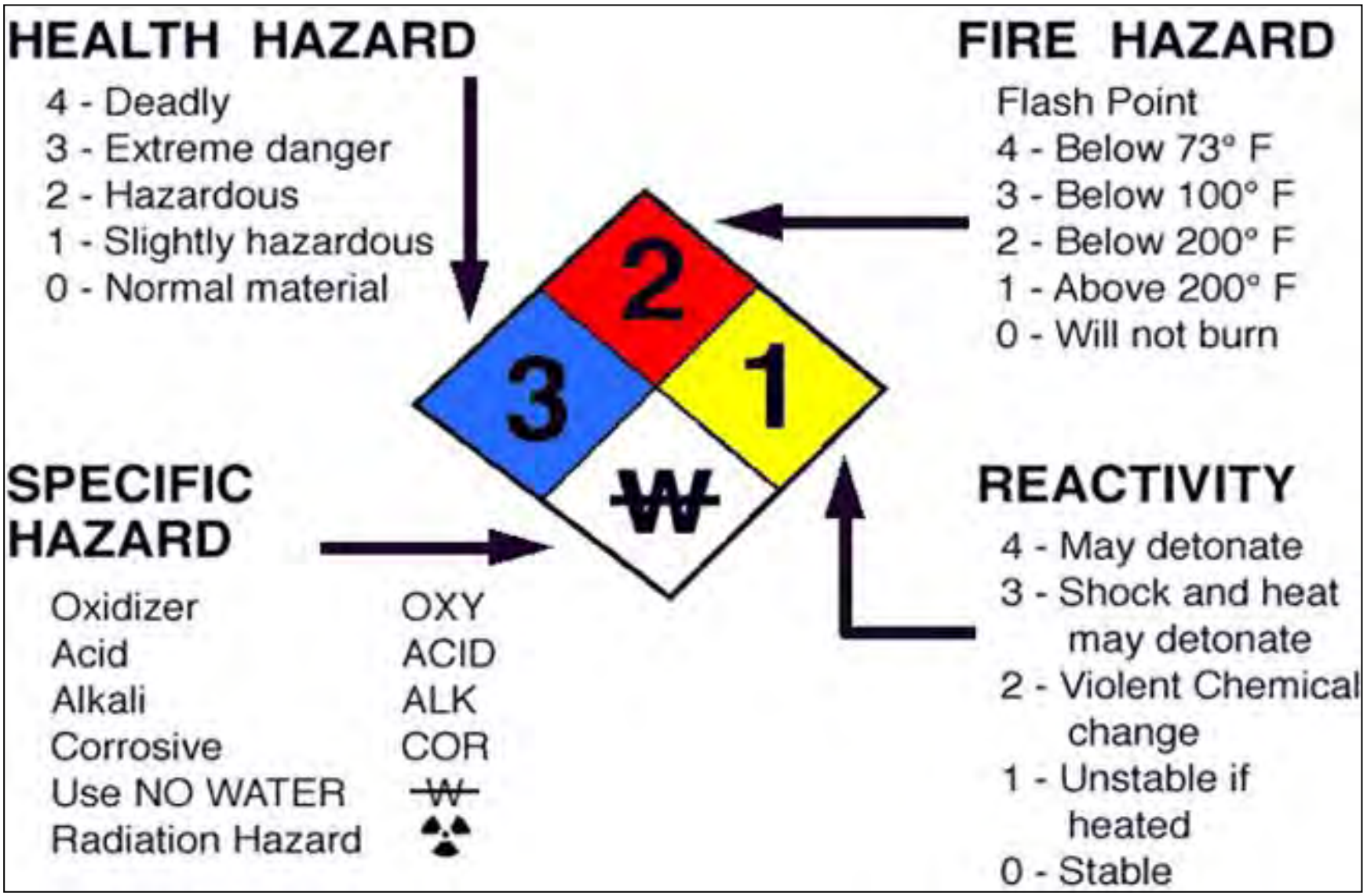
When explosives, poisonous gases/vapors, or chemicals in danger of exploding and burning are on site, ***helicopter landing zones must be prepared upwind***, a safe distance (may be as much as one mile) from the hazardous material accident site, and never in low-lying areas. The toxic gases or vapors may be heavier than air and gather in these low-lying areas.

For hazardous material accidents involving radioactive materials, the ***CareFlight LZ must be prepared upwind, a safe distance (may be 1/4 mile) from accident***, unless there are radioactive gases (steam or smoke), and in this case, the LZ must be at lease one mile upwind of the accident site.

APPENDIX C: Designated Landing Zones/Muster Points	
CASCADE CREEK LANDING ZONES	**COLLBRAN LANDING ZONES**
LANDING ZONE #1 (Mesa 609-14)	**Plateau Creek (North of East Plataea Field Office)**
LATITUDE 39.531120	**Landing Zone**
LONGITUDE -108.232089	**LATITUDE 39.204450**
	LONGITUDE -107.911156
LANDING ZONE #2 (Top of Mountain Road)	**Plateau Creek (East Plataea Field Office)**
LATITUDE 39.500164	**Primary Muster Point**
LONGITUDE -108.225004	**LATITUDE 39.202764**
	LONGITUDE -107.910612
LANDING ZONE #3 (VALLEY Chain-up Area)	**Brush Creek (Brush Creek Field Office)**
LATITUDE	**Landing Zone**
LONGITUDE	**LATITUDE 39.272010**
	LONGITUDE -107.872564
PRIMARY MUSTER POINT (CC Field Office)	**Brush Creek (Brush Creek Field Office)**
LATITUDE 39.468563	**Primary Muster Point**
LONGITUDE -108.245451	**LATITUDE 39.272010**
	LONGITUDE -107.872564
SECONDARY MUSTER POINT (Corral at intersection of GC Rd 213 & GC Rd 204)	**Hell's Gulch - Alkali Creek (East of Compressor Station)**
LATITUDE 39.424501	**Landing Zone**
LONGITUDE -108.273873	**LATITUDE 39.357574**
	LONGITUDE -107.645825
	Hell's Gulch - Alkali Creek (East of Compressor Station)
	Primary Muster Point
	LATITUDE 39.357574
	LONGITUDE -107.645825


OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Cascade Creek Operation Area
Updated: August 8, 2012
Garfield County, Colorado
0 0.250.5 1 1.5 2 2.5 3 3.5 Miles
Existing Well Pad
Proposed Well Pad
Existing Pond
Facilities
OXY Guard Shack
Oxy Responsible Road
Unimproved Public Road
Gravel Public Road
Paved Public Road
Garden Gulch Road (limited access)
LZ1
LZ2
LZ3
Cascade Creek Field Primary Muster Point
Cascade Creek Field Secondary Muster Point
Central Water Handling Facility
CC1 Gas Plant
CC Field Office
Pond 10 N/S
LT 28-10 SWD Facility
CONN CREEK RD
GARFIELD COUNTY 204 - RYAN GRADE DR
LZ1 - 609-14 Annex
LZ2 - Top of the Mountain Road
LZ3 - Pond 10 N/S
Note: See Appendix C: Designated Landing Zones for coordinates
LZ = landing zone


OXY USA Inc.
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Collbran Operations Map
Updated: July 14, 2011 Mesa County, Colorado
0 0.9 1.8 2.7 3.6 4.5
Miles
Hell's Gulch Landing Zone and Muster Point
Alkali Creek Compressor Station
Hidden Creek West Federal 14-14
Hell's Gulch Federal 23-13
Hell's Gulch Federal 26-7
Hell's Gulch Federal 26-5
Hell's Gulch Federal 2-2
Hell's Gulch Federal 2-10
FS 270 Road
Brush Creek Landing Zone Muster Point (Field Office)
McDaniel 2-3
McDaniel 2-1
McDaniel 2-11
McDaniel 2-9
Griffith 11-2
McElwain 12-6
Gunderson 12-2
McDaniel 11-10
Gunderson 12-10
McDaniel 11-11
Gunderson 12-14
Brush Creek Ranch 14-2
McDaniel 14-1
Brush Creek Compressor Station
Currey 18-10
McDaniel 14-3
Gunderson 18-5
Currey 16-14
Gipp 18-12
Gipp 13-9
Sites 26-8
Blackman 14-12
Brush Creek Ranch 14-10
Gunderson 13-11
Spangler 15-13
David 23-7
Nichols 24-6
Highway 330
Davis Dolley 36-1
Currier 29-15
My Way Ranch 4-6
LL&CC 36-10
Sparks 36-4
Red Mountain Ranch 33-11
Bradshaw Dolley 36-3
My Way Ranch 6-4
Ute Water 35-9
My Way Ranch 8-4
Dolley 6-2
Esperanza Ranch 8-6
Federal 6-11
Red Mountain Ranch 33-11
My Way Ranch 7-8 (SWD Pad)
Esperanza Ranch 2
Hawkins 10-4
East Plateau Landing Zone
Anderson 7-1
Anderson 7-12
Esperanza Ranch 9-5
East Plateau Compressor Station
Hawkins 11-13
Anderson 7-3
Colorado Land 3
My Way Ranch 18-5
My Way Ranch 17-7
My Way Ranch 18-1
YT Ranch 17-5
Campbell 18-11
My Way Ranch 16-15
Colorado Land 2
East Plateau Muster Point (Field Office)
Hightower Federal 20-11
Hightower Federal 21-12
Note: See Appendix C: Designated Landing Zones for coordinates
Oxy owned Pad
Oxy Facilities
Existing Gas Pipeline


HEALTH HAZARD
4 - Deadly
3 - Extreme danger
2 - Hazardous
1 - Slightly hazardous
0 - Normal material
FIRE HAZARD
Flash Point
4 - Below 73° F
3 - Below 100° F
2 - Below 200° F
1 - Above 200° F
0 - Will not burn
2
3
1
W
SPECIFIC HAZARD
Oxidizer OXY
Acid ACID
Alkali ALK
Corrosive COR
Use NO WATER W
Radiation Hazard
REACTIVITY
4 - May detonate
3 - Shock and heat may detonate
2 - Violent Chemical change
1 - Unstable if heated
0 - Stable

Air Quality

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

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OXY USA WTP LP and OXY USA Inc.
Subsidiaries of Occidental Petroleum Corporation

760 Horizon Drive, Suite 101
Grand Junction, CO 81506

October 18, 2013

Mr. Glenn Hartmann
Community Development Department
Garfield County
108 8th Street, Suite 401
Glenwood Springs, CO 81601

Re: Oxy Air Regulatory Permitting Statement for Proposed E&P Waste Management Facilities Located in the Cascade Creek Operating Area
Garfield County, Colorado

Dear Mr. Hartmann,

OXY USA WPT LP (Oxy) is upgrading its existing storage ponds from COGCC permitted multi-well storage ponds to COGCC Centralized E&P Waste Management Faculties. The upgrades triggers a review of air permitting regulatory (local, state, and federal) requirements.

Oxy has hired an air consultant to prepare a Reasonably Available Control Technology (RACT) analysis for determination of appropriate control of hydrocarbons from the produced water and flowback water storage impoundments. The RACT analysis covers the following facilities:

- Pond 10,
- Pond 13 East and West, and
- Pond G.

Once the RACT control method and facility wide potential emissions are identified and analyzed, Oxy will respond accordingly, which may include preparing and submitting any required APENs to the CDPHE. The target completion and submittal date for this activity is November 30, 2013.

Oxy will provide the Garfield County Community Development Department (CDD) with the results of the RACT analysis and if APEN application submittal's are required, Oxy will also provide them to CDD. Copies of approved APEN's will be provided to CDD.

Please contact me if you have any questions, comments, concerns, or if you require additional information. I can be reached at 970.263.3637 or at daniel_padilla@oxy.com.

Sincerely,

Daniel I. Padilla
Regulatory Advisor

Cc: file
M. Brygger
Olsson

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Figures

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

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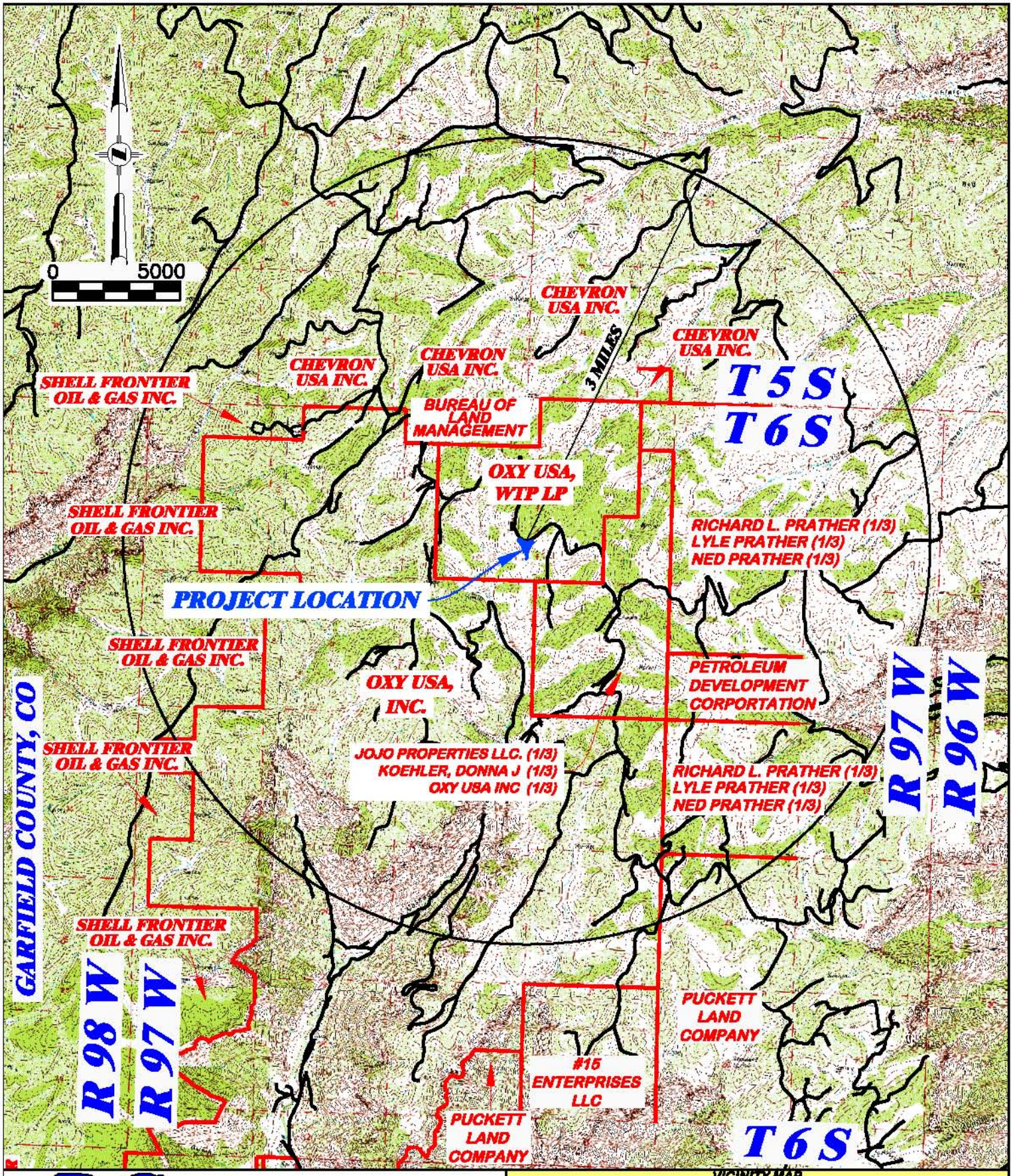

VICINITY MAP

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

OXY USA, WTP LP.
POND 13 LIMITED IMPACT REVIEW VICINITY MAP
SECTION 4, T.6 S., R.97 W., 6th P.M.,
GARFIELD COUNTY, COLORADO

DRAWN: 4/16/2013 - RAS	SCALE: 1" = 5000'
REVISED: 9/5/2013 - RAS	JOB No. 19810
UPDATE OWNERSHIP	VICINITY MAP

PROPOSED LOCATION ---- EXISTING ROAD ——

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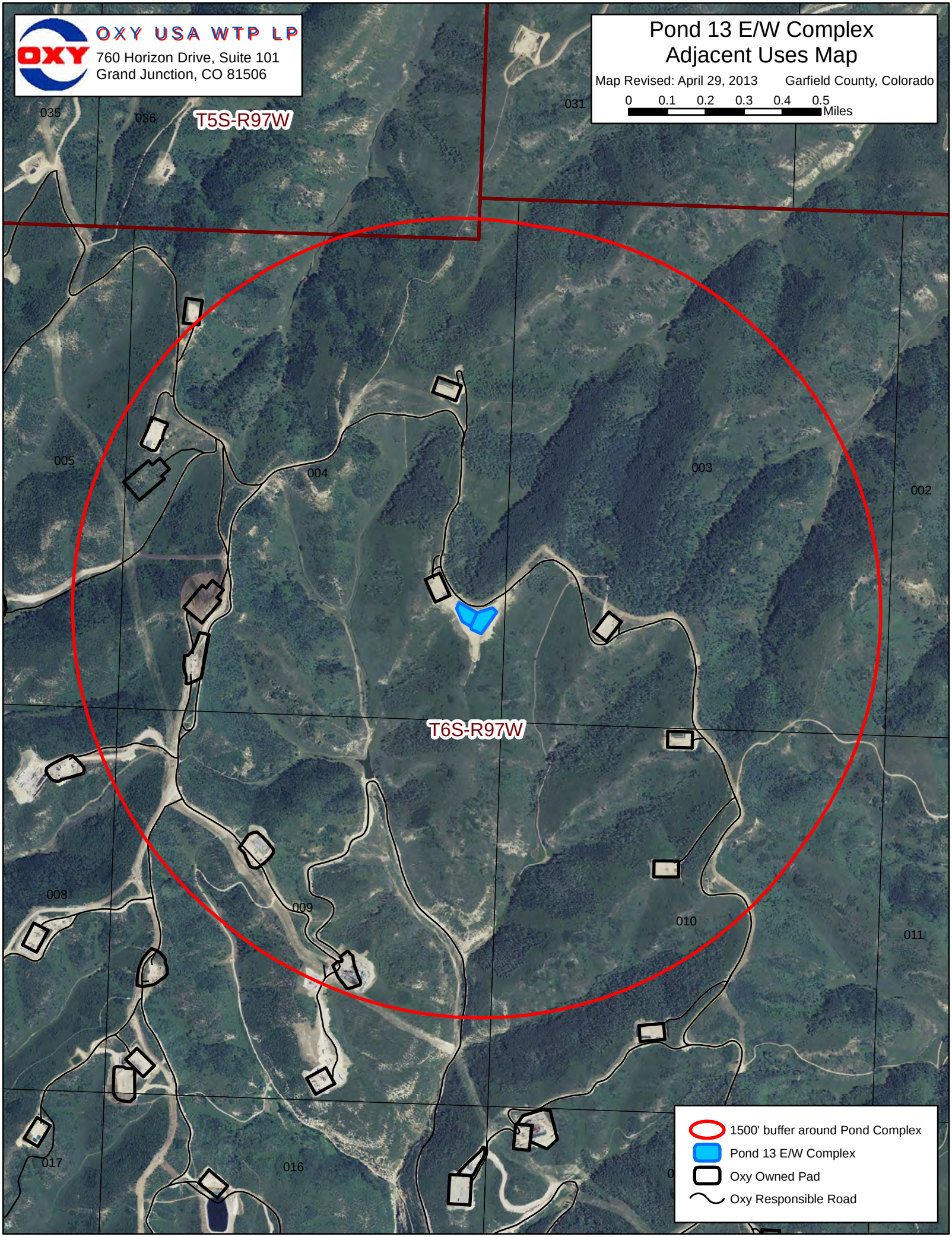
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Adjacent Uses Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.1 0.2 0.3 0.4 0.5
Miles
T5S-R97W
T6S-R97W
035
036
031
005
004
003
002
008
009
010
011
017
016
1500' buffer around Pond Complex
Pond 13 E/W Complex
Oxy Owned Pad
Oxy Responsible Road

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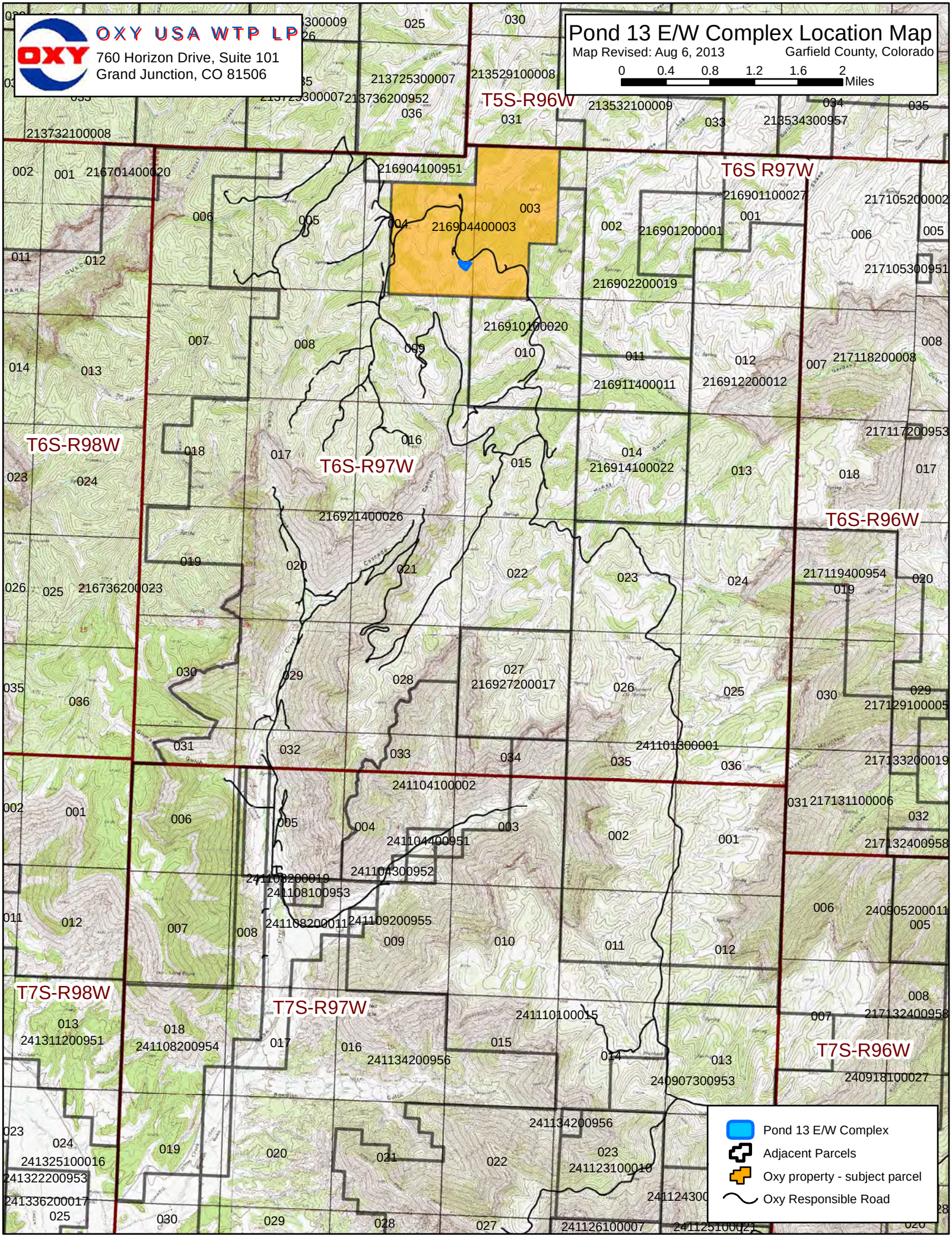
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex Location Map
Map Revised: Aug 6, 2013
Garfield County, Colorado
0 0.4 0.8 1.2 1.6 2 Miles
T5S-R96W
T6S R97W
T6S-R98W
T6S-R97W
T6S-R96W
T7S-R98W
T7S-R97W
T7S-R96W
216904100951
216904400003
216901100027
216901200001
216902200019
216910100020
216911400011
216912200012
216914100022
216921400026
216927200017
216736200023
241104100002
241104400951
241104300952
241108200019
241108100953
241108200011
241109200955
241311200951
241108200954
241134200956
241110100015
240907300953
241123100010
241325100016
241322200953
241336200017
241126100007
241125100021
Pond 13 E/W Complex
Adjacent Parcels
Oxy property - subject parcel
Oxy Responsible Road

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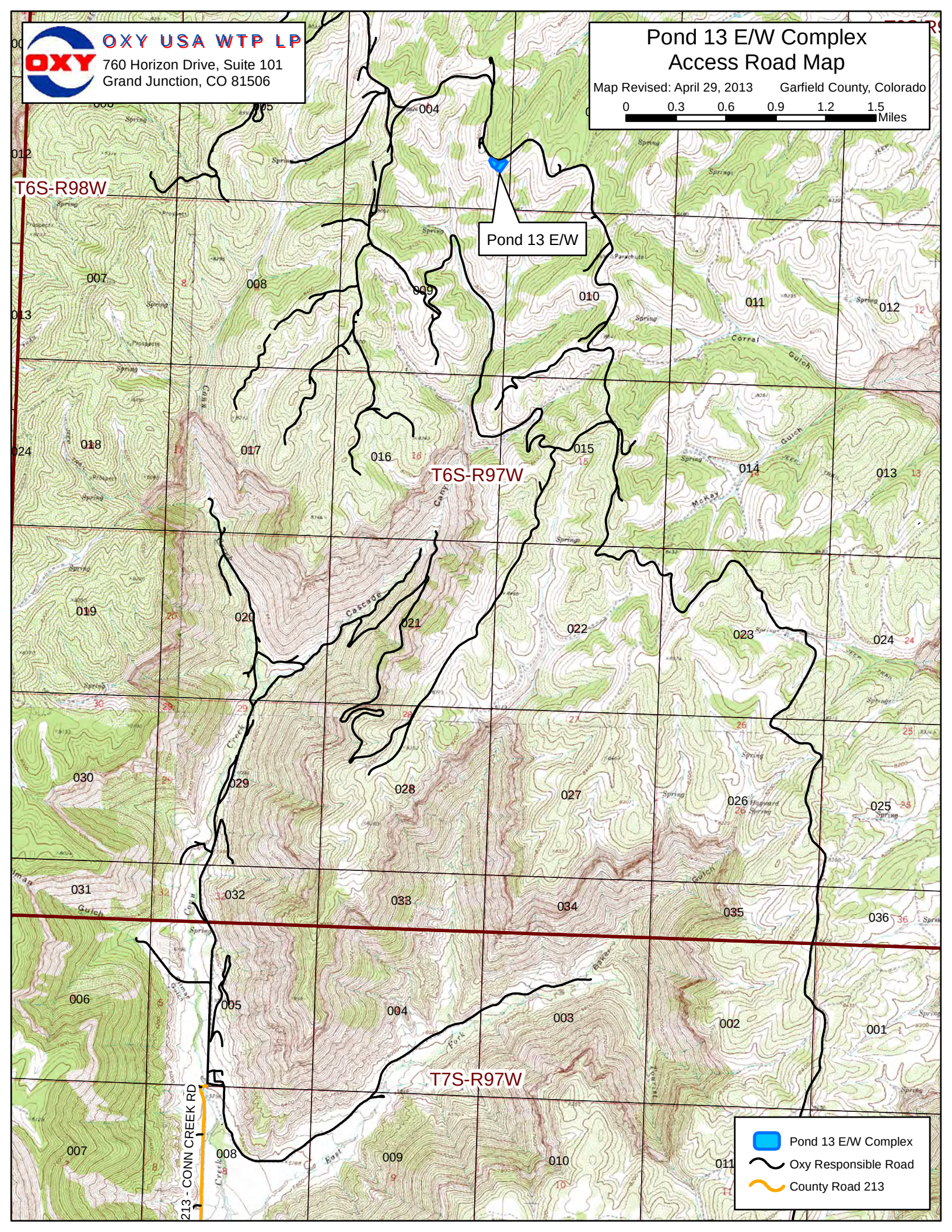
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Access Road Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.3 0.6 0.9 1.2 1.5 Miles
Pond 13 E/W
T6S-R98W
T6S-R97W
T7S-R97W
CONN CREEK RD - 213
Pond 13 E/W Complex
Oxy Responsible Road
County Road 213

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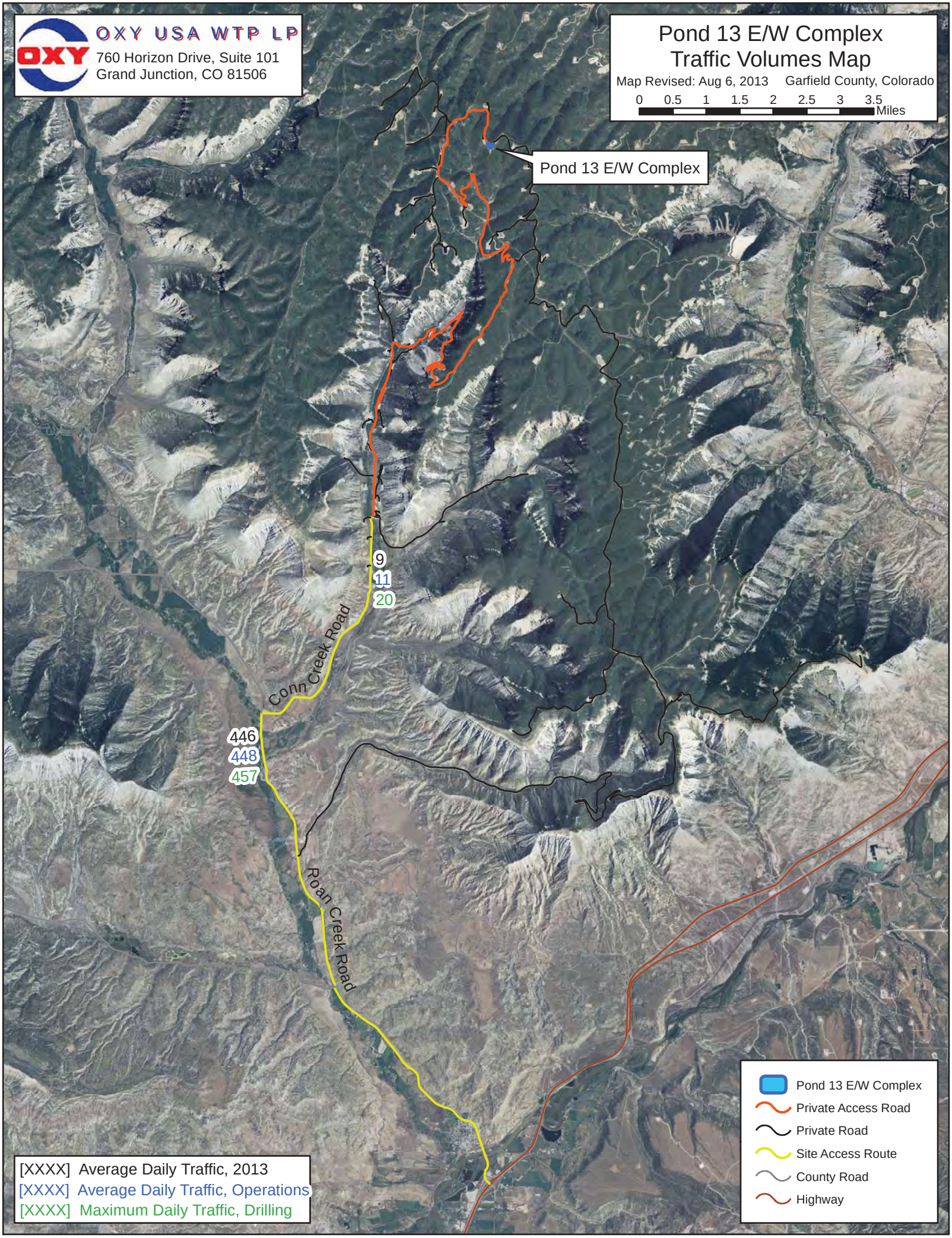
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Traffic Volumes Map
Map Revised: Aug 6, 2013
Garfield County, Colorado
0 0.5 1 1.5 2 2.5 3 3.5
Miles
Pond 13 E/W Complex
9
11
20
Conn Creek Road
446
448
457
Roan Creek Road
[XXXX] Average Daily Traffic, 2013
[XXXX] Average Daily Traffic, Operations
[XXXX] Maximum Daily Traffic, Drilling
Pond 13 E/W Complex
Private Access Road
Private Road
Site Access Route
County Road
Highway

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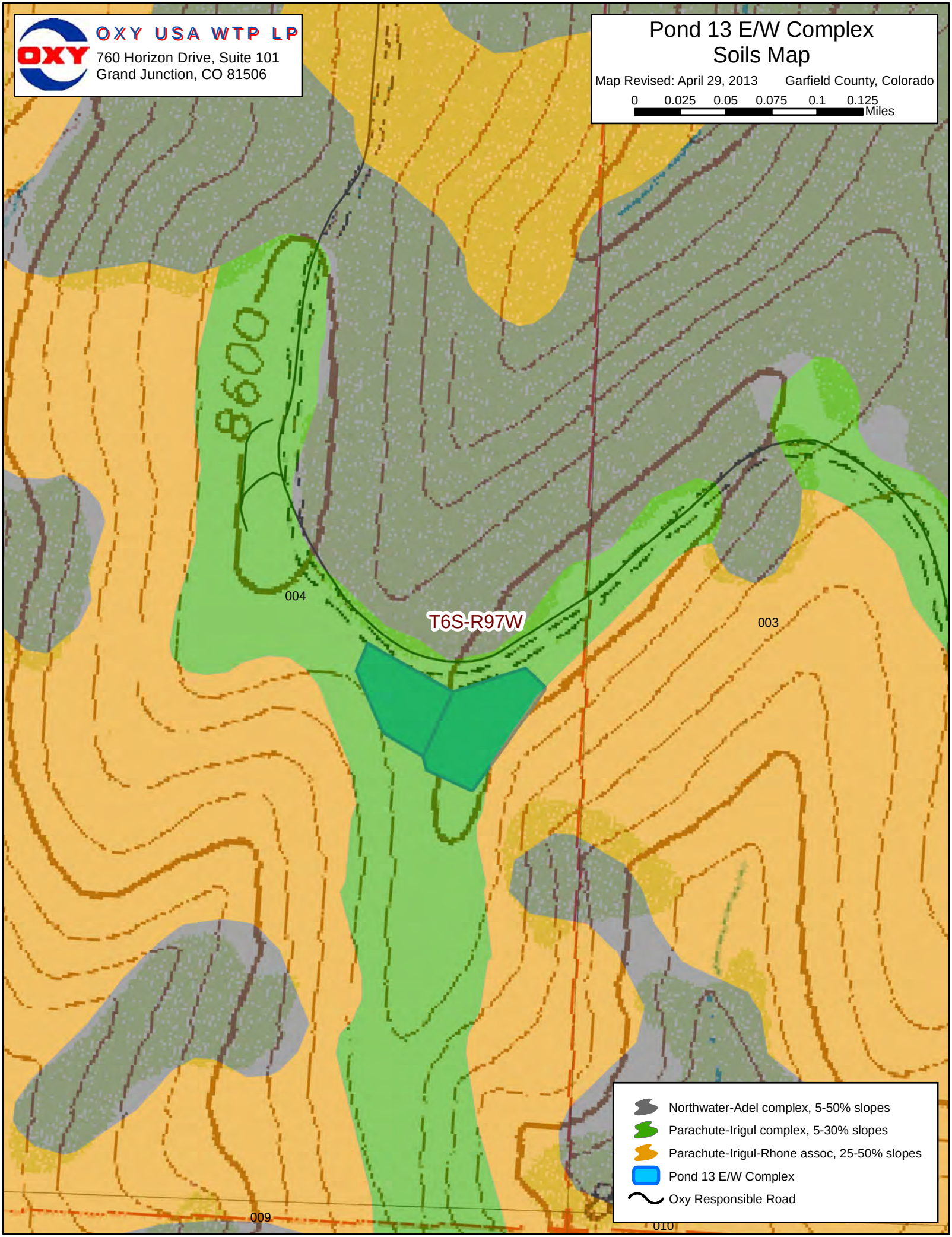
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Soils Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.025 0.05 0.075 0.1 0.125
Miles
8600
004
T6S-R97W
003
009
010
Northwater-Adel complex, 5-50% slopes
Parachute-Irigul complex, 5-30% slopes
Parachute-Irigul-Rhone assoc, 25-50% slopes
Pond 13 E/W Complex
Oxy Responsible Road

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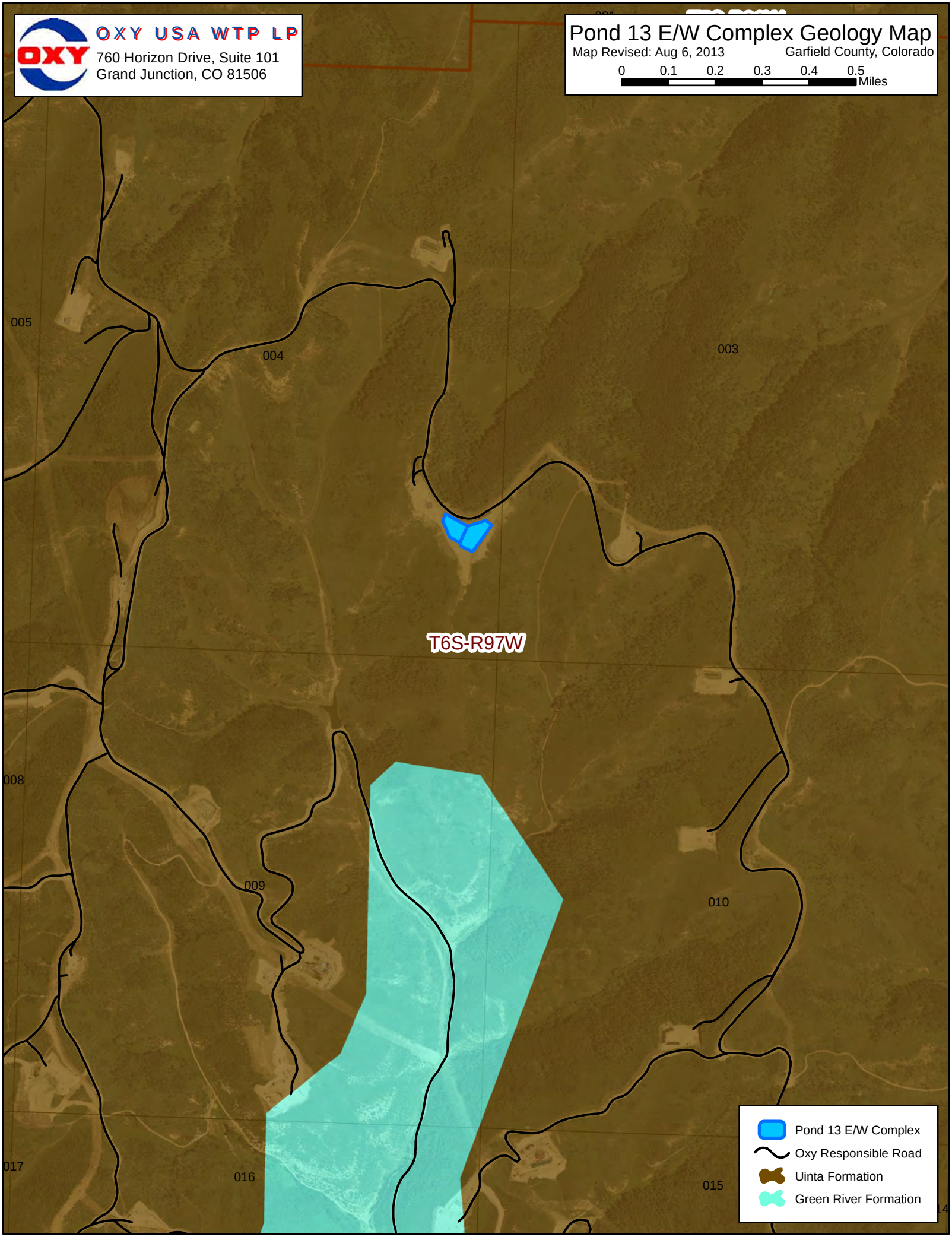
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex Geology Map
Map Revised: Aug 6, 2013
Garfield County, Colorado
0 0.1 0.2 0.3 0.4 0.5
Miles
005
004
003
T6S-R97W
008
009
010
017
016
015
Pond 13 E/W Complex
Oxy Responsible Road
Uinta Formation
Green River Formation

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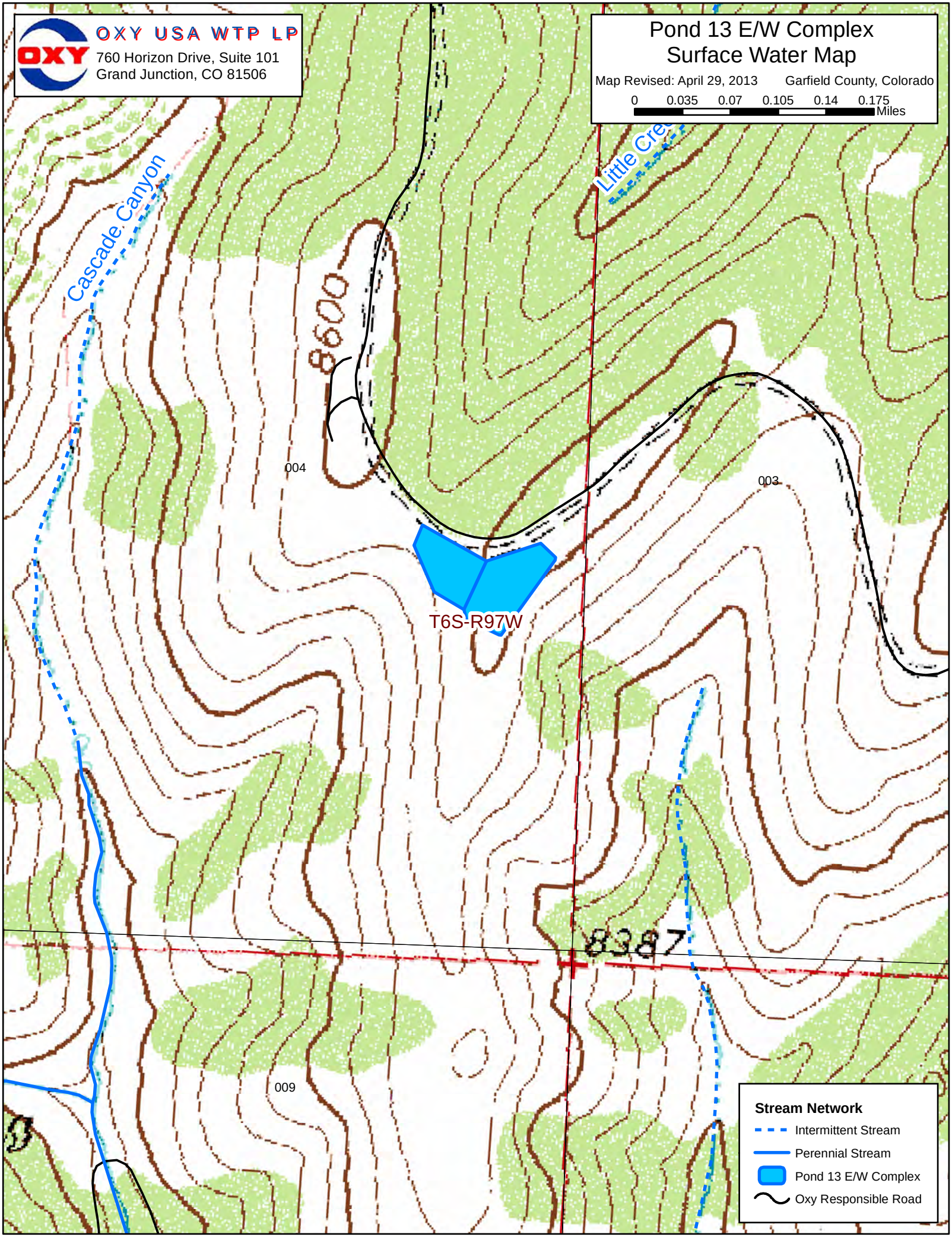
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Surface Water Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.035 0.07 0.105 0.14 0.175
Miles
Cascade Canyon
Little Cre
8600
8387
004
003
009
T6S-R97W
Stream Network
Intermittent Stream
Perennial Stream
Pond 13 E/W Complex
Oxy Responsible Road

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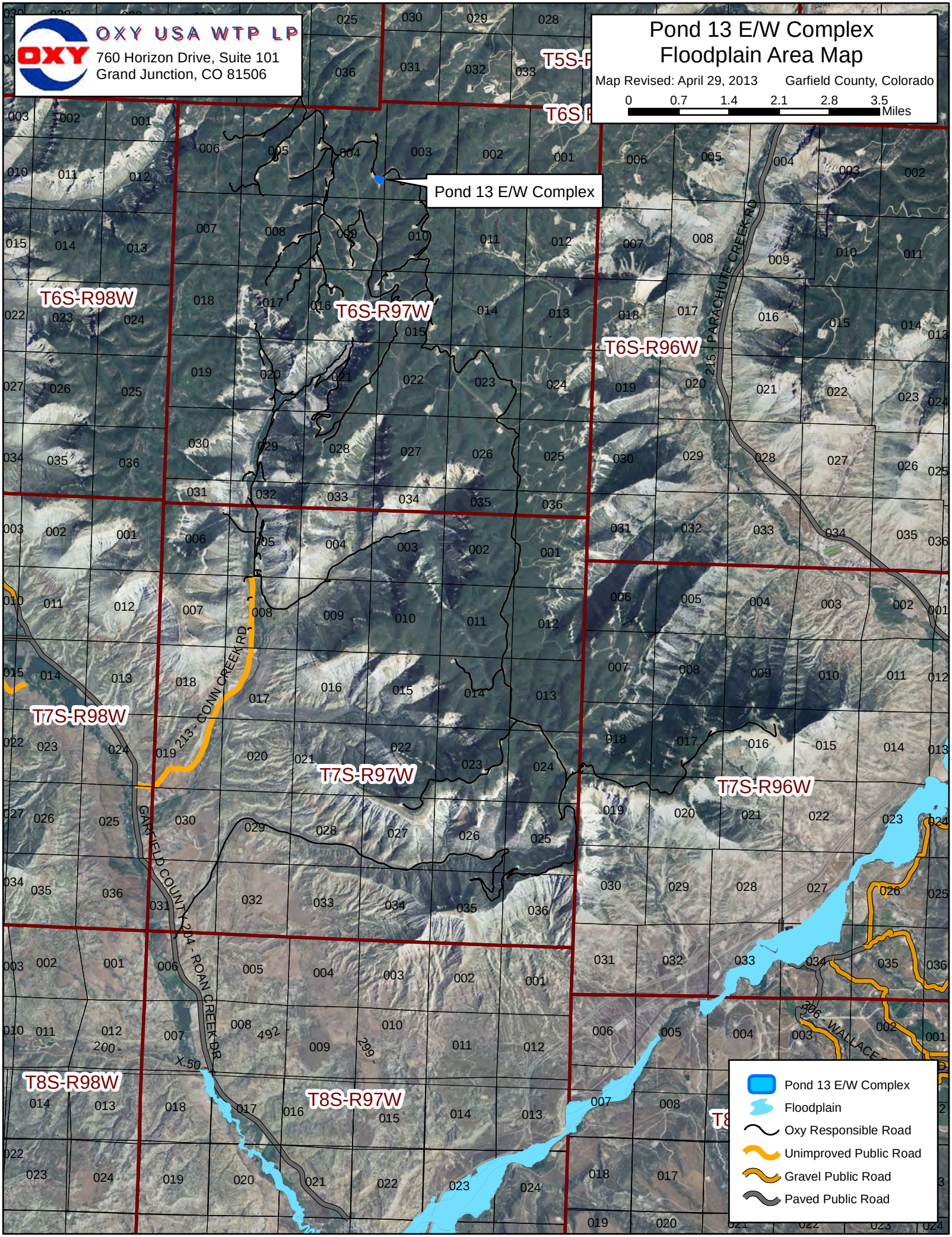
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Floodplain Area Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.7 1.4 2.1 2.8 3.5 Miles
Pond 13 E/W Complex
T5S-R
T6S-R
T6S-R98W
T6S-R97W
T6S-R96W
T7S-R98W
T7S-R97W
T7S-R96W
T8S-R98W
T8S-R97W
215 - PARACHUTE CREEK RD
213 - CONN CREEK RD
GARFIELD COUNTY 204 - ROAN CREEK DR
306 - WALLACE
Pond 13 E/W Complex
Floodplain
Oxy Responsible Road
Unimproved Public Road
Gravel Public Road
Paved Public Road

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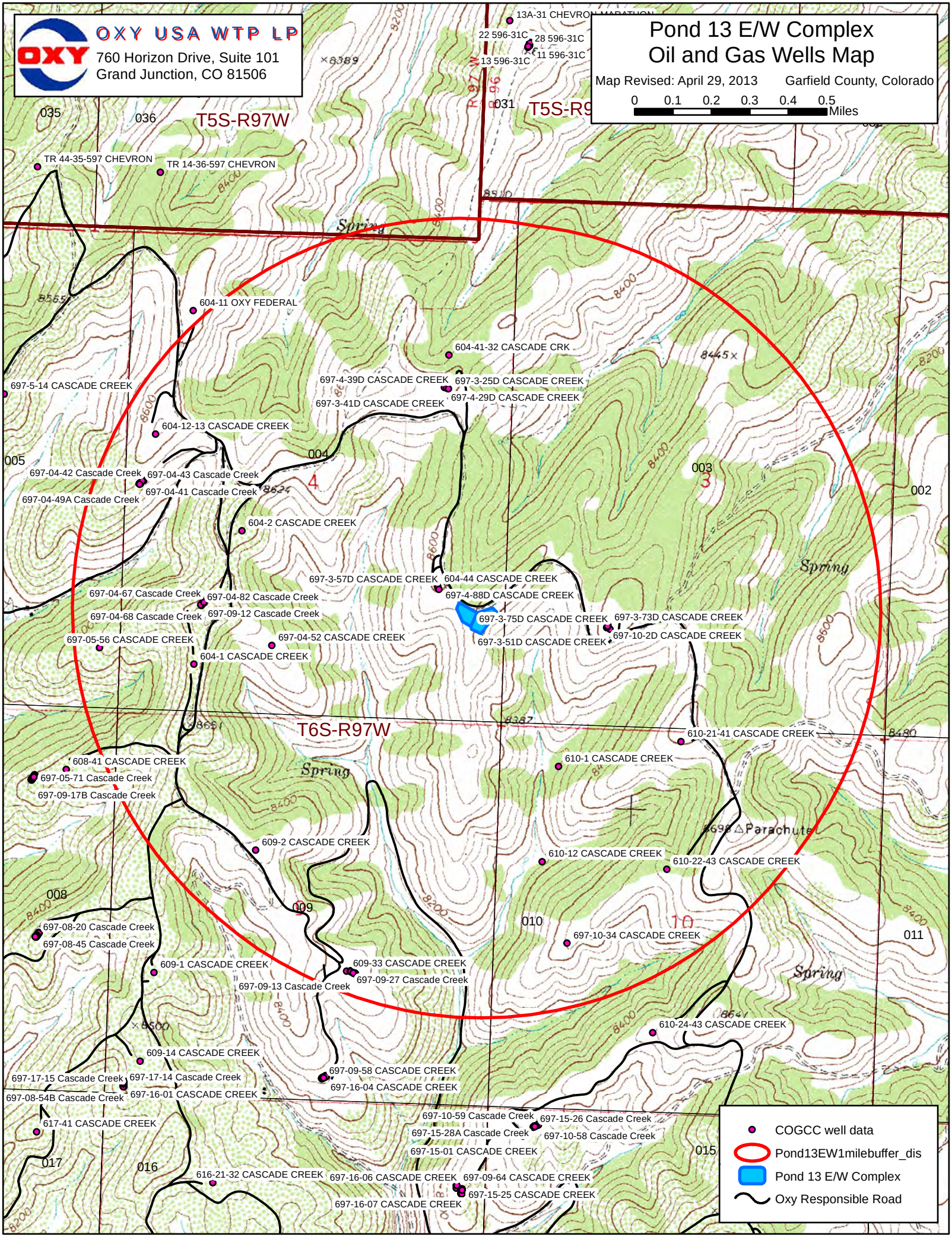
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Oil and Gas Wells Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.1 0.2 0.3 0.4 0.5 Miles
T5S-R97W
T6S-R97W
13A-31 CHEVRON MARATHON
22 596-31C
28 596-31C
11 596-31C
13 596-31C
TR 44-35-597 CHEVRON
TR 14-36-597 CHEVRON
604-11 OXY FEDERAL
604-41-32 CASCADE CRK
697-5-14 CASCADE CREEK
697-4-39D CASCADE CREEK
697-3-25D CASCADE CREEK
697-3-41D CASCADE CREEK
697-4-29D CASCADE CREEK
604-12-13 CASCADE CREEK
697-04-42 Cascade Creek
697-04-43 Cascade Creek
697-04-41 Cascade Creek
697-04-49A Cascade Creek
604-2 CASCADE CREEK
697-3-57D CASCADE CREEK
604-44 CASCADE CREEK
697-4-88D CASCADE CREEK
697-04-67 Cascade Creek
697-04-82 Cascade Creek
697-04-68 Cascade Creek
697-09-12 Cascade Creek
697-3-75D CASCADE CREEK
697-3-73D CASCADE CREEK
697-10-2D CASCADE CREEK
697-05-56 CASCADE CREEK
697-04-52 CASCADE CREEK
697-3-51D CASCADE CREEK
604-1 CASCADE CREEK
610-21-41 CASCADE CREEK
608-41 CASCADE CREEK
697-05-71 Cascade Creek
697-09-17B Cascade Creek
610-1 CASCADE CREEK
609-2 CASCADE CREEK
610-12 CASCADE CREEK
610-22-43 CASCADE CREEK
697-08-20 Cascade Creek
697-08-45 Cascade Creek
697-10-34 CASCADE CREEK
609-1 CASCADE CREEK
609-33 CASCADE CREEK
697-09-27 Cascade Creek
697-09-13 Cascade Creek
610-24-43 CASCADE CREEK
609-14 CASCADE CREEK
697-09-58 CASCADE CREEK
697-17-15 Cascade Creek
697-17-14 Cascade Creek
697-16-04 CASCADE CREEK
697-08-54B Cascade Creek
697-16-01 CASCADE CREEK
697-10-59 Cascade Creek
697-15-26 Cascade Creek
617-41 CASCADE CREEK
697-15-28A Cascade Creek
697-10-58 Cascade Creek
697-15-01 CASCADE CREEK
616-21-32 CASCADE CREEK
697-16-06 CASCADE CREEK
697-09-64 CASCADE CREEK
697-15-25 CASCADE CREEK
697-16-07 CASCADE CREEK
Parachute
Spring
COGCC well data
Pond13EW1milebuffer_dis
Pond 13 E/W Complex
Oxy Responsible Road

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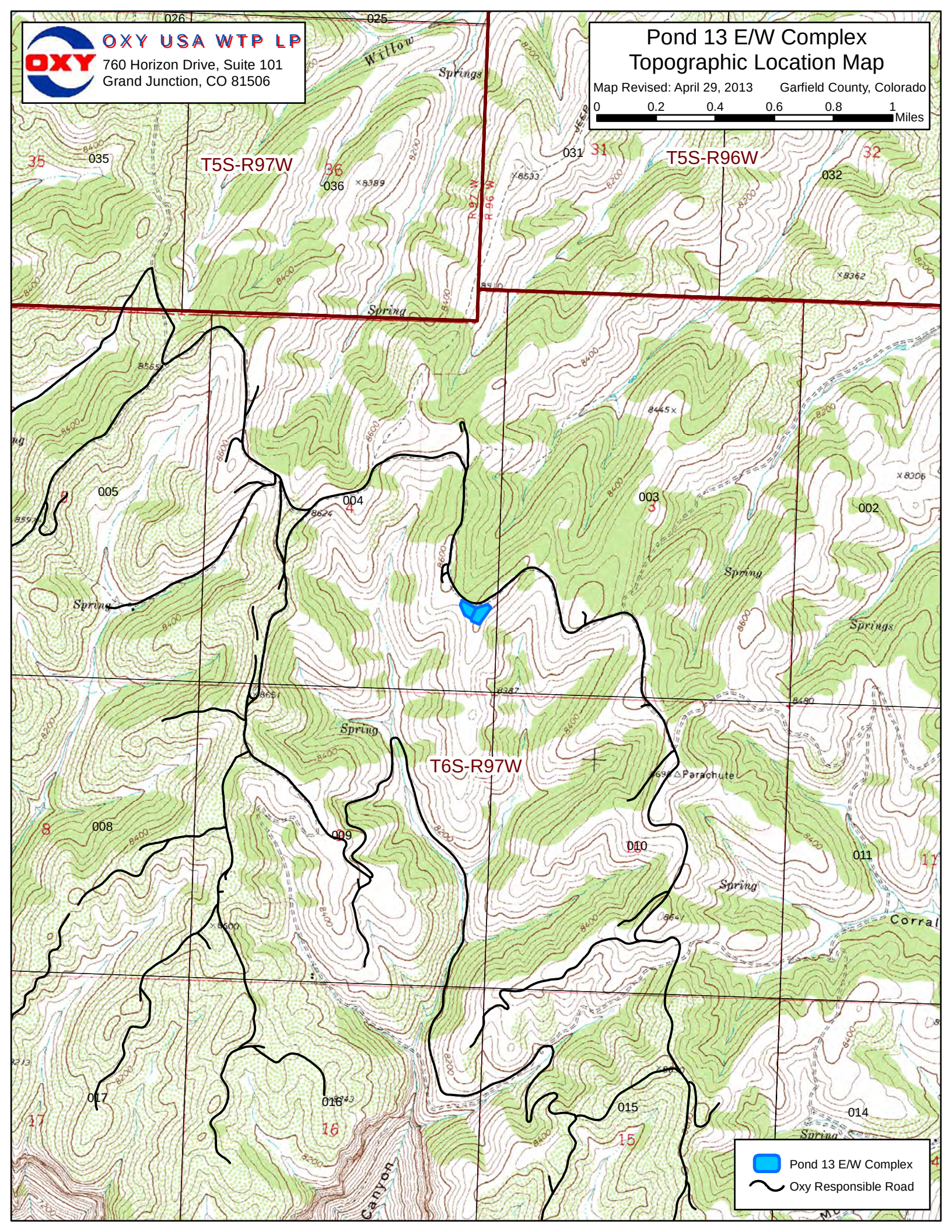
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Topographic Location Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.2 0.4 0.6 0.8 1 Miles
T5S-R97W
T5S-R96W
T6S-R97W
Pond 13 E/W Complex
Oxy Responsible Road

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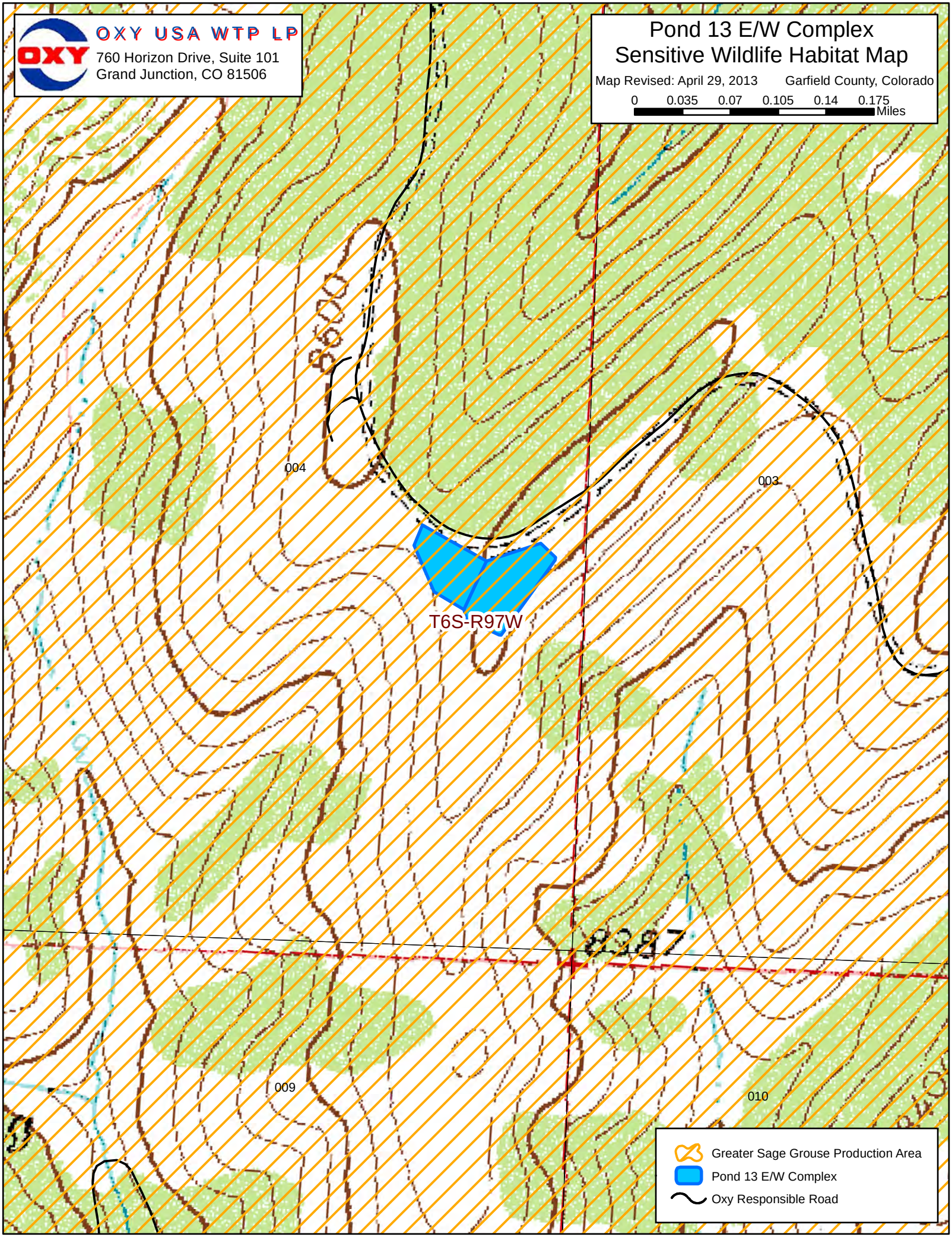
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Pond 13 E/W Complex
Sensitive Wildlife Habitat Map
Map Revised: April 29, 2013
Garfield County, Colorado
0 0.035 0.07 0.105 0.14 0.175
Miles
004
003
T6S-R97W
009
010
Greater Sage Grouse Production Area
Pond 13 E/W Complex
Oxy Responsible Road

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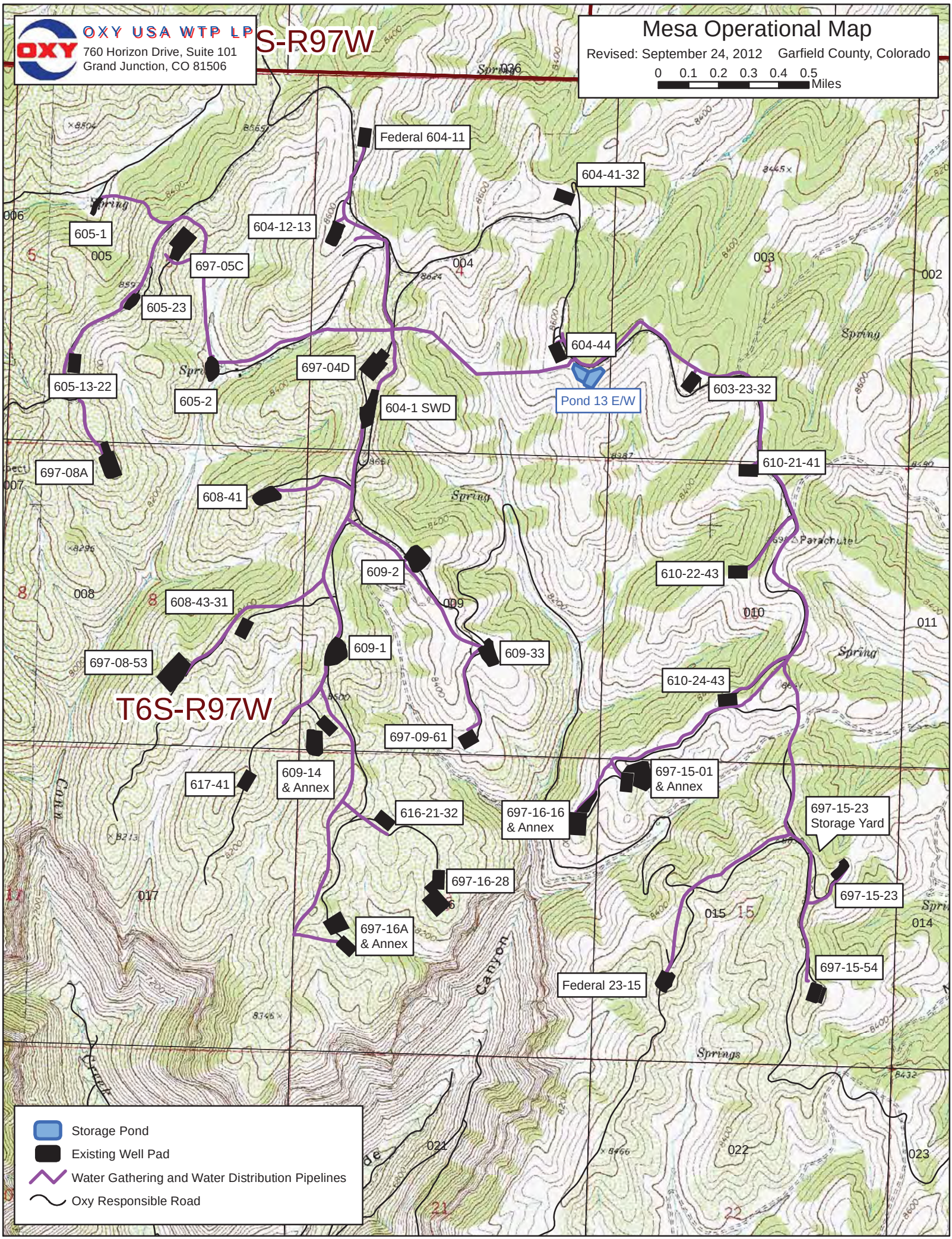
OXY USA WTP LP
760 Horizon Drive, Suite 101
Grand Junction, CO 81506
Mesa Operational Map
Revised: September 24, 2012
Garfield County, Colorado
0 0.1 0.2 0.3 0.4 0.5 Miles
T5S-R97W
T6S-R97W
Federal 604-11
604-41-32
604-12-13
605-1
697-05C
605-23
605-13-22
605-2
697-04D
604-1 SWD
604-44
Pond 13 E/W
603-23-32
610-21-41
697-08A
608-41
609-2
610-22-43
608-43-31
609-1
609-33
697-08-53
610-24-43
697-09-61
617-41
609-14
& Annex
697-15-01
& Annex
616-21-32
697-16-16
& Annex
697-15-23
Storage Yard
697-16-28
697-15-23
697-16A
& Annex
697-15-54
Federal 23-15
Storage Pond
Existing Well Pad
Water Gathering and Water Distribution Pipelines
Oxy Responsible Road

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NTC Response

OXY USA WTP LP

Pond 13 E/W
Centralized E&P Waste Management Facility

OA Project No. 013-0655

760 Horizon Drive, Suite 102
Grand Junction, CO 81506

TEL 970.263.7800
FAX 970.263.7456

www.olssonassociates.com

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October 22, 2013

Kathy Eastley
Senior Planner
Garfield County Community Development Department
108 8th Street, Suite 401
Glenwood Springs, CO 81601
keastley@garfield-county.com

Re: LIPA 7675 Oxy Pond 13 E&W – Water Impoundment/Material Handling

Dear Kathy,

Please find Oxy's response to your Not Technically Complete Letter of August 28, 2013. Included in this package are:

1. Response to questions.
2. Revised application with changes to the waiver requests.
3. Deed to the parcel which was omitted from the original application.
4. Revised Waiver Request.
5. Water Supply Plan including Nontributary Ground Water Analysis.
6. Wastewater Management Plan.
7. Oxy Mesa Operational Map (source of fluids and transportation pipelines).
8. Revised Project Description.
9. Revised Vicinity Map.
10. Revised Site Plan.
11. Signed Geohazard Report.
12. Letter from Oxy regarding Air Quality Permitting.

Please let us know if you need any additional information. Be advised that Craig Richardson is no longer with Olsson. I will be representing Oxy for this and future land use permitting.

Thank you for your consideration of this application.

Sincerely,

Jeff Hofman, AICP
Associate Scientist

Cc: Oxy
File

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OXY USA WTP LP

Pond 13 E/W Waste Management Facility

NTC Response

In regard to Garfield County's Not Technically Complete Letter dated August 28, 2013, Oxy has prepared the following responses:

1. **GarCo Comment:** Is this application resulting from a violation? It does not appear that the existing ponds are located within the area of a COGCC-approved well pad, if not located on a pad the pond would be required to obtain County permitting prior to construction. Can you provide information on this issue?

   Response: There is no COGCC violation. This is a COGCC approved Form 15 site. This facility is located immediately adjacent to Oxy's 604-44 pad (COGCC Facility ID: 335849).

2. **GarCo Comment:** The request for waiver of submittal requirements is vastly different from a request of waiver of the standards contained in the LUDC. A waiver of submittal of the Landscape Plan does not negate the requirement to satisfy the standards of the code contained in 7-303. The Director of Community Development may waive submittal requirements however only the BOCC may waive compliance with minimum standards. If you are requesting a waiver from the standard please add that to the application form and provide adequate justification for the Board to make a decision on the waiver.

   Response: We are requesting a waiver of submittal for the Landscape Plan (please see the Waiver Requests section of the application). No landscaping is being proposed for this site as it is located in a rural and remote area of Garfield County. The site is within a large property and only accessible via a private road system. We have addressed the landscape standards on page 7 of the Standards Analysis. If a Landscape Plan waiver is not required, please disregard the request.

3. **GarCo Comment:** The request for waiver of submittal of a Water Supply Plan and the Wastewater Management and System Plan are not appropriate and therefore the waiver is not granted. Regardless of the fact that you provide no information in support of the request for waiver the information in a Water Supply Plan and Wastewater Treatment Plan is necessary to determine if the water and wastewater systems proposed for the site are sufficient to serve the project. These plans are required even if no potable water or ISDS is planned, as it is these reports that will provide evidence that bottled water / porta-potties are sufficient to serve the intermittent employees at the site. Therefore please provide information compliant with Sections 4-203 (M) and 4-203 (N) of the LUDC.

   Response: We have removed the indication for a waiver of the submittal requirement for a Water Supply Plan and the Wastewater Management and System Plan from the Application form. Please see the Water Supply Plan and Wastewater Management and System Plan sections of the application for these submittal items.

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Grand Junction, CO 81506
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FAX 970.263.7456
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4. **GarCo Comment:** There is no indication that the project site is located within a Special Flood Hazard Area, nor is this a request for a PUD >5 acres or proposing 50 lots or greater, so there is no requirement for a Floodplain Analysis. This submittal requirement will not be waived as it simply is not applicable to this site.

   Response: Please disregard the waiver request for a Floodplain Analysis as it is not required for this application.

5. **GarCo Comment:** The Landscape Plan is a submittal requirement for all Limited Impact applications however Section 7-303 excludes industrial uses from a requirement to meet Landscape Standards making this submittal requirement 'not applicable'. No waiver is required.

   Response: Agreed. Please see response to Item 2 above.

6. **GarCo Comment:** The remainder of the items requested to be waived as submitted requirements- the Improvements Agreement and Development Agreement - are hereby waived as submittal requirements.

   Response: Noted.

7. **GarCo Comment:** The pre-application summary lists the parcel as being 10,303-acres, the application states that the site is 640-acres and the parcel number provided is shown as a 1,053.08-acre parcel. Please clarify.

   Response: The 10,303 acreage listed in the Preapplication Summary is incorrect. It is based on contiguous parcels of which this parcel, 216904400003, is a small part. The project is located on this smaller 640 acre parcel. This is the parcel referred to throughout the application. The 1,053.08 acre parcel is a larger parcel owned by Oxy that is adjacent to the project parcel.

8. **GarCo Comment:** The applicant is responsible for demonstrating legal and physical access to the site- are there easements or agreements related to the private road system? What are the physical characteristics of the road and does it meet County Standards in Article VII?

   Response: No easements exist for the private road system. It is completely contained within Oxy owned property. Please see the Access and Roadways Standards Waiver Request.

9. **GarCo Comment:** The application states that the fluids will be transported via pipelines to the ponds. How will the water be transported post-storage when it will be re-used? In the same pipeline? Trucked? This information is necessary to determine the potential impacts of the project.

   Response: All water will be transported to and from the site via water distribution pipelines. Please see the attached GIS map indicating distribution and gathering pipelines and well pad locations. The same water pipelines serve as inflow and outflow pipelines.

10. **GarCo Comment:** It does not appear that a full description of the proposal was included in the Project Description section of the submittal. There appears to be a significant amount of storage that may or may not be related to, or accessory, to the use of the impoundment- two areas on the site plan appear to be dedicated for storage yet no mention of this is found in the project description. Please provide additional information on what will be stored there and if the storage is directly related to the impoundments. If additional equipment, materials,

and supplies unrelated to the impoundment are proposed to be located on this site then a request must be made to add the use of "storage" into this application.

Response: Please see revised Project Description.

11. **GarCo Comment:** The site plan requirement has not been adequately addressed as indicated by the items below:

    a. Sheet 1 of 2 is unnecessary as a smaller vicinity map would suffice. It is confusing to have a "Site Plan" at a scale of 1" = 2000'.

       Response: Sheet 1 of 2 has been removed.

    b. Location and dimension of easements or location of the pipelines transporting the water to the site are required - one appears to be located at the north end of the project area, is this the only pipeline that will serve these impoundments?

       Response: The site plan has been revised.

    c. Does the legal description of the project area (Detail A Area) include 21.47-acres? The legal description doesn't include the acreage so it is difficult to ascertain what it incorporates. The pre-application summary indicates a project area of 17.67-acres which is resulting in confusion;

       Response: The legal description is for the whole parcel that the project is on. The Project Area Description below Detail A is the legal description for the project area and includes the square footage and area of the project.

    d. Elevation drawings showing existing grade, finished grade, and height of the proposed structures above existing grade are required.

       Response: The site plan has been revised.

    e. The location of fencing is shown around the ponds, will the storage areas be fenced?

       Response: No hazardous material or other items requiring fencing will be kept at the storage area. Fencing is not proposed at this time.

12. **GarCo Comment:** Provide information and a comprehensive map that indicates location of the wellpads from which the water will be produced, along with the location of pipelines and an indication of all surface owners related to the above. If the well pads and pipes are all on Oxy-owned land then please provide a statement to that effect.

    Response: A GIS map showing the location of pipelines and well pads is included with this letter and will be included in the referral copies. All pads and pipelines are on Oxy-owned land.

13. **GarCo Comment:** The NRCS soil survey was provided which indicates the soils type found on-site, however no analysis of that type of soil impact on the proposed development was included. A qualified individual is required to provide this information however there is no indication who completed the analysis.

    Response: A revised and signed Geologic Hazards report is included in this response. Please find the signature of the qualified Geologist who prepared the report on last page.

14. **GarCo Comment:** The Geologic Hazards report is not signed nor is there any indication of a qualified individual completing the information.

    Response: A signed Geologic Hazards report is included in this response. Please find the signature of the qualified Geologist who prepared the report on last page.

15. **GarCo Comment:** Please provide specific information related to fire protection at this site, the associated with this use?

    Response: This site will comply with Oxy's emergency response at all times. Fire protection is addressed in the plan included with the original submittal. See Appendix A, starting at pg. 35.

16. **GarCo Comment:** What air quality permits will be required for operation of this facility? It is not sufficient to respond to the air quality standard that all necessary permits will be obtained. Since this is an existing facility one would assume that all required permits had been obtained upon operation of the ponds. Please provide copies of all air permits as well as additional demonstration of how you will comply with this standard.

    Response: See attached letter.

17. **GarCo Comment:** There does not appear to be any information related to netting and escape steps from the ponds as typically required by CPW. Please respond

    Response: The CPW will review the application as part of the Garfield County and COGCC permitting process. The location is currently improved with flagging at regular intervals and 8-foot high chain link fencing. The CPW will notify the applicant of additional wildlife BMP requirements, and they will be required as part of the COGCC approval and enforced during COGCC inspections.