District I
1625 N French Dr , Hobbs, NM 88240
Phone (575) 393-6161 Fax (575) 393-0720
District II
811 S First St , Artesia, NM 88210
Phone (575) 748-1283 Fax (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170
District IV
1220 S St Francis Dr , Santa Fe, NM 87505
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised December 16, 2011
Permit

RECEIVED
AUG 14 2012
NMOCD ARTESIA

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
EnerVest Operating, LLC 1001 Fannin Street, Suite 800 Houston, TX 77002	143199
	[3] API Number 30-015- 40593

[4] Property Code	[5] Property Name	[6] Well No
305988	WLH G4S UNIT	56

[7] Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
L	1	18-S	29-E		1922'	South	490'	West	EDDY

[8] Pool Information

LOCO HILLS QUEEN-GRAYBURG-SAN ANDRES	39520

Additional Well Information

[9] Work Type	[10] Well Type	[11] Cable/Rotary	[12] Lease Type	[13] Ground Level Elevation
N	O	R	S	3,525'
[14] Multiple	**[15] Proposed Depth**	**[16] Formation**	**[17] Contractor**	**[18] Spud Date**
No	2,725	G4 Sand	TBD	8/21/2012

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
150'	11,318' SW	7,190' (Bear Grass Draw)

[19] Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	12-1/4"	8-5/8"	24#	0-300'	225	0
Production	7-7/8"	5-1/2"	15.5#	0-2,800'	410	0

Casing/Cement Program: Additional Comments

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular Preventer	3000psi	2000psi	TBD

I hereby certify that the information given above is true and complete to the best of my knowledge and belief
I further certify that the drilling pit will be constructed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Signature

Printed name BART TREVIÑO

Title ASSOCIATE REGULATORY ANALYST

E-mail Address BTREVINO@ENERVEST.NET

Date 8/13/12 Phone

OIL CONSERVATION DIVISION

Approved By: T. C. Shaffard

Title Geologist

Approved Date 8/15/2012 Expiration Date 8/15/2014

Conditions of Approval Attached

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-40593	39520	Loco Hills; Qu-GB-SA

Property Code	Property Name	Well Number
305988	WLH G4S UNIT	56

OGRID No.	Operator Name	Elevation
143199	ENERVEST OPERATING, LLC	3525'

Surface Location

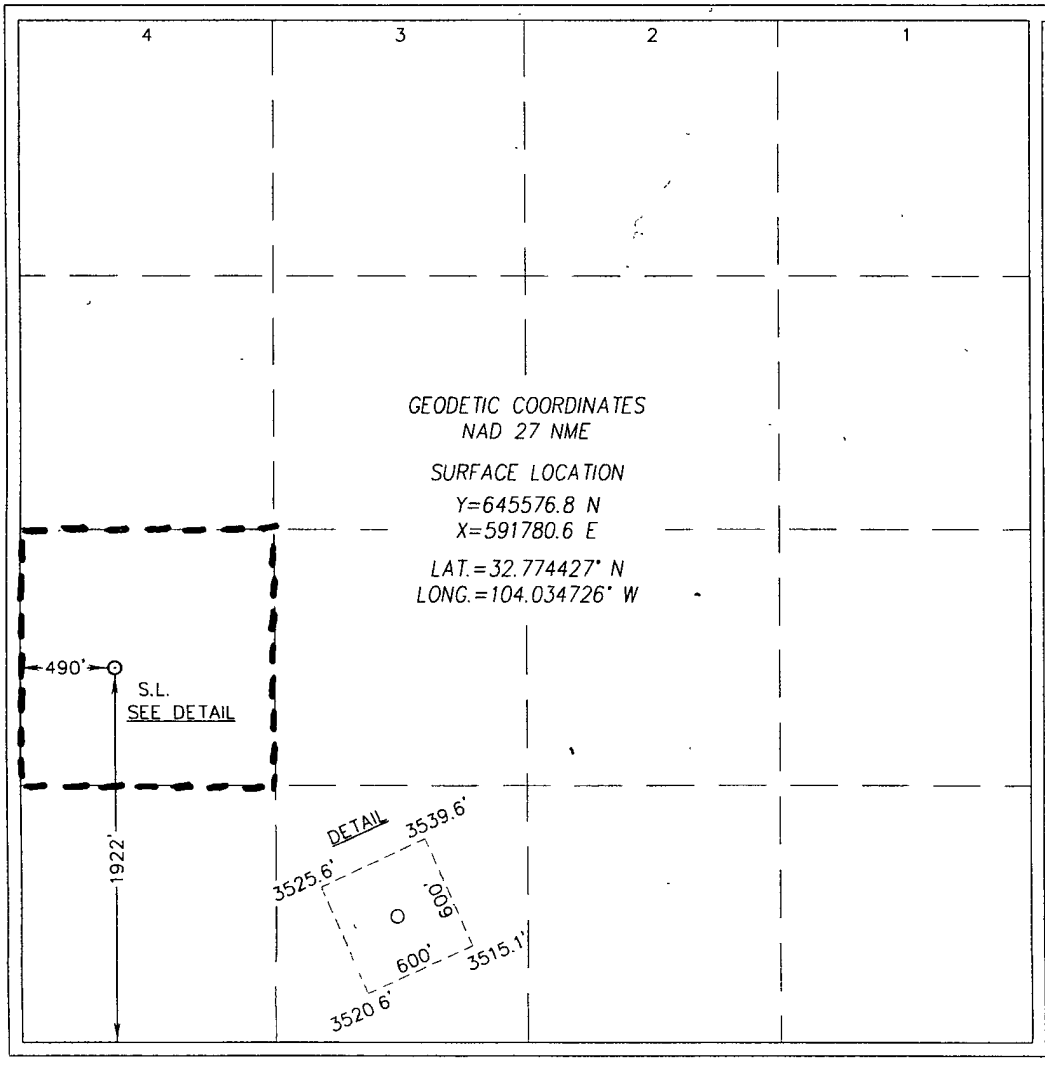
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	1	18-S	29-E		1922	SOUTH	490	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 8/13/12 Date

BART TREVIÑO
Printed Name

BTREVINO@ENERVEST.NET
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JULY 24, 2012
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

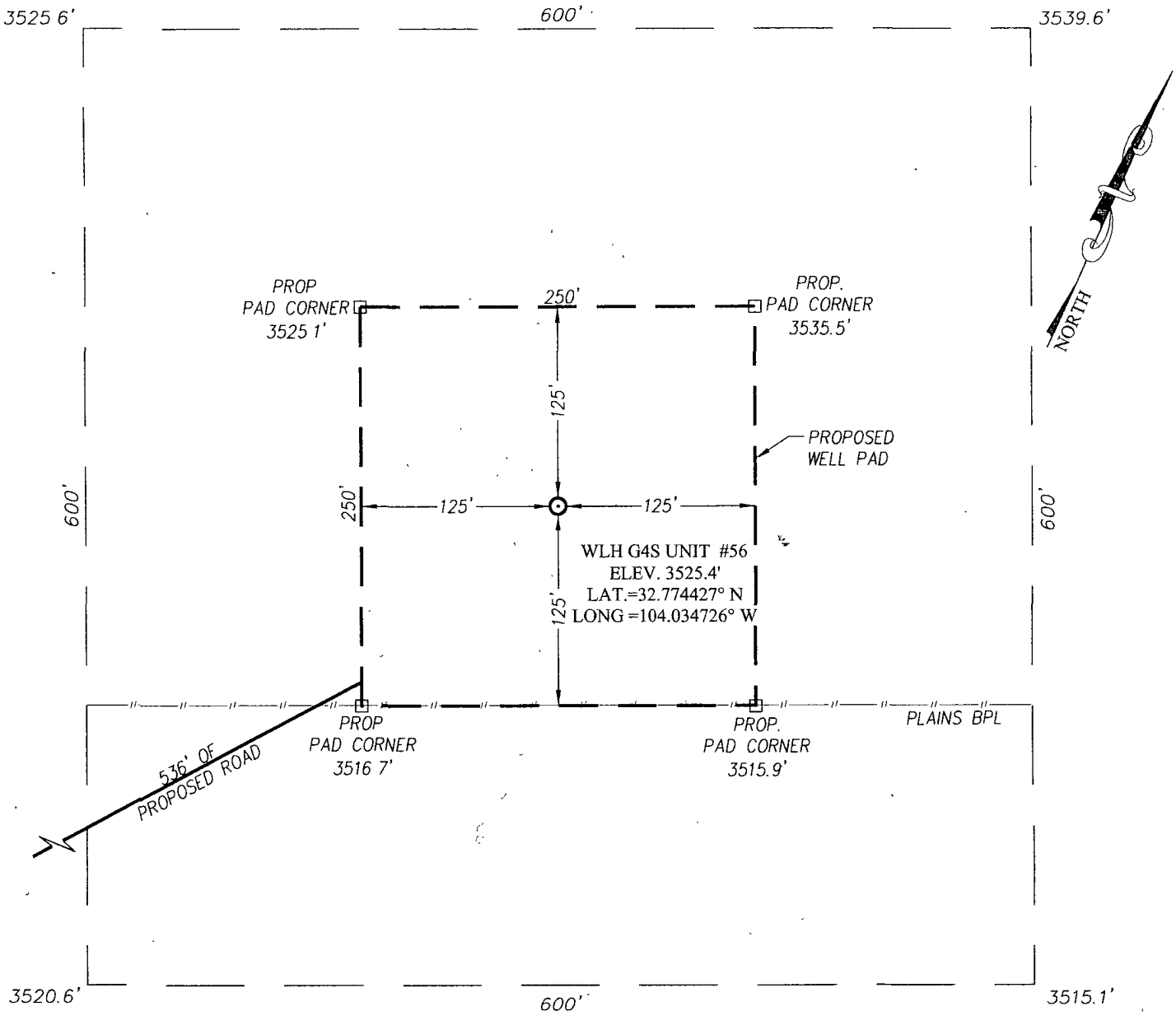
Ronald J. Eidson 08/03/2012

Certificate Number	Gary L. Eidson	12641
	Ronald J. Eidson	3239

AF JWSC W O 12.11 0856

SECTION 1, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION CO. RD #217 (HAGERMAN CUTOFF) AND CO. RD. 212 (VALLEY GAS) GO NORTHEAST ON CO RD. #217 APPROX 0.6 MILES. TURN RIGHT AND GO EAST ON TO MEWBORNE OIL PAVO "2" STATE COM #1 WELL PAD. FROM THE SOUTHEAST CORNER OF THE PAD GO EAST APPROX. 0 65 MILES TO A ROAD SURVEY. FOLLOW THE ROAD SURVEY NORTHEAST 700 FEET TO THE LOCATION.

100 0 100 200 Feet

Scale: 1"=100'

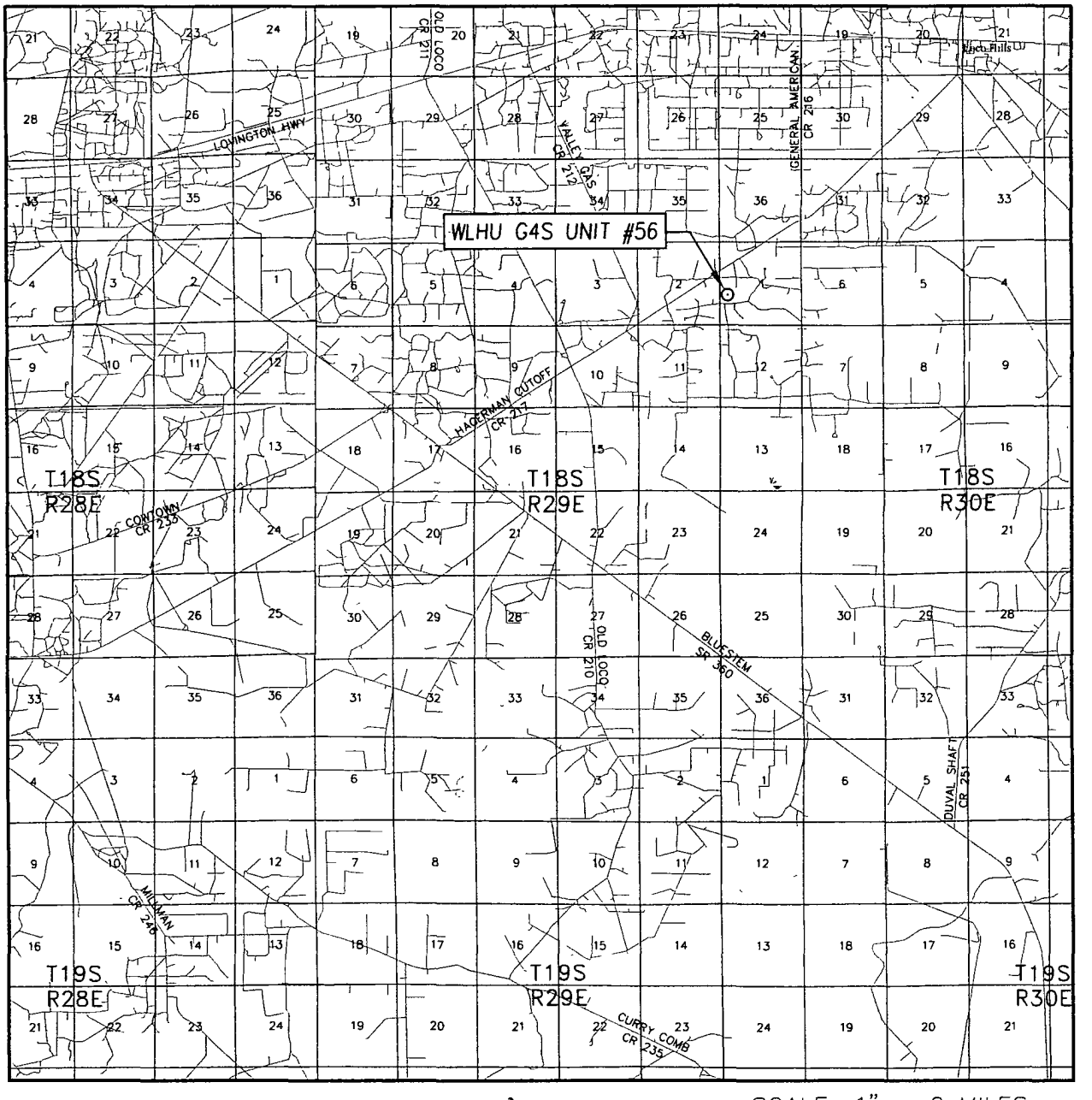
PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N DAL PASO
HOBBS, N M 88240
(575) 393-3117 www.jwsc biz

ENERVEST OPERATING, LLC

WLH G4S UNIT #56 WELL
LOCATED 1922 FEET FROM THE SOUTH LINE
AND 490 FEET FROM THE WEST LINE OF SECTION 1,
TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 7/24/12	CAD Date: 7/30/12	Drawn By: AF
W.O No : 12110856	Rev: .	Rel W.O.:	Sheet 1 of 1

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 1 TWP. 18-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1922' FSL & 490' FWL

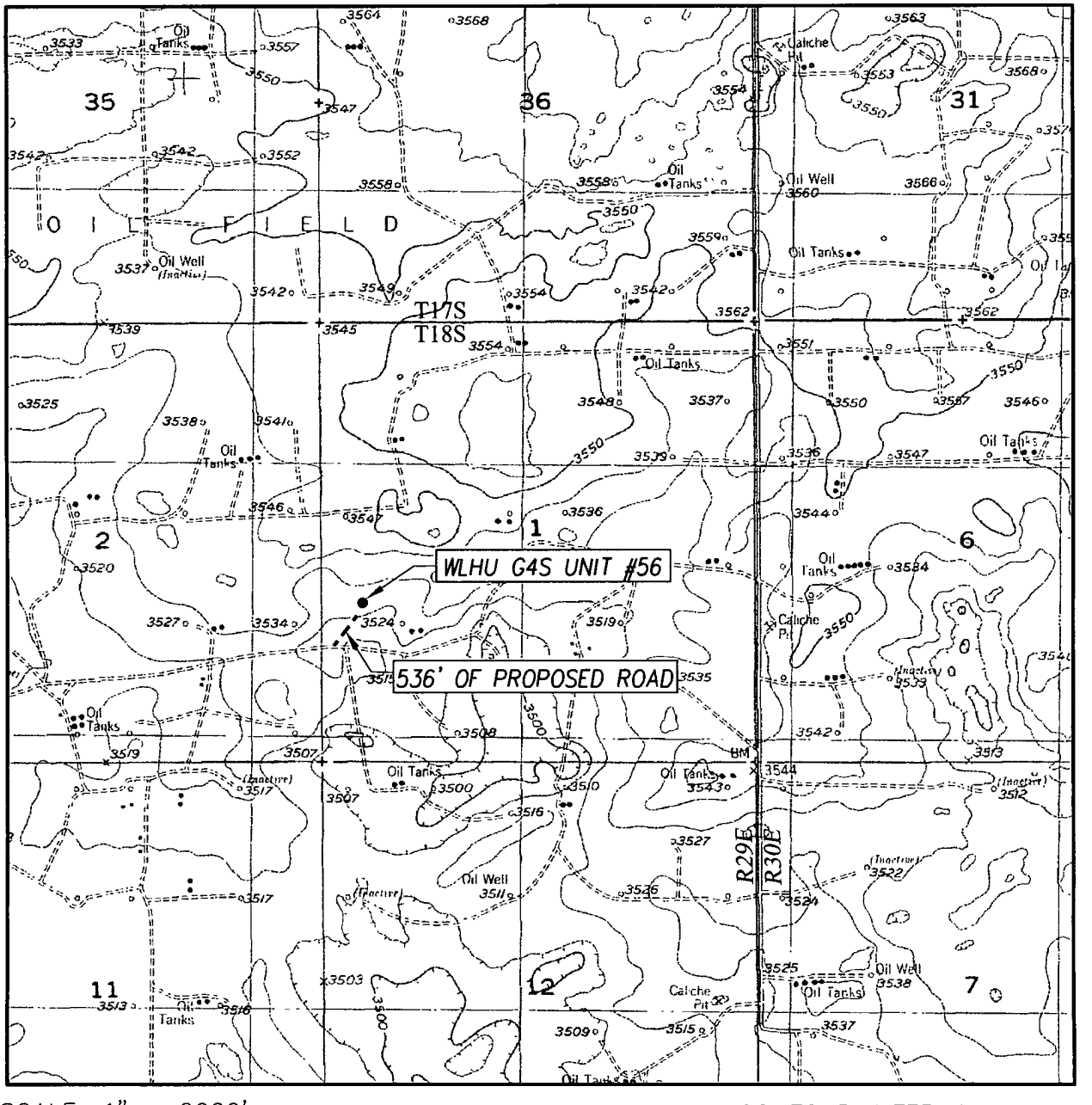
ELEVATION 3525'

OPERATOR ENERVEST OPERATING, LLC

LEASE WLH G4S UNIT

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
RED LAKE SE, N.M. – 10'

SEC. 1 TWP. 18-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1922' FSL & 490' FWL

ELEVATION 3525'

OPERATOR ENERVEST OPERATING, LLC

LEASE WLH G4S UNIT

U.S.G.S. TOPOGRAPHIC MAP
RED LAKE SE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N DAL PASO
HOBBS, N M 88240
(575) 393-3117 www.jwsc biz

EnerVest Operating, Ltd.
Master Drilling Plan
West Loco Hills Field
Location: Surf; 1980' FSL & 660' FWL; Sec 1, T18S R29E
Eddy County, NM

Rig - TBD
Rig Telephone # - TBD

Well Name	West Loco Hills # 56	Elevation & KE	3516'
Enervest No.		API No.	
Drilling Permit No		USDW depth	
Drilling Contractor	TBD	Vertical	Yes
Enervest Rep	Loren Diede	Directional	No
		Horizontal	No

West Loco Hills - MASTER DRILLING PROGRAM

1 Directions to Well

Directions to well: From Loco Hills NM, go south on CR 217 3 3/4 mi turn left, go through tank battery, travel east 1 mi. Location is +/- 100 yd north.

Prior to Spud, running and cementing all casing call NM OCD at required time to notify them of activity anticipated. DOCUMENT ON IADC REPORT AS WELL AS ENERVEST DAILY DRILLING REPORT DATE & TIME OF CALL, PERSON CALLED AND NATURE OF CONVERSATION OR MESSAGE LEFT.

2 Estimated Tops of Important Geologic Markers

MD	SS	Formation	Objective	Rock Type
419	3,097	Salado Salt		Salt
1,059	2,457	Tansill		Carbonate/Evaporite/Siltstone beds
1,211	2,305	Yates		Anhydrite & Limestone
1,571	1,945	7 Rivers		Anhydrite & Dolomite
2,206	1,310	Queen		Anhydrite & Dolomite
2,694	822	Grayburg		Limestone & Sandstone
2,725	791	G4 Sand	Primary	Sandstone

3 Estimated Depths of Anticipated Fresh Water, Oil and Gas

MD	SS	Formation	Objective	Fluid Type
150	3,366	Quaternary		(Fresh Water)
2,725	791	G4 Sand	Primary	(Oil)

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 8-5/8" casing to +/-350' and circulating cement back to the surface will protect the surface fresh water sand. Pressure test casing to 600psi and hold for 30 mins, and document on report. Production casing will be set +/-2800' and circulate cement back to surface. Cement volumes will be pumped to provide cement back to surface.

4 BHA

BHA #1	**Surface**	**Slick**
BHA #2	**Production**	**Slick**

5 Bit Program

	Size	Type	RPM	WOB	Depth Out	Total Feet
Surface	**12-1/4"**	Tri-cone	60-100	30k	+/- 350'	350
Production	**7-7/8"**	Tri-cone / PDC	60-90	30k	+/- 2800'	2450

6 Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Conn./New?	Bur/Col/Tens
12-1/4"	0-350'	8-5/8"	24#	J-55	STC/New	2950 / 1370 / 244
7-7/8"	0-2,800'	5-1/2"	15.50#	J-55	LTC/New	4810 / 4040 / 217

7 Cement Program

8-5/8" Surface Csg
100% XS **LEAD/TAIL** 225 Sks Class "C" 2% $CaCl_2$ (1.32 YLD, 14.8 PPG)

5-1/2" Production Csg
75% XS **LEAD** 210 SKS 50:50 POZ:C & 2% CaCl2 (11.8 PPG 2.56 CF/SK)
TAIL 200 SKS CLASS "C" (14.8 PPG 1 33 CF/SK)

DISPL Dsiplace cement with 2% KCL water in Production Casing

After running and cementing surface casing and casing WOC, TIH & drill out float collar plus 20' cement. Close BOP's around drill pipe and test surface casing to 600 psi for 30 minutes. Record pressure test.

This must be recorded on IADC as well as Enervest daily report form.

Size	Weight	Grade	1/3 Burst	Csg Test
8-5/8"	24#	J-55	983	600
5-1/2"	15.50#	J-55	1603	1500

Testing of Production casing will be accomplished by person completing well after Drilling rig is moved off.

8 Minimum Specifications for Pressure Control & Wellhead Equipment

The blowout preventer equipment (BOPE) shown in the BOPE Diagram will consist of an annular preventer (3000 psi WP). This unit will be hydraulically operated and will be nippled up on the 8 5/8" surface casing and tested to 2000 psi by a third party. The BOPE will be checked daily and these checks will be noted in the tour sheets. Other accessories to the BOPE will include a kelly cock and

floor safety valve, choke lines and a choke manifold and will have a 2000 psi WP rating.

A 2,000 psi WP Larkin Type Wellhead will be used.

9 Types and Characteristics of the Proposed Mud System

The surface hole will be drilled with native.
The production hole will be drilled with saturated brine water.

DEPTH	TYPE	WEIGHT	VISCOSITY	WATER LOSS
0 - 350'	Native	8.4-8.6	28-30	N.C.
350' - TD	Brine	9.8-10 1	28-30	12 cc

Sufficient mud materials will be kept at the well site to maintain mud properties and meet minimum lost circulation and weight increase requirements at all times.

10 Auxillary Well Control and Monitoring Equipment

A. Kelly cock will be kept in the drill string at all times.
B. Rotating Head to be installed before drilling Production Hole
C. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

11 Logging, Testing and Coring Program

A. The electric logging program will consist of a Spectral GR/Density Neutron/Induction logs run from TD to the surface casing shoe.
B. A GR-Neutron will be run to surface on selected wells.
C. Mud logger will be used on selected wells.
D. Sidewall cores are planned for selected intervals in this well.

12 Abnormal conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temp at TD is 95°F and the est. maximum bottom hole pressure is 1,000 psi. This well is to be drilled in a pre-existing water flood.

13 Anticipated Starting Date and Duration of Operations

Anticipated Start Date is September 1, 2012.
Once commenced, drilling operations should be finished in approximately 7 days.
An additional 30 days will be required for completion, testing and installation of permanent production facilities.

14 Safety

Conduct Tour Safety Meetings with all crews and record topics of these meetings on the IADC and morning reports. Document all personnel in attendence and topics of these Safety Meetings. Keep these documents on file in company representative's office for inspection.

15 Notes

Stamp, Code and Sign all Invoices

This well is in a potential H_2S Area A H2S contingency plan is attached.

Inclinations: Survey every 500' or bit trip
Drop Totco every trip out to check the angle. Max inclination = 3°

Call Houston if survey is >= 3°

Mud Disposal Closed Loop system will be used. Haul off all cuttings and fluids.

Make sure to note anytime that the State of NM OCD are contacted on IADC report and Envest Reports.

WELL	WLHU INJECTOR/PRODUCER TYPE WELL		ENERVEST		
TYPE	VERTICAL-PROD	RIG	TBD	DATE	7/23/2012
FIELD	WEST LOCO HILLS	COUNTY	EDDY	ELEVATION	3516
GAS/OIL	OIL	MUD	TBD	CEMENT	????
LOCATION	Surf, 1980 FSL & 660' FWL Sec 1, T18S R29E			SBHT	NA

COMMENTS: OBJECTIVE FORMATIONS: GRAYBURG SAND and GRAYBURG 4 SAND

NOTE

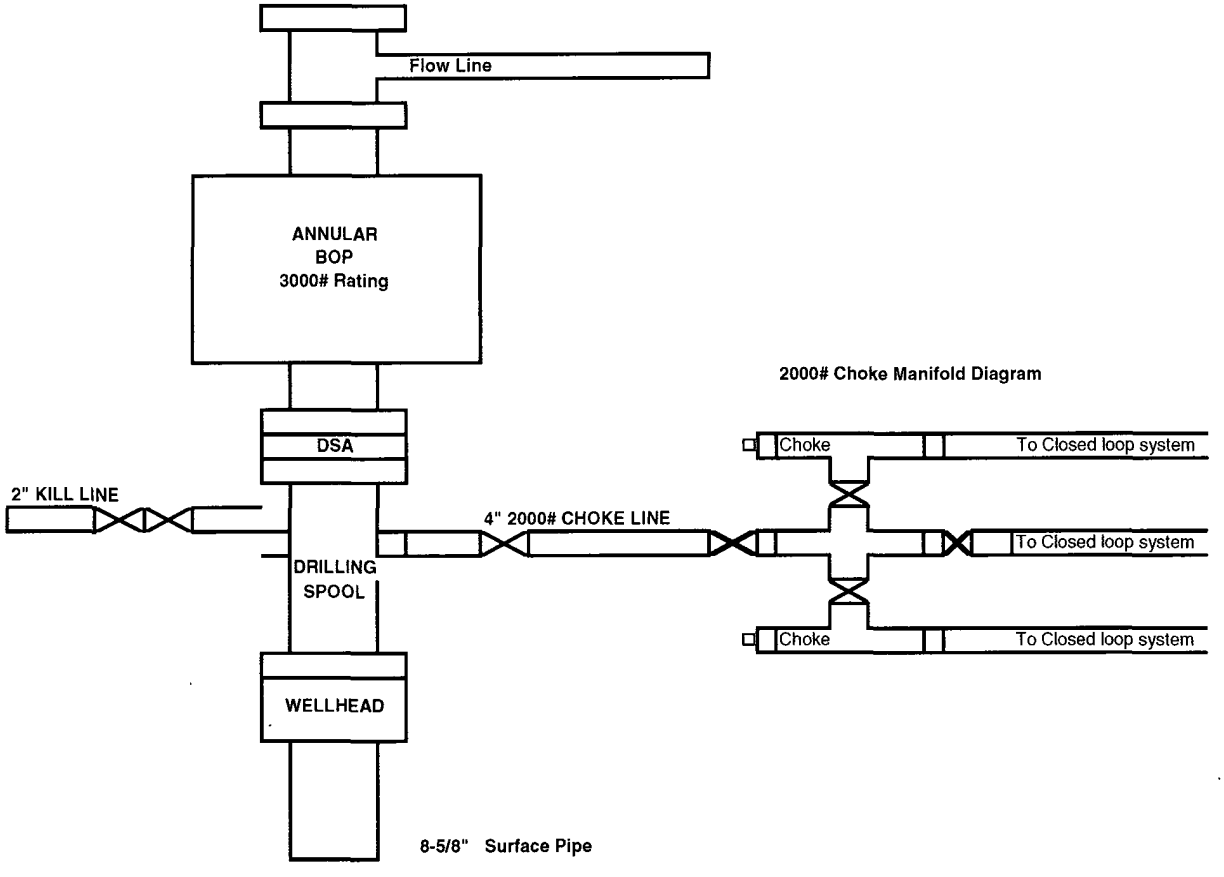
MUD-LOGGER	SURVEYS	WOB/GPM BIT	FORMATION TOPS HOLE SIZES	VERTICAL DEPTH	MUD WEIGHT	OPEN HOLE LOGS	CEMENT	WELLHEAD	REMARKS
			14" CONDUCTOR	**40'**					
	INCLINATIONS 200' & 400'	5K/300 10K/350 15K/350	12-1/4" HOLE		8.4 - 8.6 PPG NATIVE				
NO MUD LOGGER		SEC EBXSC1C SLICK BHA	**RED BEDS >**				CMT: 225 Sks Class "C" 2% $CaCl_2$ (1 32 YLD, 14.8 PPG) 100% Excess FLOAT COLLAR & TEXAS PATTERN SHOE		
			8-5/8" 24# J55 STC	**350**			TOP OUT: IF NEEDED		
INCLINATIONS EVERY 500' OR AS NEEDED		SEC EBXS20SR 40K/350 GPM 80-90 RPM SLICK BHA	7-7/8" HOLE **ANHYDRITE / SALT >**	419'	9.8 - 10.1 PPG BRINE PUMP HIGH VIS POLY SWEEPS ON CONNECTIONS				
		40K/350 GPM			< POS WATER INFLUX ~ 1700'				
		40K/350 GPM			OPEN HOLE LOGS: CONTRACTOR TBD TD TO SC: GR / LITHO DENSITY / NEUTRON / INDUCTION TD TO SURFACE: POSSIBLE GR / NEUTRON SIDEWALL CORES IN THE GRAYBURG 4 SAND				
			GRAYBURG SAND (LS/SS) >	**2694'**			CEMENT FOR 5-1/2" CASING LEAD: 210 SKS 50 50 POZ C & 2% CaCl2 (11.8 PPG 2 56 CF/SK) TAIL: 200 SKS CLASS "C" (14.8 PPG 1.33 CF/SK) (75% EXCESS OVER GAUGE HOLE) CEMENT TO SURFACE FLOAT SHOE, 1 JT, FLOAT COLLAR		
			PRODUCER: 5-1/2" 15.50# J55 LTC	**MD = 2800'**					

				OFFICE	HOME
AFE #	TBD	REGULATORY	R. Young / B. Trevino	713.659.3500	
EV #	TBD	SAFETY, HEALTH & ENVIRONMENTAL			
API #	TBD	ENGINEER	R. Trueheart/ L. Diede	713.495.1561 / 505.334.8867	
		GEOLOGIST	P. LeMay	713.495.5340	

ENERVEST

BOP DIAGRAM
WEST LOCO HILLS

Eddy County, New Mexico



EnerVest Operating, Ltd.

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards an characteristics of hydrogen sulfide (H2S)

2. The proper use and maintenance of personal protective equipment and life support systems.

3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.

4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

1. **Well Control Equipment:**

   A. Flare line.

   B. Choke manifold.

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

   D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. **Protective equipment for essential personnel:**

   A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. **H2S detection and monitoring equipment:**

   A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram (Exhibit #8).

   B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. Metallurgy:

A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

B. All elastomers used for packing and seals shall be H2S trim.

7. Communication:

A. Radio communications in company vehicles including cellular telephone and 2-way radio.

B. Land line (telephone) communication at Office.

8. Well testing:

A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

B. There will be no drill stem testing.

EXHIBIT #7

WARNING

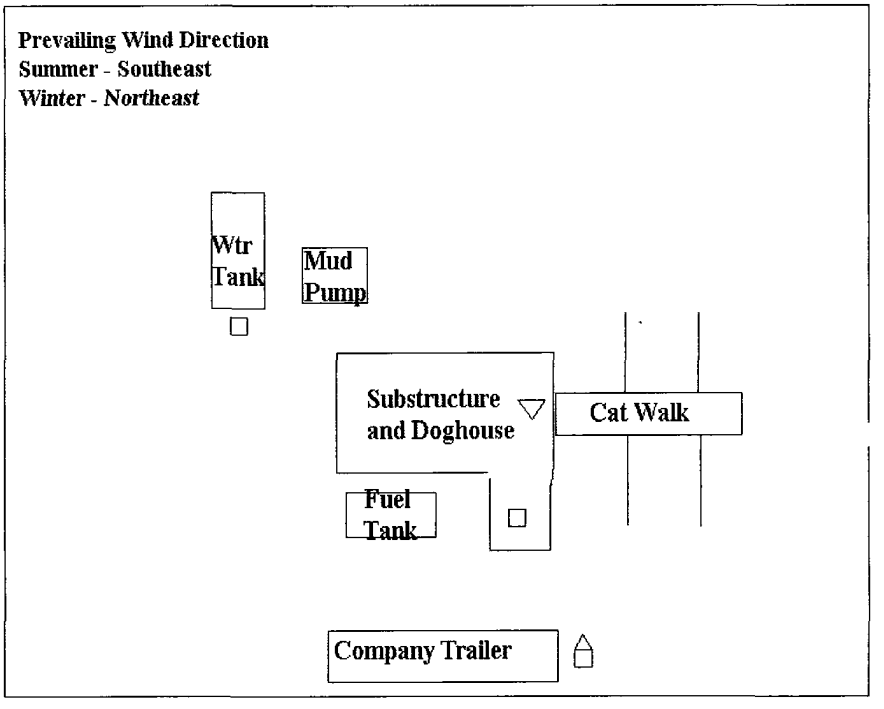
YOU ARE ENTERING AN H2S AREA

AUTHORIZED PERSONNEL ONLY

1. **BEARDS OR CONTACT LENSES NOT ALLOWED**
2. **HARD HATS REQUIRED**
3. **SMOKING IN DESIGNATED AREAS ONLY**
4. **BE WIND CONSCIOUS AT ALL TIMES**
5. **CHECK WITH ENERVEST DRILLING MANAGER AT**

EnerVest Operating, Ltd.
1-713-659-3500

DRILLING LOCATION
H2S SAFETY EQUIPMENT
Exhibit # 8



▽ H2S Monitors with alarms at the bell nipple

□ Wind Direction Indicators

⏢ Safe Briefing areas with caution signs and breathing equipment min 150 feet from