



Great Western  
OIL & GAS COMPANY

1700 Broadway  
Suite 650  
Denver, CO 80290  
July 30, 2012

Phone: 303.398.0302  
Facsimile: 866.742.1784  
www.gwogco.com

Mr. Clay Kimmi, P.E., CFM  
Drainage & Floodplain Engineer  
Weld County Public Works  
1111 H Street  
PO Box 758  
Greeley, Colorado 80632

**RE: Flood Hazard Development Permit  
Great Western H-Y Well Pad  
Weld County, Colorado  
LRA Project No. 0212016.00**

Dear Mr. Kimmi:

Enclosed is the documentation pertaining to the Flood Hazard Development Permit (FHDP) Application for the Great Western H-Y Well Pad. Please let me voice that we share your concerns regarding potential impacts to the waterway. We do appreciate your willingness to work with us to reach a resolve and move forward in a responsible fashion.

The following items are included as part of the FHDP application:

- Signed FHDP application form (one original and three copies)
- Supplemental Requirements (one original and three copies)
- FHDP Floodplain Work Maps
- Surface Use Agreement
- Engineer's Certification
- \$180.00 Application Fee

A CD containing the HEC-RAS model files and supporting documents are also enclosed as part of this submittal.

Please contact me directly if you have any questions or require additional information to complete your review.

Sincerely,  
GREAT WESTERN OIL & GAS COMPANY, LLC

Jani Keidel  
Permitting and Regulatory Analyst

enclosures



## FLOOD HAZARD DEVELOPMENT PERMIT (FHDP) APPLICATION

FOR PUBLIC WORKS DEPARTMENT USE RECEIPT/AMOUNT # _____/\$_____ APPLICATION RECEIVED BY _____	DATE RECEIVED: _____ CASE # ASSIGNED: _____ PUBLIC WORKS REVIEWER: _____
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Parcel Number: 0 8 0 7 - 2 9 - 0 - 0 0 - 0 5 1

(12 digit number - found on Tax I.D. Information, obtainable at the Weld County Assessor's Office, or [www.co.weld.co.us](http://www.co.weld.co.us)).

Waterway Name: Cache La Poudre Flood Insurance Rate Map (FIRM) Panel #: 080266- 0605 D

Legal Description NE 1/4, NW 1/4, Section 29, Township 6 North, Range 67 West

**FEE OWNER(S) OF THE PROPERTY:**

Name: Phillip & Ellen Yastrow & Randall L. Hocking  
 Work Phone # \_\_\_\_\_ Home Phone # 970-590-6587 Email Address \_\_\_\_\_  
 Street Address: P.O. Box 332  
 City/State/Zip Code Windsor, CO 80550

**APPLICANT OR AUTHORIZED AGENT** (See Below: Authorization must accompany all applications signed by Authorized Agent)

Name: Tom Rand - Great Western Oil & Gas CO., LLC  
 Work Phone # 303-398-0302 Home Phone # \_\_\_\_\_ Email Address \_\_\_\_\_  
 Street Address: 1700 Broadway, Suite #650  
 City/State/Zip Code Denver, CO 80290

**1. General Description of Proposed Development: (Please check all that apply)**

- | <u>Residential</u>                                | <u>Non-Residential</u>                               | <u>Manufactured or Mobile Home</u>                  |
|---|--|---|
| <input type="checkbox"/> New Construction         | <input checked="" type="checkbox"/> New Construction | <input type="checkbox"/> On Single Lot              |
| <input type="checkbox"/> Addition or Improvements | <input type="checkbox"/> Addition or Improvements    | <input type="checkbox"/> In Mobile Home Park        |
| <input type="checkbox"/> In Subdivision           | <input type="checkbox"/> Fill Material               | <input type="checkbox"/> Fill Material              |
| <input type="checkbox"/> Fill Material            | <input type="checkbox"/> Watercourse Alteration      | <input type="checkbox"/> In Mobile Home Subdivision |

Other \_\_\_\_\_

2. Brief Narrative Description of Proposed Development: Infrastructure to support oil and gas operations consisting of well heads, separators and tank batteries.
3. Property located in designated FW (Floodway) District? Yes X No \_\_\_\_\_ (If yes, certification and engineering calculations shall be provided by a registered Professional Engineer (P.E.) that the property use or structure, when built, will not cause any increase in floodwater levels during an intermediate regional flood (100-year flood) and will not limit or restrict the flow capacity of the floodway.)
4. Is the property located in a designated FP-1 (100-yr Floodplain) or FP-2 (500-yr Floodplain) District?  
 Yes X No \_\_\_\_\_

Signature: Owner or Authorized Agent	Tom Rand - Vice President Great Western Oil & Gas CO., LLC Signature: Owner or Authorized Agent
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(If an Authorized Agent signs, a letter of authorization from all fee owners must be included with the application. If a corporation is the fee owner, notarized evidence must be included showing the signatory has to legal authority to sign for the corporation.)

NOTES

# RECEIPT

DATE 7/31/12 NO. 027233

RECEIVED FROM Great Western Oil & Gas

ADDRESS \_\_\_\_\_

FOR FAD P - H-Y WELL PAD \$ 180<sup>00</sup>

CR 9237

ACCOUNT		HOW PAID	
AMT. OF ACCOUNT		CASH	
AMT. PAID	<u>180 -</u>	CHECK	<input checked="" type="checkbox"/>
BALANCE DUE		MONEY ORDER	

BY M Caudill

Great Western Oil and Gas

1700 Broadway Ste 650, DENVER, CO 80290 303/398-0302

INVOICE

DATE

DESCRIPTION

NET

07302012CKREQ

07/30/12

180.00

VENDOR WEL0012 CHECK 9237 DATE 07/30/12 180.00

DOCUMENT HAS A COLORED BACKGROUND. SECURITY FEATURES LISTED ON BACK.

Great Western Oil and Gas  
1700 Broadway Ste 650  
DENVER, CO 80290

JPMorgan Chase Bank, NA  
Columbus, OH  
66-1644/441

PAY THIS AMOUNT:

\*\*\*180 Dollars and No Cents

CHECK NO	CHECK DATE	CHECK AMOUNT
9237	07/30/12	\$*****180.00

PAY TO THE ORDER OF Weld County Public Works Dept  
1111 H Street  
P.O. Box 758  
Greeley CO 80632



⑈0009237⑈ ⑆044115443⑆ 937305027⑈

**JULY 2012**

**FLOOD HAZARD DEVELOPMENT  
PERMIT APPLICATION  
FOR  
*Great Western H-Y Well Pad  
Section 29, T6N, R67W, 6<sup>th</sup> P.M.  
Weld County, Colorado***

*Prepared for:*

**GREAT WESTERN OIL & GAS COMPANY, LLC  
503 Main Street  
Windsor, Colorado 80550  
(970) 686-8831**

*Prepared by:*

**LAMP, RYNEARSON & ASSOCIATES, INC.  
4715 Innovation Drive, Suite 100  
Fort Collins, Colorado 80525  
(970) 226-0342**



**LAMP RYNEARSON  
& ASSOCIATES  
ENGINEERS | SURVEYORS | PLANNERS**

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LAMP RYNEARSON  
& ASSOCIATES  
ENGINEERS | SURVEYORS | PLANNERS

## ENGINEER'S CERTIFICATION

I hereby certify that this Flood Hazard Development Permit Application for the Great Western H-Y Well Pad located in Section 29, T6N, R67W, 6<sup>th</sup> P.M., Weld County, CO was prepared by me (or under my direct supervision) in accordance with the provisions of the Weld County Floodplain Management standards for the owners thereof.

  
Omar R. Herrera, PE  
Colorado Registered Professional Engineer No. 42160

  
7/30/12  
Date

# FLOOD HAZARD DEVELOPMENT PERMIT WRITTEN PROJECT NARRATIVE

SECTION 29, T6N, R67W, 6<sup>TH</sup> P.M.  
WELD COUNTY, CO

## Project Location

The Great Western H-Y Well Pad (Site) is located on a parcel of land in the northeast quarter of the northwest quarter of Section 29, Township 6 North, Range 67 West of the 6<sup>th</sup> Principal Meridian, Weld County, State of Colorado. The Site is generally surrounded by agricultural farmlands. More specifically, the Site is bounded on the north by the Cache la Poudre River, to the west by an irrigation ditch and pond, to the east by ponds, and to the south by irrigation ditches and agricultural farmlands.

## Project Background

The Site was constructed by grading existing fill located on the aforementioned parcel. Prior to construction of the well pad, the existing fill was placed within the floodplain of the Cache La Poudre River by the land owner, with approximately half of the fill located within the defined floodway limit. A Surface Use Agreement (Refer to Appendix B) was executed with the land owner prior to construction of the well pad. Currently, fourteen well heads are established on the well pad with the intention of installing the remaining necessary infrastructure to begin production activities.

## Purpose

The purpose of the analysis was to determine the impacts to the existing floodwater of the Cache la Poudre River due to construction of the Site from fill materials originally placed within the floodplain/floodway by the land owner. Impacts due to proposed production related infrastructure located on the well pad was also evaluated. The following is a summary of the methods and assumptions used in the HEC-RAS analysis performed by Lamp Rynearson & Associates (LRA) as part of the Flood Hazard Development Permit (FHDP) Application for the Site.

## Flood Hazard Study Background

The HEC-RAS model used as the basis of analysis was obtained from Anderson Consulting Engineers and has been accepted by FEMA as a revision to Community Panel No. 0802660605D (Refer to Appendix D) and associated Flood Insurance Study (FIS) which contains the Site. Within the model, the Site is located between existing cross-section nos. 134610 and 137135 along the reach designated as CLPR:WCR13-HLDFFP. This Anderson base model does not include any fill within the Site area. Subsequent to this model, fill material (designated as intermediate fill) was placed within the Site area by the land owner (Refer to Intermediate Fill Map in Appendix C). The well pad was subsequently constructed by grading the Intermediate Fill (Refer to Proposed Conditions Map in Appendix C).

## **Cross-Sections & Survey Data**

Three proposed cross-sections were developed for the Site using an AutoCAD drawing of the surveyed Intermediate Fill and well pad topography (Refer to Overall Site & Conveyance Map in Appendix C). These cross-section alignments were then surveyed by Uintah Engineering & Land Surveying on 7/9/2012 and used within the various models. The survey datum used for the proposed cross-sections was tied to the same datum used in the original Anderson model (NGVD 29). Due to the datum difference, the cross-section elevations were then compared to the Intermediate Fill and well pad elevations to ensure they were within tolerance.

## **Cross Section Geometry**

Proposed cross-section stationing was estimated within AutoCAD using a FEMA Map and Weld County Exhibit (Refer to Appendix D) overlain by the surveyed fill topography and developed cross-sections. The resulting station numbers for the new sections were 135049, 135325, and 135595. These sections are bounded within existing cross-section nos. 134610 and 137135. Existing cross-section parameters were extrapolated through the proposed cross-sections to determine parameters such as reach lengths, Manning's n values, bank stations, and contraction/expansion coefficients.

## **Models**

Based on correspondence with Weld County, the following model types were analyzed:

**Current Effective Model (CEM):** This is the CEM run by Anderson in HEC-RAS version 3.1.1. (Refer to Appendix D for HEC-RAS version 3.1.1 printout)

**Duplicate Effective Model (DEM):** This is the same Anderson model run in HEC-RAS version 4.1.0 (Refer to Appendix D for HEC-RAS version 4.1.0 printout). This model was compared with the CEM to identify and account for deviations in the results due to the version change.

**Corrected Effective Model – Calibrated (CEM-C):** The purpose of creating this model was to calibrate the newly added cross-sections with the DEM. The three proposed cross-sections representing the Site were added to the DEM. Modifications were made to the topography of cross-section nos. 135049 and 135325 to estimate the original grades that existed prior to the intermediate fill placement. Modified elevations were based on best available data and extrapolated from the bordering topography from the survey drawing of the Intermediate Fill (Refer to Station-Elevation Tables in Appendix D). Encroachments were then added to the new cross-sections through an iterative process and calibrated as closely as possible to the DEM. The floodway encroachments were also checked for continuity with the floodway limits pertaining to existing bounding cross-section nos. 134610 and 137135 (Refer to Overall Site & Conveyance Map in Appendix C). These floodway encroachment limits were maintained throughout all subsequent models.

**Corrected Effective Model – Intermediate Fill (CEM-IF):** Modifications were made to the topography of cross-section nos. 135049 and 135325 in the CEM-OG to represent the intermediate fill geometry (Refer to the Station-Elevation Tables in Appendix D).

**Proposed Conditions Model (PCM):** Un-modified survey data was used for the three cross-sections to represent the existing well pad (Refer to the Station-Elevation Tables in Appendix D). Results were compared to the CEM-IF with any deviations noted.

## Results

Results were viewed from the lowest proposed cross-section (135049) proceeding up-stream as no downstream stations were affected. No deviations were noted between the CEM-IF and the PCM from station 138575 to the upper-most station. Therefore, the following table presents the stations of interest. Refer to enclosed modeling Files CD containing the HEC-RAS files for the DEM, CEM-OG, CEM-IF, and the PCM.

Table of Results					
Section No	Parameter	Current Effective Version 3.1.1	Duplicated Effective Version 4.1.0	Corrective Effective Intermediate Fill	Proposed Conditions GW H-Y Pad
137135	W.S. Elev 100-Year (ft)	4774.89	4774.88	4776.06	4776.06
	W.S. Elev 1-ft FW (ft)	4775.75	4775.78	4776.83	4776.83
	Prof. Delta W.S. (ft)	0.86	0.90	0.77	0.77
	Velocity (ft/s)	2.2	2.2	1.67	1.67
135595	W.S. Elev 100-Year (ft)	-	-	4774.40	4774.40
	W.S. Elev 1-ft FW (ft)	-	-	4774.54	4774.54
	Prof. Delta W.S. (ft)	-	-	0.13	0.13
	Velocity (ft/s)	-	-	3.17	3.17
135325	W.S. Elev 100-Year (ft)	-	-	<b>4772.53</b>	<b>4772.53</b>
	W.S. Elev 1-ft FW (ft)	-	-	4772.67	4772.67
	Prof. Delta W.S. (ft)	-	-	0.15	0.15
	Velocity (ft/s)	-	-	4.40	4.40
135049	W.S. Elev 100-Year (ft)	-	-	4771.51	4771.51
	W.S. Elev 1-ft FW (ft)	-	-	4771.56	4771.56
	Prof. Delta W.S. (ft)	-	-	0.05	0.05
	Velocity (ft/s)	-	-	2.85	2.85

**CEM and DEM:** The deviations between HEC-RAS versions were insignificant and occurred mainly toward the upper-most stations with the largest deviation of 0.3 ft/s between velocities and 0.2 ft between water surface deltas. Therefore, the DEM was nearly a replica of the original 3.1.1 version.

**CEM-IF and PCM:** Since no grading operations pertaining to the construction of the well pad took place below the 1-ft FW or 100-year water surface elevations, no deviations were noted between water surface elevations or velocities. Thus, it was concluded that the construction of the H-Y Well Pad resulted in no impact to the 1-ft FW or 100-year water surface elevations between the CEM-IF and PCM conditions. In addition, structures such as batteries and buildings placed on top of the pad would have no impact on water surface elevations as the finish grade of the pad is above the 100-year water surface elevations in exceedance of 1-ft ( $\geq 4773.53'$ ).

**BASE FLOOD ELEVATION (BFE):** The BFE corresponds to the 100-year water surface elevation in cross-section 135325 and is equal to 4772.53'.

# FLOODPLAIN MANAGEMENT STANDARDS

## SECTION 29, T6N, R67W, 6<sup>TH</sup> P.M. WELD COUNTY, CO GREAT WESTERN H-Y WELL PAD

### FLOODPLAIN MANAGEMENT STANDARDS

The Public Works Department shall not approve a Flood Hazard Development Permit until it has been determined that all applicable standards specified in Section 23-2-480 of the Weld County Code, have been met by the applicant. The following floodplain management standards apply:

1. The applicant has met all applicable conditions listed in Section 23-5-250 or 23 -5-260 of the Weld County Code.

**This FHDP meets all applicable conditions listed in Section 23-5-260 of the Weld County Code. For additional information on how these conditions have been met, please refer to the FHDP Application for Great Western H-Y Well Pad, Weld County, CO.**

2. If a structure is to be elevated in order to meet the floodproofing requirements, the property owner shall certify that the lowest floor is elevated (for existing structures which are being substantially improved) or will be built (for new structures) to the level, or above, the regulatory flood datum. The certificate shall include the elevation of the highest adjacent grade (HAG), the lowest adjacent grade (LAG), and the existing (for substantially improved structures) or proposed (for new structures) elevation of the lowest floor of the structure. The ground elevations and elevation of the lowest floor of any existing structure shall be certified to be accurate by a licensed surveyor or registered engineer. **The regulatory flood datum is identified as being one foot (1.0 ft) above the water surface elevation of an intermediate regional flood, also known as the Base Flood Elevation (BFE).**

**N/A - The intermediate fill and existing Great Western H-Y Well Pad is located above the BFE. Please reference the written project narrative for a description of how the BFE was established.**

3. A registered Professional Engineer (P.E.) shall certify that any non-residential structures which are not elevated in order to be floodproofed are designed so the structure is watertight below the elevation of the regulatory flood datum and that the structures are designed to be capable of resisting the hydrostatic and hydrodynamic forces expected at the building site during an intermediate regional flood. The Floodproofing Certificate from the Federal Emergency Management Agency shall include the elevation in feet NGVD-29 or NAVD-88 above the BFE at the development site, and the proposed elevation of the lowest floor of any structures. Alternatively, as a matter of public safety, Weld County staff may require flood venting for all new construction and substantially improved structures to automatically equalize hydrostatic flood forces on exterior walls.

**The existing Great Western H-Y Well Pad and proposed infrastructure is located above the BFE. Please reference the written project narrative for a description of how the BFE was established.**

4. A registered Professional Engineer (P.E.) shall certify that all new or replacement domestic water wells or water supply, treatment, or storage systems are designed to prevent inundation or infiltration of floodwater into such system by an intermediate regional flood (100-year flood).

**N/A – No new or replacement of domestic water wells or water supply, treatment, or storage systems is anticipated.**

5. A registered Professional Engineer (P.E.) shall certify that all new or replacement sanitary sewer treatment systems, including individual sewage disposal systems, are designed to prevent inundation or infiltration of floodwater into such system and to prevent discharges from such systems into the floodwaters of an intermediate regional flood (100-year flood).

**N/A – No new or replacement of sanitary sewer treatment systems or individual sewage disposal systems is anticipated.**

6. No encroachments, including fill, new construction, substantial improvements, and other development shall be permitted unless certification by a registered Professional Engineer (P.E.) or Architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of an intermediate regional flood (100-year flood).

**All earthwork related to the construction of the Great Western H-Y Well Pad was performed above floodwater elevations. Therefore, it is not anticipated that the existing well pad and proposed infrastructure to be located on the well pad will result in any increase in flood levels during the 100-year flood.**

7. If the proposed use or structure is to be located in the FW (Floodway) District, a registered Professional Engineer (P.E.) shall certify that the proposed use or structure, when built, will be agricultural in use per Weld County Code 29-1-20, will not limit or restrict the flow capacity of the floodway, and will not cause any rise in the BFE per Weld County Code 23-2-480(I).

**All earthwork related to the construction of the Great Western H-Y Well Pad was performed above floodwater elevations. Therefore, it is not anticipated that the existing well pad and proposed infrastructure to be located on the well pad will limit or restrict the flow capacity of the floodway or cause any rise in the BFE per Weld County Code 23-2-480(I).**

8. If fill material is to be used in the FP-1 (100-year Floodplain) or FP-2 (500-year Floodplain) Districts, a registered Professional Engineer (P.E.) shall certify that the fill material is designed to withstand the erosional forces associated with an intermediate regional flood (100-year flood).

**Since all earthwork related to the construction of the Great Western H-Y Well Pad was performed above floodwater elevations, no increase in flow velocities were noted. Therefore, it is anticipated that the existing fill material will withstand the erosional forces associated with an Intermediate Regional Flood.**

# APPENDIX A

# APPENDIX B

# SURFACE USE AGREEMENT

This Surface Use Agreement ("Agreement") is made effective this 11<sup>th</sup> day of November, 2011, by and between Phillip G. Yastrow and Randall L. Hocking, whose address is P.O. Box 332, Windsor, Colorado 80550, hereinafter jointly and severally referred to sometimes herein as "Owner"; and Great Western Oil and Gas Company, LLC, a Colorado Limited Liability Company, with offices at 1700 Broadway, Suite 650, Denver, Colorado 80290, hereinafter sometimes referred to as "Operator"; each of the foregoing sometimes referred to individually as a "Party," or collectively as the "Parties."

For and in consideration of the covenants and agreements contained herein, and for other good and valuable considerations, the receipt and sufficiency of which are hereby acknowledged by the Owner, the Parties agree as follows:

## 1. OWNERSHIP.

Owner is the surface owner of certain lands, such lands and improvements thereon hereinafter sometimes referred to as the "Lands", located in Weld County, Colorado more specifically described as follows:

TOWNSHIP 6 NORTH, RANGE 67 WEST, 6<sup>TH</sup> P.M.  
Parts of Sections 20 and 29

Operator, or its affiliates, represent that it owns valid working interest in leases covering all or portions of the Lands or Lands pooled or included in the spacing unit therewith (each a "Lease" collectively, the "Leases"), or may have responsibilities under a joint operating agreement with respect to the land. Operator desires to drill wells on the lands and the parties intend to set forth their agreement regarding such.

## 2. OPERATOR'S OIL AND GAS OPERATIONS ON THE LANDS.

Operator intends to drill or cause to be drilled oil and/or gas wells on the Lands, as depicted approximately on Exhibit "A" attached hereto ("Wells"). In order for Operator to drill, construct, complete, produce, maintain, and operate the Wells and all facilities associated therewith, including, but not limited to, access roads ("Access Roads"), pipelines, flow lines, separators, tank batteries, electric lines and any other facilities, or property necessary for Operator to conduct operations on the Wells (each a "Facility," collectively, the "Facilities"), it is necessary that Operator enter and utilize a portion of the surface of the Lands.

The Parties enter into this Agreement to evidence their entire agreement regarding the payment of surface damages, entry, surface use, and any other matters relating to Operator's use of the Lands.

### 3. LOCATION.

(a) The approximate location of the wells, the access roads to the well sites and certain other facilities shall be constructed on the Lands as agreed to by the parties generally shown on Exhibit A being an area not more than two acres. Exhibit A is attached and incorporated herein by this reference. Any material changes to the location of the well sites, access roads and facilities may be made by operator with the consent of owner.

Operator agrees hereby releases all remaining surface not included in the wellsite area depicted on Exhibit A.

(b) Prior to drilling any wells or installation of any facilities, Operator shall lower the elevation of the Well Site location set forth in Exhibit A by a minimum of 5 feet.

### 4. CONDUCT OF OPERATIONS.

Operator's operations on the Lands shall be conducted pursuant to the terms of the Leases, this Agreement, the rules and regulations of the Colorado Oil & Gas Conservation Commission ("COGCC"), and applicable Colorado statutes and case law.

5. COMPENSATION . Prior to the commencement of drilling operations, operator shall pay owner the sum of One Hundred Thousand and 00/100ths (\$100,000.00) Dollars ("Amount") for the wellsite and tank battery. The fourteen wells in the wellsite are the H-Y 20-24, H-Y 29-21, H-Y 20-34, H-Y 29-31, H-Y 20-23, H-Y 20-53, H-Y 29-21-4, H-Y 29-52, H-Y 29-31-8, H-Y 29-51, H-Y 29-21-3, H-Y 29-31-2, H-Y 20-54 and H-Y 20-23-8. This amount shall be deemed full and agreed consideration for all damages caused or created by reason of the reasonable and customary ingress, egress, rights-of-way, drilling, completion, production and maintenance operations associated with the well and facilities. Such damages will include, without limitation, damages to growing crops and crop land; the removal, transportation and care of any livestock; the re-seeding, construction and use of access roads; and the preparation and use of the wellsite areas; provided that such activity is in accordance with this Agreement. Any subsequent major operations for said wells (refrac, deepening, re-drilling, etc.) except in case of emergency, shall require ten (10) days prior notice to owner.

### 6. ADDITIONAL SURFACE USE PROVISIONS, ACCESS ROADS, FENCES AND FACILITIES.

With respect to its operations on the Lands, Operator shall comply with the following provisions:

#### A. Access Roads:

(i) Access Roads shall not exceed 20 feet in width.

(ii) Operator will maintain all Access Roads in good repair and condition.

B. Surface Restoration:

Upon drilling or completion of the wells set forth in Paragraph 5 above, Operator shall restore and level the surface of the Lands affected by such operations as near as possible to the contours which existed prior to such operations within three months weather permitting. If Operator ceases to drill said wells for a period of more than 6 months, then Operator shall restore and level the surface of the Lands affected by such operations as near as possible to the contours which existed prior to such operations within three months weather permitting. Upon permanent cessation of Operator's operations on the Lands, all areas thereof occupied or utilized by Operator shall be restored by Operator to their original contour as nearly as is practicable within 6 months of cessation weather permitting.

C. Other:

(i) Operator will install culverts on the Lands that may be necessary to maintain present drainage and irrigation otherwise affected by its operations on the Lands.

(ii) If by reason of the activities of the Operator, including, but not limited to, drilling, completing, equipping, and operating of the Wells, there is damage to personal property of the Owner, including, but not limited to, irrigation wells, fences, culverts, bridges, pipelines, ditches, or irrigation systems, for which Owner has not been previously compensated pursuant to Paragraph 5 or outside the area depicted on Exhibit A, and upon Owner's notification to Operator, Operator shall repair or replace such items after consultation with and to the reasonable satisfaction of the Owner, which repair or replacement shall be accomplished by Operator within twenty-one (21) days after final consultation with Owner.

(iii) Operator agrees that all trash, refuse pipe, equipment, liquids, chemicals, or other materials brought on the Lands that are not necessary for continued operations of the Wells shall be removed and disposed away from the Lands by Operator no later than 30 days after the completion of the Wells. No such items shall be burned or buried on the Lands by Operator.

(iv) Operator shall keep the wellpad free and clear of noxious weeds and trash during operations.

(v) Operator shall remove all guy line anchors for drilling and completion rigs promptly after Operator's rig use is completed.

(vi) Operator agrees to fence off the perimeter of the well sites with temporary fencing if requested by Owner. Operator will install cattle guards where necessary and shall be responsible for restoring Owner's existing fence to its original condition at any point of access.

(vii) **Existing Improvements, Cultivated Land, Water Pipelines.** No existing fences or other improvements shall be cut or damaged by operator without the consent of Owner.

(viii) **Non-Disturbance.** Operator and its employees and authorized agents shall not disturb, use or travel on any of the land of Owner not subject to this Agreement without Owner's consent.

(ix) **Environmental Indemnification and Liability.** Operator hereby agrees to indemnify the Owner, its successors and assigns, from any and all environmental situations that occur directly from the oil and gas operations on said Lands within this agreement. Further, Operator shall defend, indemnify and hold harmless Owner, its successors and assigns, from Environmental Claims relating to the Operator's oil and gas operations and activities under the Lands or that arise out of its operations or activities on the lands

"Environmental Claims" shall mean all Claims asserted by governmental bodies or other third parties for pollution or environmental damage of any kind, arising from operations on the Lands and all cleanup and remediation costs, fines and penalties associated therewith, including but not limited to any Claims arising from Environmental Laws or relating to asbestos or to naturally occurring radioactive material.

"Environmental Law" shall mean any laws, regulations, rules, ordinances, or order of any governmental authority(ies), which relate to or otherwise impose liability, obligations, or standards with respect to pollution or the protection of the environment, including but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. § 9601 et. seq.), the Resource, Compensation and Liability Act of 1976 (42 U.S.C. §§ 6901 et. seq.), the Clean Water Act (33 U.S.C. (33 U.S.C. §§ 466 et. seq.), the Safe Drinking Water Act (14 U.S.C. §§ 1401-1450), the Hazardous Material Transportation Act (49 U.S.C. §§ 1801et. seq), the Clean Air Act, and the Toxic Substances Control Act (15 U.S.C. §§ 2601-262).

Operator retains liability for any and all environmental clean up necessitated by leakage, spill, or introduction by any means of hazardous and toxic compounds or chemicals to the soil or water as a result of its operation or negligence and will pay all costs associated with clean up.

This section shall survive any term of this agreement and Operators activities.

(x) **Weed Control.** Operator shall use its best efforts to control noxious weeds and will remove noxious weeds which are introduced or spread due to its operations on the lands.

## **7. DEFAULT AND RIGHT TO CURE.**

In the event of alleged default by Operator in the payment of any of the sums hereinabove provided to be made, in obligations to be performed, or any other terms, conditions or covenants of this Agreement, Owner shall notify Operator of such alleged

default in full and complete detail, in a writing delivered to Operator by certified mail, return receipt requested. Operator shall have thirty (30) days from its actual receipt of the written notification in which to pay, in the event of alleged non-payment, or to commence and diligently pursue a cure of any other alleged default, and upon such lapse of time, should such alleged default still remain in effect, then and only then shall Owner have the right and option to declare a default under this Agreement.

**8. WAIVER.**

Except as otherwise agreed in a subsequent writing subscribed to by both parties, no waiver by owner of any breach by the Operator of any of its obligations, agreements, or covenants hereunder shall be deemed to be a waiver of any subsequent or continuing breach of the same, nor shall any forbearance by Owner to seek a remedy for any particular alleged or actionable breach by the Operator be deemed to be a waiver by Owner of its rights or remedies with respect to any other alleged or actionable breach; however in no event shall Operator be liable for consequential damages.

**9. INDEMNITY/RELEASE.**

Operator agrees to indemnify and hold Owner harmless from any and all claims, damages and causes of action arising out of and caused by Operator's operations on the Lands or that may be asserted by any of Operator's agents, employees, subcontractors, contractors or persons entering upon the premises at the request of Operator.

**10. WAIVER OF 30-DAY NOTICE.**

Owner hereby waives the minimum 30-day written notice requirement for operations to begin and any other and/or future notice or consultation requirements of the COGCC, including without limitation the provisions and allowed waivers under COGCC Rules 305 and 306 regarding the wells listed in Paragraph 5 above.

**11. NOTICE FOR ADDITIONAL OPERATIONS.**

Operator shall comply with COGCC rules and regulations requiring that advance notice be provided to Owner for subsequent operations on the Wells, including, but not limited to, reworking operations thereto.

**12. NOTICES.**

Notice by either Party shall be timely given, orally if possible (with the exception of notices described in Paragraphs 6(C)(ii) and 7 above), with additional and immediate subsequent written confirmation sent by United States mail, postage prepaid and addressed to either Party at the address as designated below; or to such other place as either Party may from time to time designate by written notice delivered in the way described in this paragraph to the other:

Owner:

Phillip and Ellen Yastrow  
Randall L. Hocking  
P.O. Box 332  
Windsor, CO 80550  
Phone #: (970) 590-6587

Operator:

Great Western Oil and Gas Company, LLC  
ATTN: Royce Allen, Land Manager  
1700 Broadway, Suite 650  
Denver, Colorado 80290  
Facsimile: 303-776-1056  
Email: rallen@gwogco.com

13. **BINDING EFFECT.**

The covenants and conditions herein contained and all of the provisions of this Agreement shall inure to the benefit of and be binding upon the Parties hereto, and their respective heirs, representatives, successors and assigns. Owner agrees to notify any and all tenants of Lands and any other known third parties utilizing the surface of the Lands who may be affected by Operator's activities on the Lands. It shall be Owner's sole responsibility to advise such third parties of the existence of this Agreement and Operator's right to utilize the surface of the Lands pursuant to this Agreement; and payment of consideration, if any, which may be due any such third party from Owner as a result of Operator's actions on the Land under this Agreement shall be the sole obligation of Owner, and Owner shall protect, defend and indemnify Operator from any and all claims and demands from such third parties as a result of Operator's actions under this agreement.

14. **CONFIDENTIALITY.**

In addition to any other confidentiality requirements provided for herein, Owner and Operator agrees to keep the financial terms of this agreement confidential and shall not disclose such matters to any third party, unless owner is ordered to do so by specific order of the court in a legal proceeding. Notwithstanding the foregoing, owner may disclose terms to owner's legal advisors, payment terms to owner's official tax advisors and appropriate government taxing authorities, and future owner's of the surface of the Lands. While the specific terms hereof are to be held in strict confidence by Owner and Operator, Operator shall record a memorandum of this agreement including Exhibit A in Weld County, Colorado and with any other appropriate agency of government.

15. **ENTIRE AGREEMENT.**

This instrument contains the entire agreement between the Parties and all prior negotiations and representations are merged within this instrument, and the terms of such may not be modified orally or in any other manner other than by agreement in writing signed by all Parties or their respective heirs, representatives, successors or assigns.

16. **TERMINATION.**

This Agreement shall remain in effect unless and until specifically abandoned by Operator in a writing delivered to Owner, or filed by Operator in the records of Weld County, Colorado. All rights to indemnification and requirements for reclamation and provisions relating thereto shall survive termination of this Agreement.

17. **COUNTERPARTS.**

This Agreement shall be executed in duplicate originals, each party to retain one such original. This Agreement shall be binding if properly signed and fully executed and sent by facsimile transmitted to the other Parties. Without affecting the validity of the foregoing manner of execution, the Parties agree to follow-up such facsimile executions with standard paper originals signed by the parties as soon as may be practical.

18. **GOVERNING LAW AND VENUE.**

This Agreement shall be governed by, construed and enforced in accordance with the laws of the state of Colorado; and Weld County, Colorado, shall be the forum for resolution of all disputes under this Agreement.

19. **FORCE MAJEURE.** The passage of any deadline or time relevant under this instrument shall be deemed tolled, and nonperformance of any required obligation that Operator may have under this instrument shall be excused without penalty to Operator as to any time period, in which Operator is prevented or hindered from performing due to any governmental action or inaction, and any force majeure which shall include without limitation any act, circumstance, event or condition beyond the control of Operator which shall include without limitation any act, warning or threat of terrorism, war, revolution, rebellion, insurrection, riot, civil commotion, blockade, embargo, shortage of necessary expertise, and shortage or lack of transportation and delivery of necessary tools, equipment, material and supplies due to market conditions, act or restraint of government, strike, lockout, picketing, boycott, or damage by earthquake, fire, hurricane, tornado, flood, wind, storm, temperature extreme or other weather instability, disaster or condition, or by reason of any other circumstance or combination of same beyond Operator's control.

20. **ATTORNEY'S FEES AND COSTS.** In the event of any arbitration or litigation arising out of this Agreement, the arbitrator or court shall award to the prevailing party all reasonable costs and expenses, including attorneys' fees.

21. **AUTHORITY OF SIGNATORIES.**

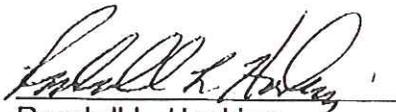
The signatories below declare, warrant and represent that they have the authority to enter into this Agreement on behalf of their respective principals, if any.

22. **BINDING EFFECT.**

This Agreement constitutes a covenant running with the Lands and shall be binding upon and inure to the benefit of, and be enforceable by, the Parties and their respective successors, affiliates, administrators, trustees, authorized representatives, executors and assigns.

DONE effective the date first written above, by the parties:

OWNER:

  
Randall L. Hocking

  
Philip G. Yastrow

OPERATOR:

Great Western Oil and Gas Company, LLC

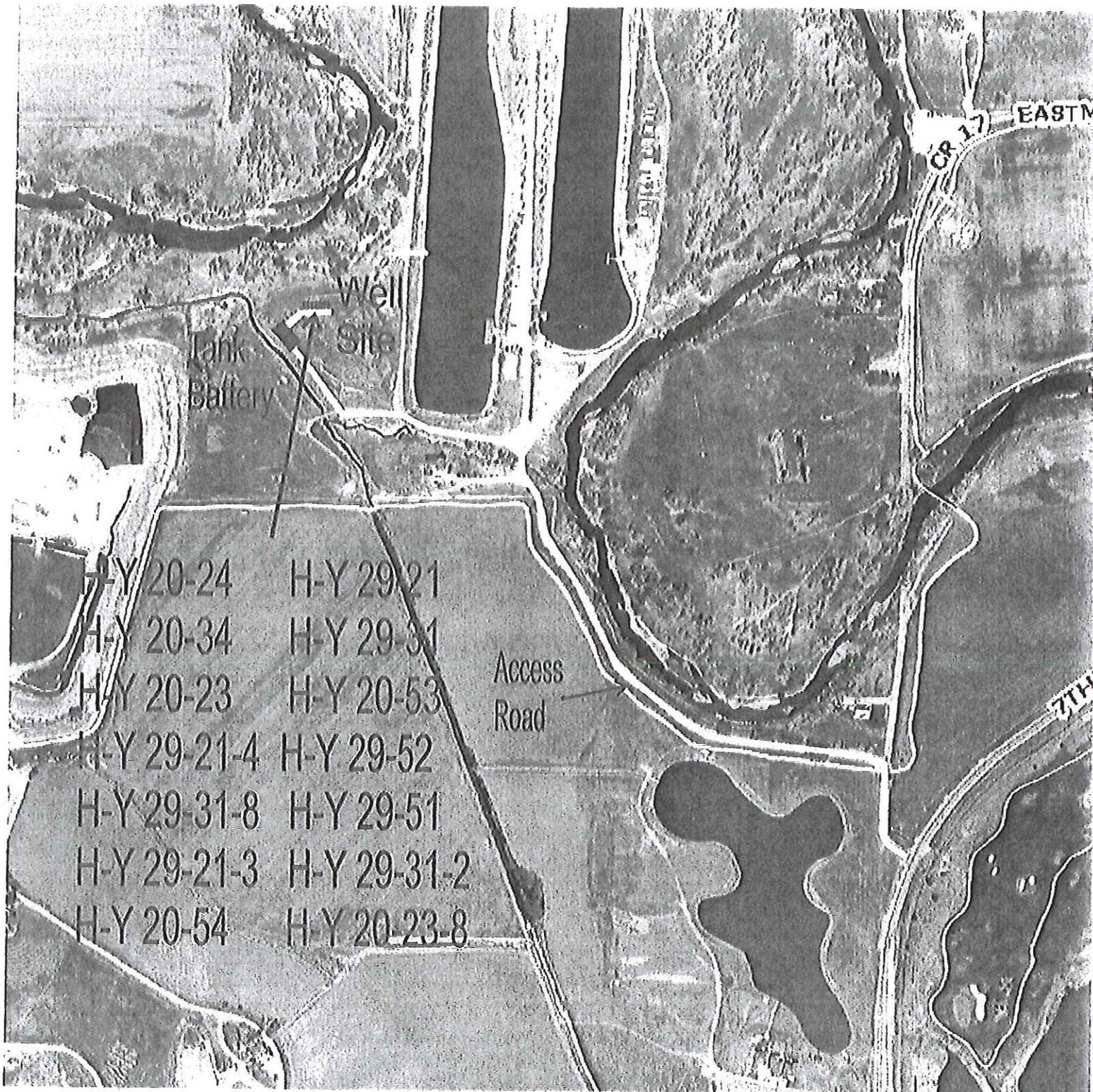
By:   
Tom Rand, Vice-President of Operations

# EXHIBIT "A"

This Exhibit "A" is attached to and made a part of that certain Surface Use Agreement between Phillip G. Yastrow and Randall L. Hocking, as "Owners" and Great Western Oil and Gas Company, LLC, as "Operator", dated November 11, 2011.

TOWNSHIP 6 NORTH, RANGE 67 WEST, 6th P.M.

Parts of Sections 20 and 29



Access Road |  Flow Line | 

# APPENDIX C