

January 28, 2008

James J. Adkins
Northwest Area Engineer
Oil and Gas Conservation Commission
53 Promontory Place
Parachute, Colorado 81635



Exploration & Production
1058 CR #215
P.O. Box 370
Parachute, CO 81635-0370
970/285-9366
970/285-9573 fax

Re: Form 15 Application – GV 88-1 Completion Fluids Facility

Dear Mr. Adkins,

Enclosed is COGCC application Form 15 with attachments for a surface water impoundment referenced as the GV 88-1 Completion Fluids Facility (CFF) owned by Williams Production RMT Co. (Williams). This facility uses cutting edge technology to continuously re-use fracturing fluids from a lined impoundment. Based on this unique process, we are uncertain as to whether Form 15 is the appropriate venue and seek your agency's guidance as to the appropriate permitting measures needed, if any. The site is located in Garfield County in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 1, T7S, R95W, 6th P.M. The enclosures include:

1. COGCC Form 15
2. Surface Impoundment Plan and Profile Details
3. Topographic Site Map
4. Remote Fracture Stimulation Configuration
5. Sensitive Area Determination

Williams continues to be a leader in finding innovative ways to reduce impacts to the environment related to the development of natural gas resources in the Piceance Basin. One of the new technologies or best practices being incorporated is Remote Fracturing through a closed-loop system, depicted on the attached drawing. The CFF is a centrally located synthetic-lined surface impoundment used to manage and store completion fluid, and the associated sand and "frac" pumps. The facility is connected to the well pad through a closed-loop piping system.

From the GV 88-1 CCF, equipment will pump hydraulic fracturing fluids to newly drilled natural gas wells. The piping system consists of high-pressure steel "frac" lines that convey the fracturing fluids to the new wellheads and returns clean flowback water to the CCF for reuse in subsequent frac jobs. The distance between the CFF and the well pad is limited to the friction pressure experienced in the high-pressure frac line. A distance of approximately 2 miles between the CFF and the well pad is the estimated maximum distance that can be currently achieved before friction pressure becomes too great.

The flowback process consists of separation equipment, located on each individual well pad, to separate gas, water, condensate and sand in the flowback fluid and to transport clean produced water back to the CFF for use in subsequent "frac" jobs. The separation process is important to avoid transporting solids or condensate from the well pad to the CFF. The clean water is then stored at the CFF in the lined surface impoundment for future use.

A lined, surface impoundment is the preferred choice for storage of produced water (completion fluid) instead of "frac" tanks as less surface space is utilized. A surface impoundment that is 300' by 110' can hold over 66,000 bbls of fluid. This same amount of fluid would require over 130 "frac" tanks. "Frac" tanks also have a greater risk of leaks because they require pipe connections and each connection is a potential leak point. "Frac" tanks also require trucking to and from the site.

This facility will circulate fluids to eleven proposed multi-well pads with a total of approximately 240 wells planned in 2008 and 2009. These well pads are delineated on the attached site map.

This 'green' approach has several advantages and benefits and will compliment current multiple well simultaneous drilling and completion operations, referred to as "SIMOPs". In addition, the total time to drill and complete wells will be significantly reduced. This approach, which significantly alters traditional well field development practices, provides numerous environmental and permit processing benefits, including the following:

- *Eliminating an estimated 60,000 water truck-trips in this area to complete all wells serviced by this facility. Eliminating truck traffic will also:*
 - *Significantly lower noise levels, fugitive dust emissions, and road wear from truck traffic.*
 - *Significantly less potential impact to ephemeral, intermittent and flowing drainages.*
 - *Less potential for transportation related accidents and incidents*
- *With centralized completion equipment, more "frac" jobs can be done in a day thus reducing the time required to complete all the wells in the area. This results in a shorter timeframe to develop an area which is desired by all parties.*
- *Allows final interim reclamation to occur in a considerable shorter timeframe.*
- *Re-established long-term wildlife habitat in a shorter timeframe.*

We appreciate your consideration in this matter. If you have any questions or need additional information, please don't hesitate to call the undersigned at (970) 285-9377.

Sincerely,



David R. Cesark
Environmental & Regulatory Affairs Lead

Enclosures

CC: Chris Canfield

GV 88-1

FORM
15
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax: (303)894-2109



FOR OGCC USE ONLY

EARTHEN PIT REPORT/PERMIT

This form is to be used for both reporting and permitting pits. Rule 903 describes when a Permit with prior approval, or a Report within 30 days, is required for pits. Submit required attachments and forms.

Complete the
Attachment Checklist

FORM SUBMITTED FOR:

☐ Pit Report ☒ Pit Permit

OGCC Operator Number: 96850
Name of Operator: Williams Production RMT Company
Address: 1058 County Road 215
City: Parachute State: CO Zip: 81635

Contact Name and Telephone:
David Cesark
No: 970/683-2281
Fax: 970/285-9573

	Oper	OGCC
Detailed Site Plan	✓	
Topo Map w/ Pit Location	✓	
Water Analysis (Form 25)	N/A	
Source Wells (Form 26)	N/A	
Pit Design/Plan & Cross Sec	✓	
Design Calculations	N/A	
Sensitive Area Determ.	✓	
Mud Program	N/A	
Form 2A	N/A	

API Number (of associated well): N/A OGCC Facility ID (of other associated facility): N/A
Pit Location (QtrQtr, Sec, Twp, Rng, Meridian): NW 1/4 SE 1/4 Sec. 1, T7S, R95W, 6th PM
Latitude: 39.463720 deg. North Longitude: 107.945757 deg. West County: Garfield
Pit Use: ☐ Production ☐ Drilling (Attach mud program) ☒ Special Purpose (Describe Use): CFF (See attached description)
Pit Type: ☒ Lined ☐ Unlined Surface Discharge Permit: ☐ Yes ☒ No
Offsite disposal of pit contents: ☐ Injection ☐ Commercial Pit/Facility Name: _____ Pit/Facility No: _____
Attach Form 26 to identify Source Wells and Form 25 to provide Produced Water Analysis results.

Existing Site Conditions

Is the location in a "Sensitive Area?" ☒ Yes ☐ No Attach data used for determination.
Distance (in feet) to nearest surface water: 1850 ft. ground water: Est. 75 ft. water wells: 2100 ft.
LAND USE (or attach copy of Form 2A if previously submitted for associated well) Select one which best describes land use:
Crop Land: ☐ Irrigated ☐ Dry Land ☒ Improved Pasture ☐ Hay Meadow ☐ CRP
Non-Crop Land: ☐ Rangeland ☐ Timber ☐ Recreational ☐ Other (describe): _____
Subdivided: ☐ Industrial ☐ Commercial ☐ Residential
SOILS (or attach copy of Form 2A if previously submitted for associated well)
Soil map units from USNRCS survey: Sheet No: C 683 Soil Complex/Series No: 69
Soils Series Name: Vale Silt Loam Horizon thickness (in inches): A: 0" - 60" ; B: _____ ; C: _____
Soils Series Name: _____ Horizon thickness (in inches): A: _____ ; B: _____ ; C: _____
Attach detailed site plan and topo map with pit location.

Pit Design and Construction

Size of pit (feet): Length: 300 ft. Width: 90 ft. Depth: 18 ft.
Calculated pit volume (bbls): 66490 Daily inflow rate (bbls/day): 1800 (annualized)
Daily disposal rates (attach calculations): Evaporation: N/A bbls/day Percolation: N/A bbls/day
Type of liner material: Reinforced Polypropylene Thickness: 45 mils
Attach description of proposed design and construction (include sketches and calculations).
Method of treatment of produced water prior to discharge into pit (separator, heater treater, other): N/A
Is pit fenced? ☒ Yes ☐ No Is pit netted? ☒ Yes ☐ No

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

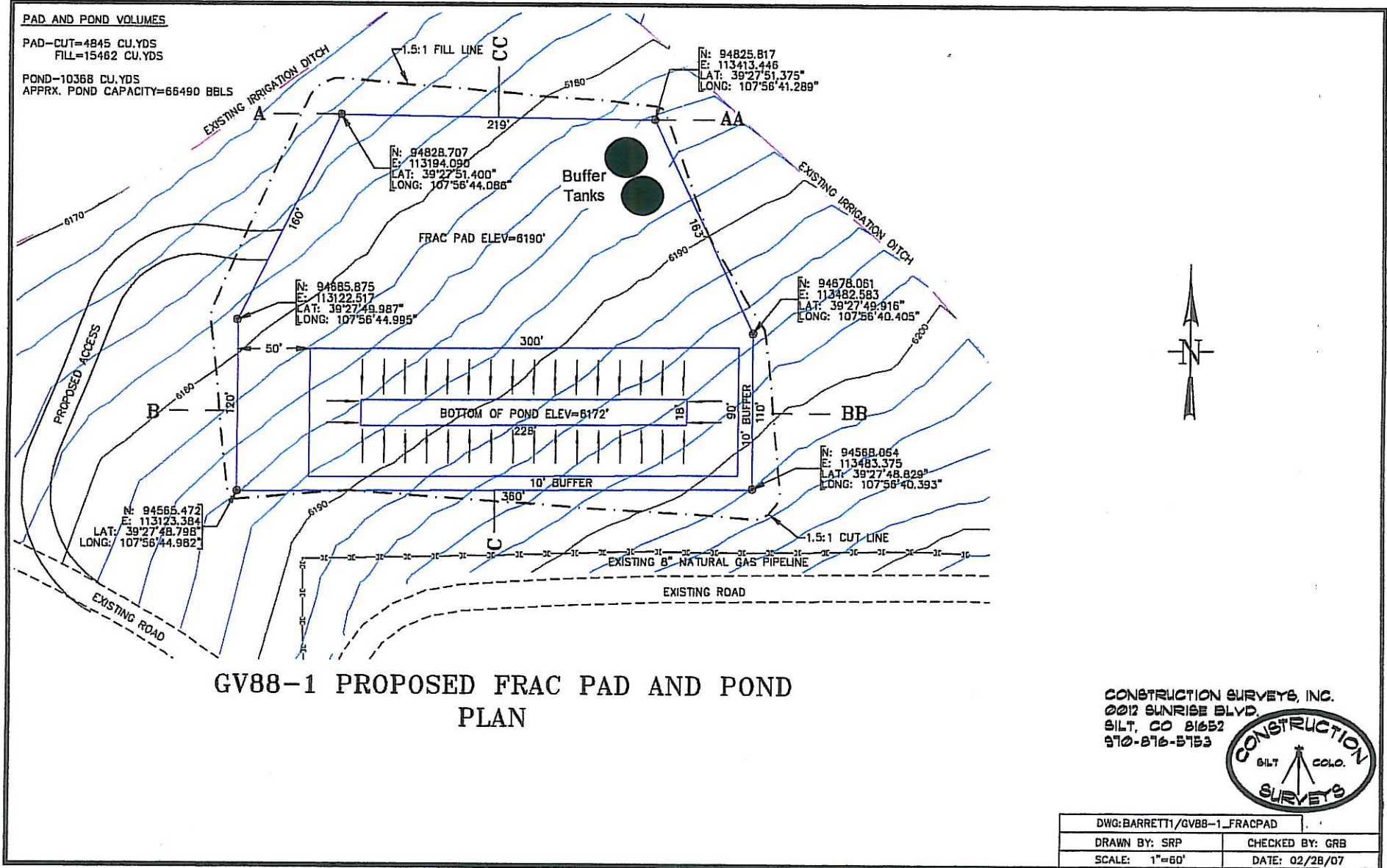
Print Name: David R. Cesark Signed: [Signature]
Title: Environmental & Regulatory Affairs Lead Date: 1/28/08

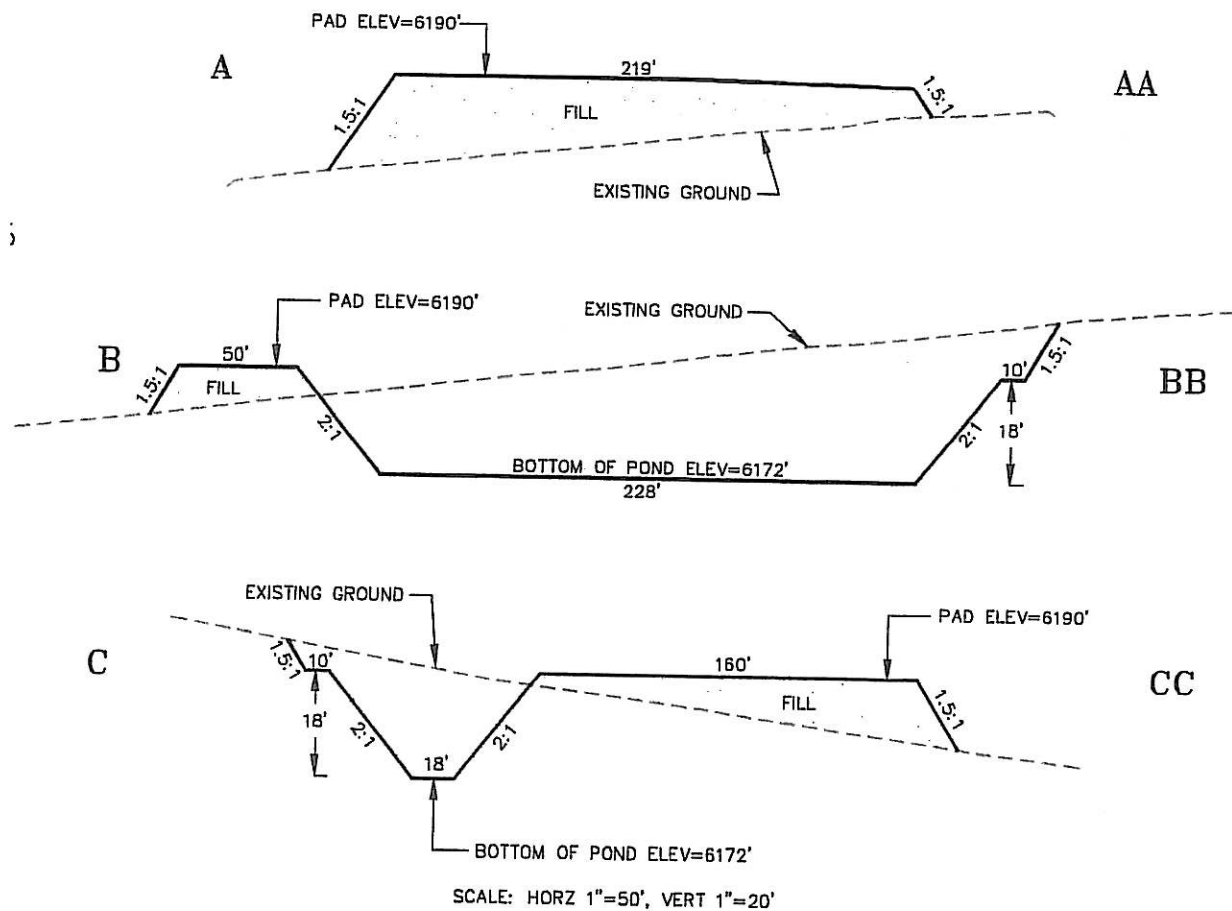
OGCC Approved: Chris Canfield Title: EPS - NW Region Date: 03-13-2008

CONDITIONS OF APPROVAL, IF ANY:

FACILITY NUMBER: **421196**

SITE PLAN





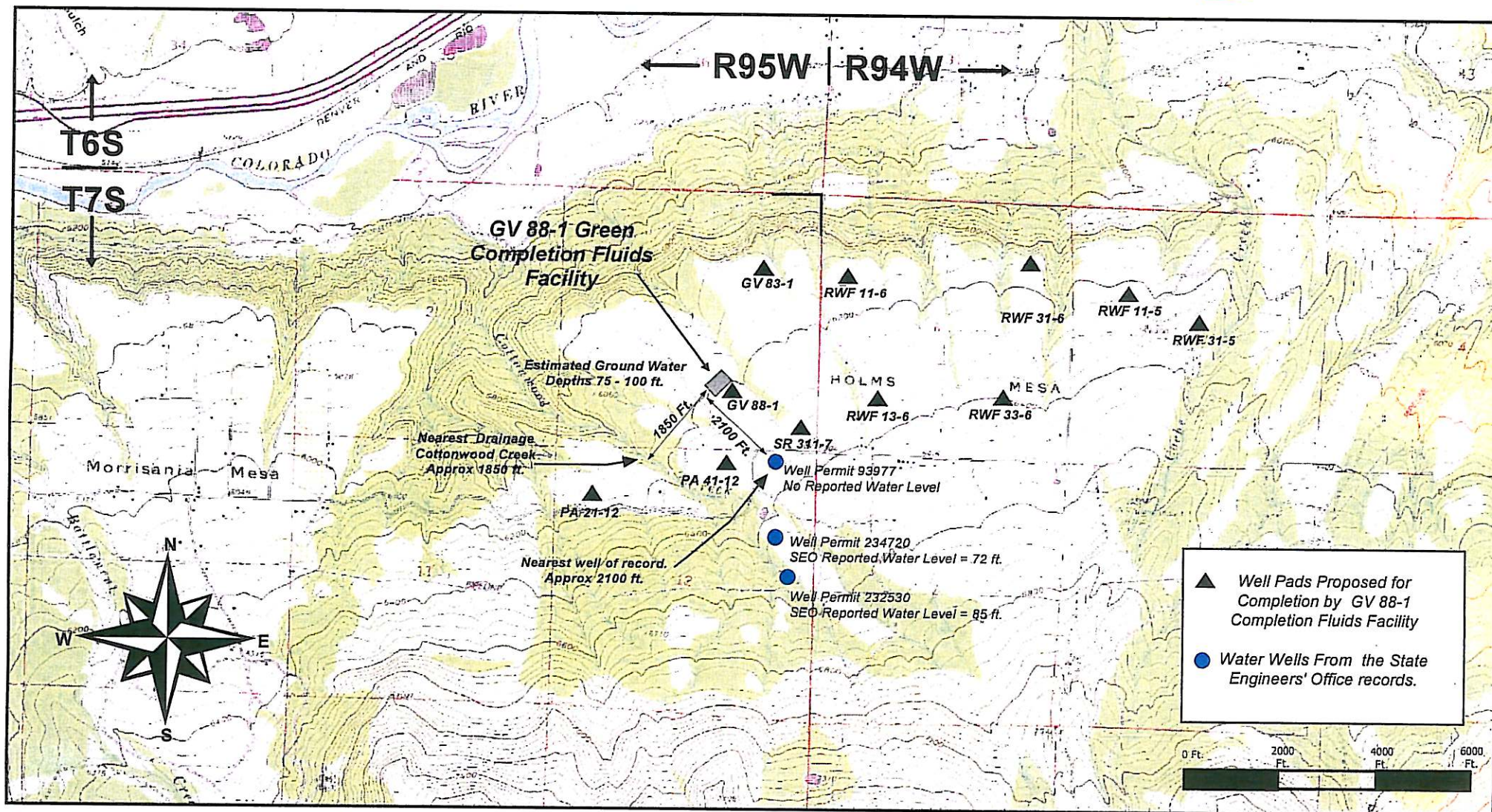
GV88-1 PROPOSED FRAC PAD AND POND X-SECTIONS

CONSTRUCTION SURVEYS, INC.
2012 SUNRISE BLVD.
SILT, CO 81652
970-876-5753



DWG: BARRETT1/GV88-1_FRACPAD	
DRAWN BY: SRP	CHECKED BY: GRB
SCALE: AS SHOWN	DATE: 02/28/07

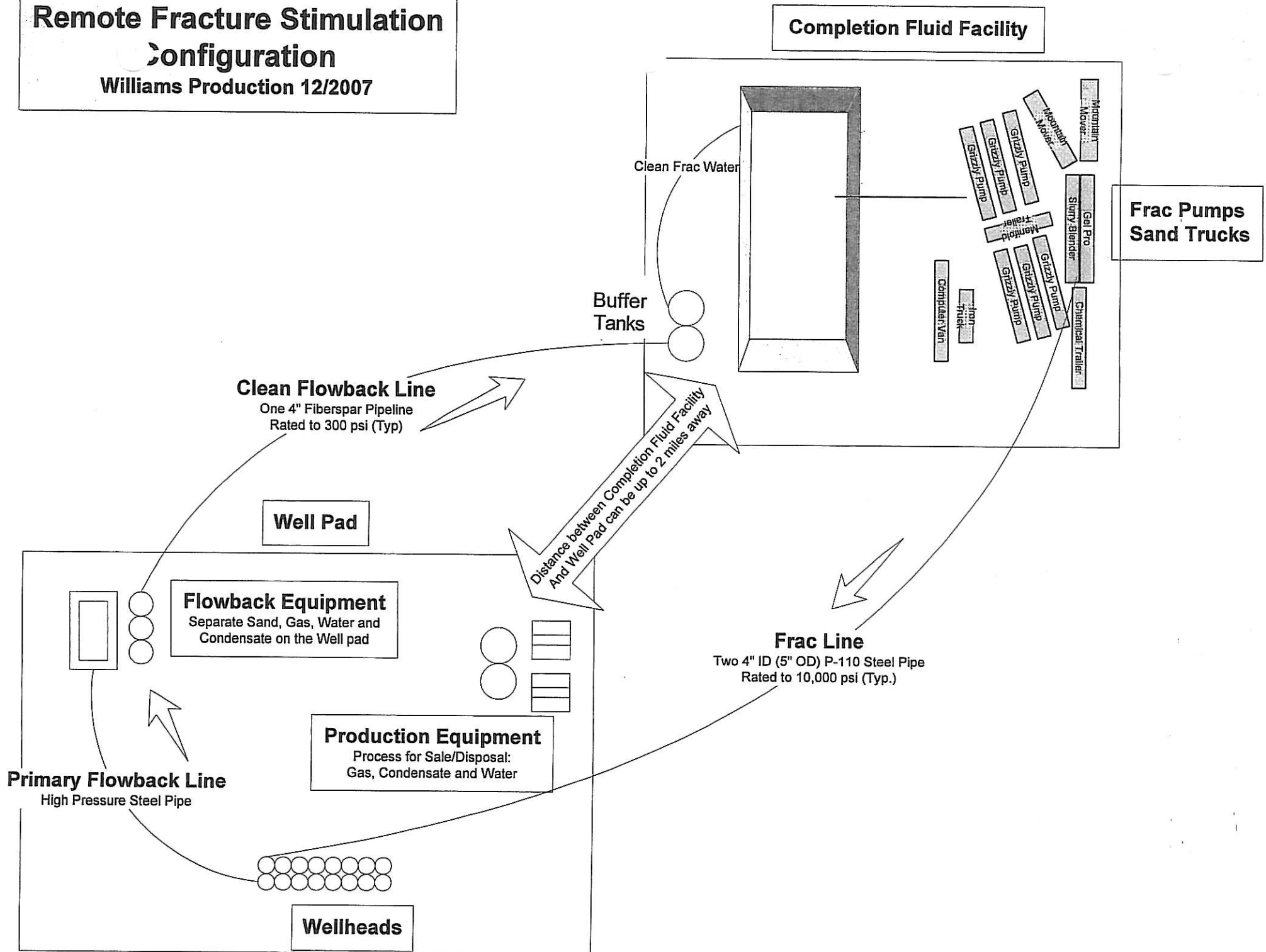
Williams Production RMT
COGCC Form 15 - Surface Water Impoundment
GV 88 - 1 Completion Fluids Facility Site Map



*USGS Quadrangle base map - Battlement Mesa, Co.

Prepared by: Fox Engineering Solutions, LLC
 January 21, 2008

Williams Production 12/2007



Williams Production RMT
 Sensitive Area Determination*
 GV 88-1 Green Completion Fluids Facility



<u>Sensitive Area Factors</u>	<u>Comments</u>	<u>Sensitive Area Determination</u>
Quality of Produced or Stored Water	Exceeds Total Dissolved Solids of 1.25 x Background	Yes
Presence of unconfined aquifers or recharge areas	Unconfined aquifer present	Yes
Hydraulic conductivity of soils or geologic material under pit	High permeability 0.20 to 0.60 in/hr (NRCS)	Yes
Presence of WQCC classified area or wellhead protection area	WQCC Regulation 37 - Lower Colorado River.	Yes
Proximity to public or domestic water supply wells	Domestic wells in vicinity	Yes
Depth and quality of ground water	Excellent water quality. Well records indicate water table 75 - 100 ft. depth.	Yes

* Per Colorado Oil and Gas Conservation Commission Rule 901.f. - Sensitive Area Operations and Figure 901-1 Sensitive Area Determination Decision Tree.

Prepared by: Fox Engineering Solutions, LLC
 December 12, 2007