

**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

261258
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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.

FORM SUBMITTED FOR:

 Pit Report Pit Permit

Complete the Attachment Checklist

OGCC Operator Number: <u>06385</u>	Contact Name and Telephone: <u>GERALD JACOB</u>	Detailed Site Plan Oper OGCC
Name of Operator: <u>EVERGREEN OPERATING CORPORATION</u>	No: <u>303-298-8100</u>	Topo Map with Pit Location <input checked="" type="checkbox"/>
Address: <u>1401 17th STREET, SUITE 1200</u>	Fax: <u>303-298-7800</u>	Water Analysis (Form 25) <input checked="" type="checkbox"/>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Source Wells (Form 26) <input checked="" type="checkbox"/>
		Pit Design Plan & Cross-Section <input checked="" type="checkbox"/>
		Design Calculations <input checked="" type="checkbox"/>
		Sensitive Area Determination <input checked="" type="checkbox"/>
		Mud Program <input checked="" type="checkbox"/>
		Form 2A <input checked="" type="checkbox"/>

API Number (of associated well): 05-071-06680 OGCC Facility ID (of other associated facility):

Pit Location (Qtr, Sec, Twp, Rng, Meridian) NW/SE, Sec 9, T34S, R66W, 6th p.m.

Latitude: N/A Longitude: N/A County: LAS ANIMAS

Pit Use: Production Drilling (Attach mud program) Special Purpose (Describe use):

Pit Type: Lined Unlined Surface Discharge Permit: Yes No

Offsite disposal of pit contents: Injection Commercial Pit/Facility Name: Lorencito 10-9 Onsite Pit/Facility No:

Form 25 to provide Produced Water Analysis results: Attached

Existing Site Conditions

Is the location in a "Sensitive Area"? Yes No Attach data used for determination.

Distance (in feet) to nearest surface water: 2200' ground water: 565' water wells: 2300

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: 16C Soil Complex/Series No: 3F Saruche Rombo C: 12
 Soil Series Name: Saruche Horizon thickness (in inches): A: 4 B: C:
 Soil Series Name: Rombo Horizon thickness (in inches): A: 4 B: 20 C: 10
Attach detailed site plan and topo map with pit location.

Pit Design and Construction

Size of pit (feet): Length: 100 Width: 40 Depth: 10

Calculated pit volume (bbls): 7124 Daily inflow rate (bbls/day): UNKNOWN

Daily disposal rates (attach calculations): Evaporation 7 bbls/day Percolation: 291 bbls/day

Type of liner material: NONE Thickness: N/A

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): SEPARATOR

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: GERALD JACOB

Signed: Gerald Jacob

Title: ENVIRONMENTAL SUPERVISOR

Date: 8-28-01

OGCC Approved: [Signature]

Title: ECS

Date: 9-20-01

CONDITIONS OF APPROVAL, IF ANY:

Facility Number: 261258



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COGCC Form 15
Application for Permit to Use Unlined Earthen Pit

Additional Information
Evergreen Operating Corporation

Well Name: Lorencito 10-9-34-66
API No.: 05-071-06680
Location: NWSE, Sec. 9, T34S, R66W, 6TH P.M.

1. Contacts

Primary Contact Person:

Gerald Jacob
Evergreen Resources, Inc.
1401 17th Street, Suite 1200
Denver, Colorado 80202
303-298-8100
303-298-7800 (FAX)

Local Contact Person:

Stephanie Basey
Evergreen Operation Corporation
11318 County Road 53.5
Trinidad, Colorado 81082
719-846-7898
719-846-1657 (FAX)

This pit permit application is being prepared as part of the Evergreen Operating Corporation (Evergreen) acquisition of the Lorencito CBM field and is intended to address a possible inadequacy in the permitting of produced water production pits associated with this CBM well that existed at the time of the Evergreen acquisition. This application is part of Evergreen's program to update the permits for the field and ensure that the field is in full compliance with COGCC rules and regulations governing produced water disposal. If this application duplicates one already under consideration by COGCC, Evergreen apologizes for the inconvenience and requests that COGCC notify Evergreen upon receipt of this application, so that Evergreen can update and correct the permit compliance files associated with the Lorencito field. Please note that the usual practice is for Evergreen to file separate permit applications for on-site and off-site production pits.

2. Purpose of this application. Evergreen has submitted this application to convert the existing drilling reserve pit on the wellsite to an unlined earthen pit for the storage, evaporation and disposal of produced groundwater. This unlined earthen pit could be used for beneficial use

(e.g. stockwatering) by the landowner. Produced water will be piped directly from the wellhead to the pit via a surface line. This unlined earthen pit is located within the confines of the existing wellsite. There are no arroyos or surface water in the near vicinity of the proposed pit. Permitted water wells, for which locations are known, are shown on the attached map. Any excess water production could be hauled via truck to the nearest approved multi-well unlined earthen pit or disposed of in an existing Class II injection well. In the future, Evergreen could discharge from this unlined earthen pit under its NPDES permit.

3. *Sensitive area determination.* This area has been determined to be located in a non-sensitive area because the proposed unlined earthen pit is located in an upland area outside of any stream channels. The nearest surface water - an intermittent arroyo indicated on the USGS topographic map - is approximately 2200 feet from the proposed pit. The closest known, permitted water well is approximately 2300 feet away based on locational data provided by the State of Colorado. Based on drilling report from 12-9-34-66 well, ground water was encountered in the drilling of the well at a depth of 565 feet. No drilling report was available to Evergreen for this well.

4. *Well site survey and color map.* Both are attached to the application and were previously submitted on pit permit application from Shenandoah Energy.

5. *Water quality testing.* Evergreen has a policy of testing the produced water from its wells on a regular basis. Water testing for this well has been previously submitted by Shenandoah Energy and is attached.

6. *Calculations:*

Surface area = length x width = 100 feet x 40 feet = 4,000 feet

Storage capacity = length x width x depth = 100 feet x 40 feet x 10 feet = 40,000 cubic feet
40,000 cubic feet x 1 barrel/5.615 cubic feet = 7,124 barrels

Daily evaporative loss. Based on climatic data and a conversion table provided by COGCC, evaporation loss for this area averages 45 pan inches/year = 7 barrels/day for 4,000 square feet of pit surface.

Percolation rate. Based on soil survey data and maps, the soil type/series (C3F) found at this location has an unknown permeability at the depth of the pit bottom. Rates from shallower soils range from 0.0 to 2.0 inches per hour. This calculation assumes a lower range permeability of 0.2 inch/hour. Given this already low rate and the presence of clays in this soil at depths below 16 inches, no additional reduction in permeability due to siltation of the pit bottom, clay swelling or inclusions of less permeable soils is assumed.

Soil percolation rate at pit bottom = 0.017 ft/hr

Estimated percolation rate for pit = 0.017 ft/hr (4,000 ft²) (bb/5.615 ft³) = 12.11 bbbls/hr (24hr/day) = 291 bbbls/day. Therefore the pit should be able to contain expected inflow.

7. *Water wells within 1/8 mile.* Based on the most recent data available from the Colorado Division of Water Resources, there are no known permitted water wells within a 1/8-mile radius. Known, permitted water wells (based on State records) within a one-mile radius are shown on the attached map. If the water well owners of record consent and/or request, all known water wells within a one-mile radius will be tested and analyzed on a yearly basis at Evergreen's expense. The attached map (as previously submitted by Shenandoah Energy) identifies permitted water wells for which the depth is known. Bottom hole depth of the well above sea level is shown where available.
8. *Inspection and reporting.* The unlined earthen pit will be visited at least one a day by Evergreen field personnel and all spills and/or releases will be reported in accordance with COGCC regulations.

DAILY DRILLING REPORT

Operator: Chandler & Associates, LLC
 AFE No: 0 Date: 06/18/99
 Days: 3 Formation: Vermejo Coals
 Progress: 1460' SFT: \$13.24
 Deviation: Depth Angle TVD Direction:

Well: Lozencito 12-09-34-66
 Depth: 1460
 Rot. Hrs: 7.75
 Coordinates: 1686' FSL & 1304' FWL
 NE SE 8 - 34S - 66W

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MUD PROPERTIES
 Mud Type: None
 Mud Wt: _____
 Visc: _____
 PV: _____
 YP: _____
 Gels: _____
 PH: _____
 WL: _____
 Cake: _____
 CL: _____
 Ca: _____
 Solids: _____
 Oil: _____
 LCM: _____
 Air Volume: 1800
 Air Press.: 410
 H2O/Foam: 5 B/HR

BIT RUNS
 Bit No: 2
 Serial No: Halco
 Type: Hammer
 Size: 6.5"
 Jets: 0
 WOB: 4
 RPM: 60
 Depth Out: 1460
 Depth In: 306
 Hrs: 7.75
 Cum Ft: 1154
 Cum Hrs: 0
 Grade: _____
 Cum Rotating Hrs: 7.75

COSTS

	DAILY	CUM
Daywork:		\$0
Footage:	11,540	\$14,580
Mud:		\$0
Rentals:	150	\$150
Fuel:		\$0
Superv:	500	\$1,000
Mud Log:	500	\$1,000
Geologist:	300	\$800
Trucking:		\$500
Bits:		\$0
Roads/Location:	540	\$8,840
Rat Hole/Surfaces:		\$0
Logs:		\$0
Tests/Cores:		\$0
Cement:	4,200	\$4,200
Casing Crew:		\$0
Casing:	1,600	\$1,600
Wellhead:		\$0

Total Mud Cost: \$0
 Cum Mud Cost: \$0
 Rate of Penetration: 188.4
 Lithology: Background Gas

Daily Well Cost: 18,330
 Total Well Cost: 30,470
 Connection Gas

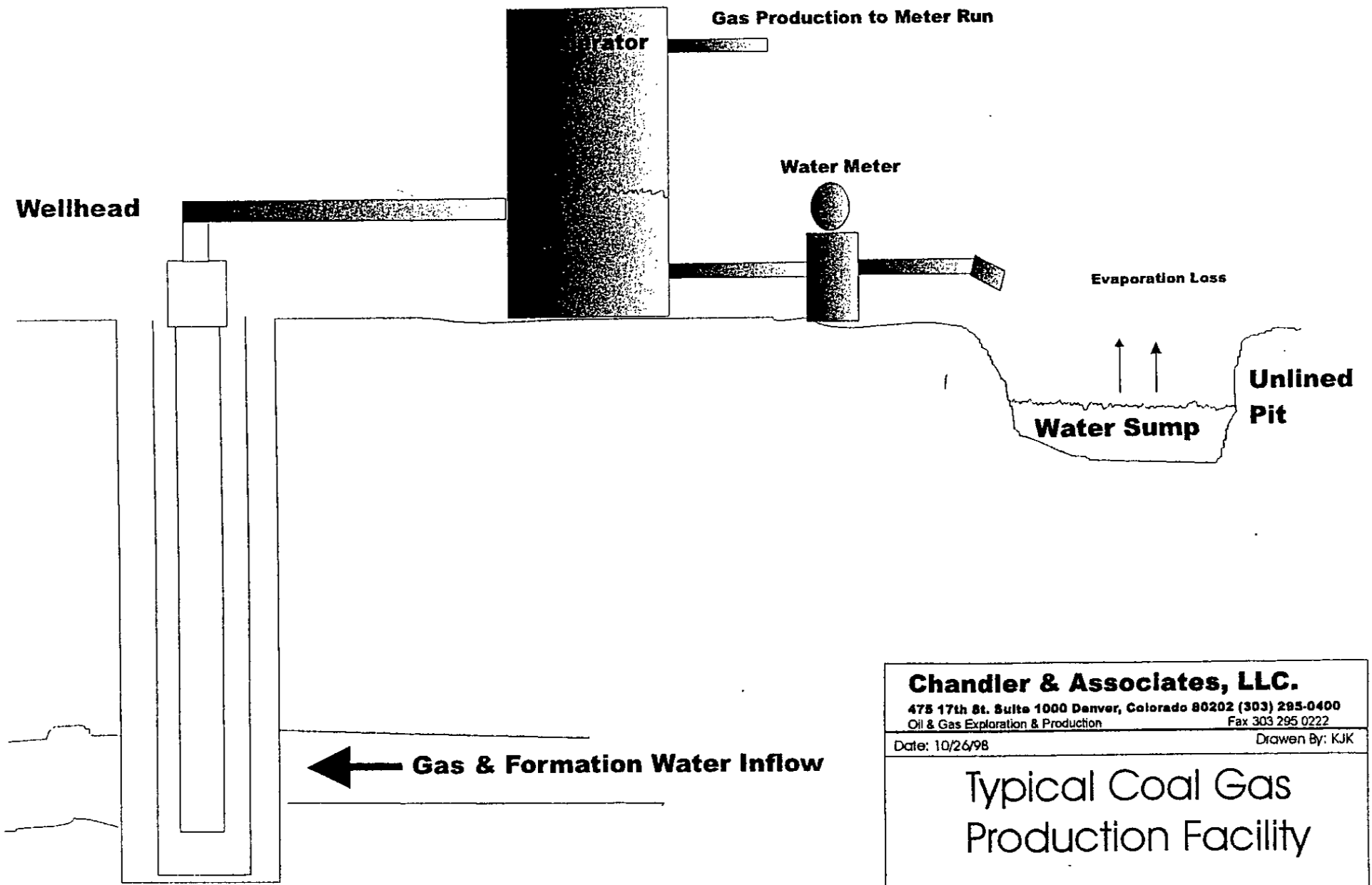
Hole Size: 6.5 Drag: _____ Torque: _____
 Circ Rate: _____ Press: _____ Ann. Vel _____
 Drilling Assemble: Bit #2, 1' 6 1/2" Hammer, 4' Hammer, 20' stabilizer, 1' float
 Hourly Breakdown: 2 1/4 hr w/o weather, blade road. 1 1/4 hr, MI Halco. 1 hr ran 14 lbs, 295.6' 7" 169, K-55 (MCF-50) ST&C, new csg, w/ centralizers 1,3 & 14. Cmt basket @ 73' KB. 1 1/4 hr Halco cmt w/ 56 sxs 14PPG Mid-Con-2. Did not circ fluid/gmt to surface. Top Out w/26 sxs 14 PPG Mid-Con-2. Cmt to surface. 8 hr VOC/drill out 20' cmt. 7 3/4 hr Drill 306' to 1460' KB. 1/4 hr circ 2 hr LDDP. 1/4 hr MI Computalog

Pump: 0 Liners: 0 SPM: 0
 Pump: 0 Liners: 0 SPM: 108

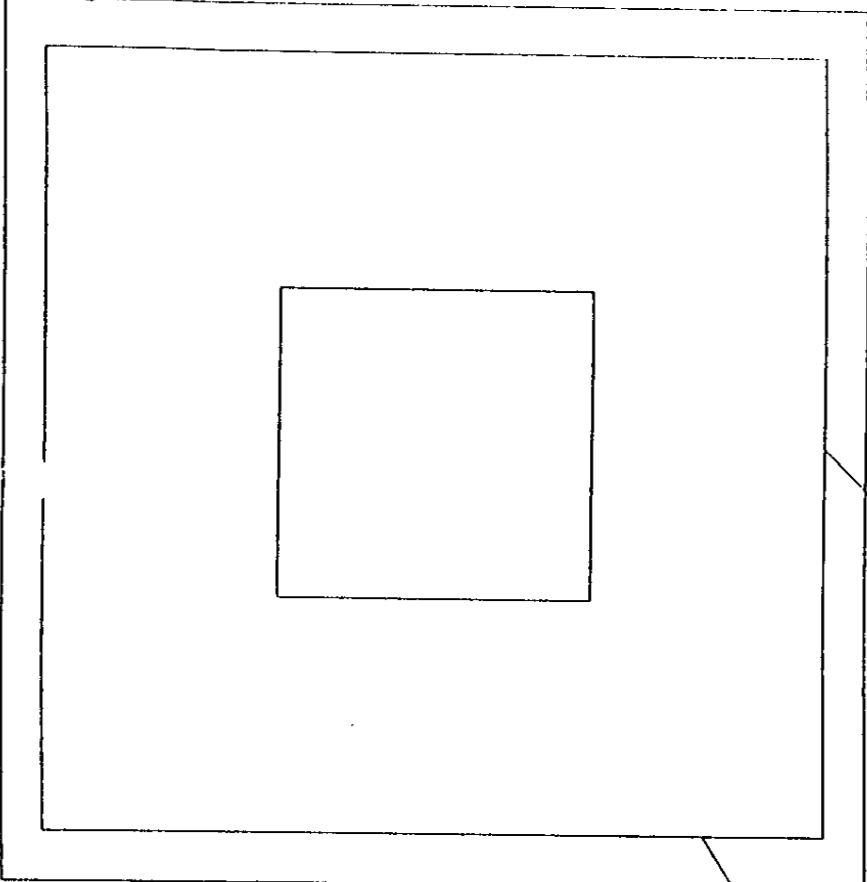
Operations @ rpt time: rigging up loggers to log

Damp @ 535'
 Gas shows
 Formation Tops:

Shows: Interval	ROP		Gas		Lithology		Flour	Cut	Comments
	Before	During	After	During	Before	During			
NO SHOWS									

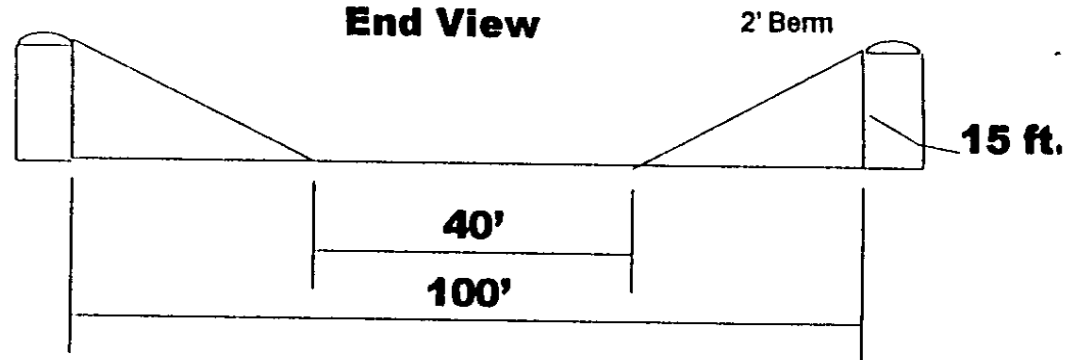


Chandler & Associates, LLC.	
475 17th St. Suite 1000 Denver, Colorado 80202 (303) 295-0400	
Oil & Gas Exploration & Production	Fax 303 295 0222
Date: 10/26/98	Drawn By: KJK
<h1>Typical Coal Gas Production Facility</h1>	



1:2 slope on banks.

100 ft.



End View

2' Berm

15 ft.

40'

100'

100 ft.

Pit Volume

COGCC

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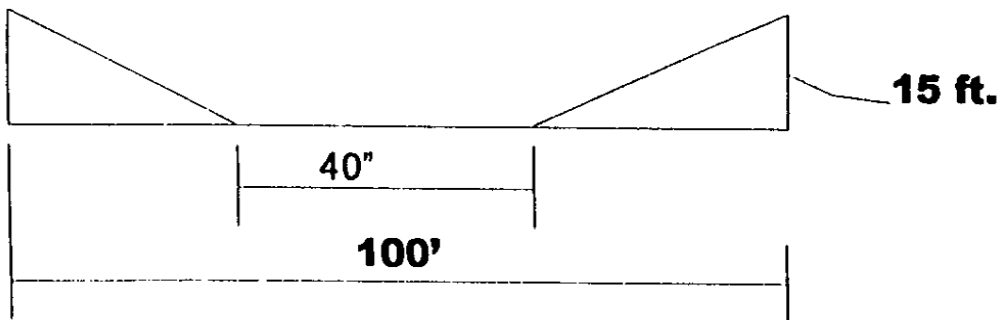
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$$45 * 45 * 15 + 30 * 15 * 100 + 30 * 40 * 15 = 87,000 \text{ cft.}$$

$$= 15,495 \text{ bbls.}$$

Side View

1:2 slope on banks.



15 ft.

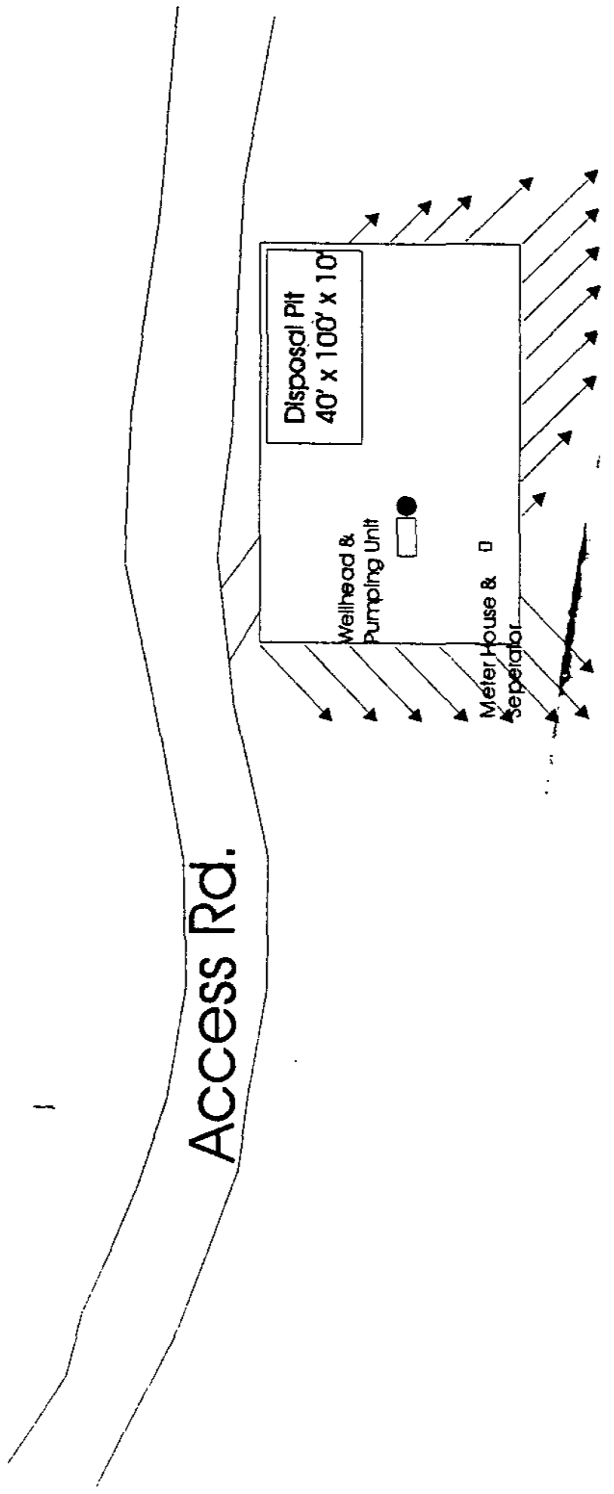
40'

100'

Shenandoah Energy Inc.		
475 17th St. Suite 1000 Denver, Colorado 80202 (303) 295-0400 Oil & Gas Exploration & Production Fax 303 295 0222		
Date: 5/10/00	Scale: 1"=50'	Drawn By: KJK
<u>Disposal Pit</u> <u>Lorencito Project</u>		

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Hill Side



Valley

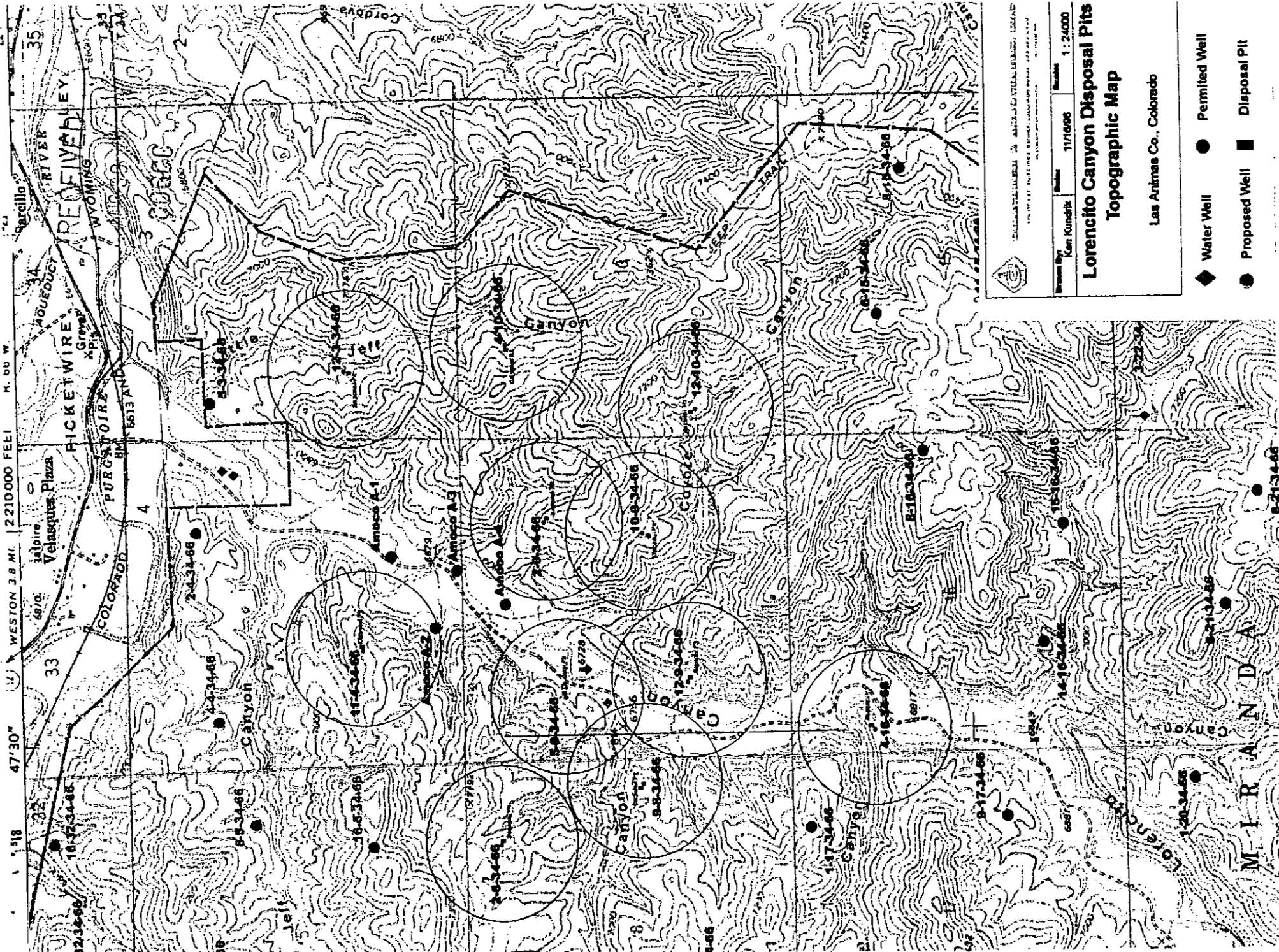


CHANDLER & ASSOCIATES, INC.
 478 1774 ST. SUITE 1000 DENVER, COLORADO 80202-303 295 0400
 OR, U.S. PATENT AND PRODUCTION 714 303 4947

Drawn By: Ken Kundrik **Date:** 12/28/99 **Scale:** 1" = 100'

Lorencito CBM Project
 Lorencito #10-9-34-66
 NW SE sec. 9 T34S Rge 66W

Water Disposal Pit Schematic



STATE OF COLORADO
 DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF WATER RESOURCES
 1171686

Drawn By: Ken Kundlich
 Date: 11/16/86
 Scale: 1:24000

Lorencito Canyon Disposal Pits Topographic Map

Las Animas Co., Colorado

- ◆ Water Well
- Permitted Well
- Proposed Well
- Disposal Pit

M-I-R-A-N-D-A