

**Hydrogen Sulfide Drilling Operations Plan**  
**Sun McKay Federal #4H**  
**Sec 10, T19S, R32E**  
**Lea County N.M.**

HOBBS OCT  
AUG 31 2015  
RECEIVED

1. Company and contract personnel admitted on location should be trained by a qualified H<sub>2</sub>S safety instructor to the recognize and handle following:
  - A. Characteristics of H<sub>2</sub>S gas
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing knowledge
  - E. Evacuation procedure, routes and first aid support
  - F. Proper use of 30 minutes Pressure-on-Demand Air Pack
2. Supervisory personnel will be trained in the following areas:
  - A. Effects of H<sub>2</sub>S on metal components.
  - B. Corrective action and shut in procedures, blowout prevention, and well control procedure.
  - C. Contents of Hydrogen Sulfide Drilling Operations Plan.
3. H<sub>2</sub>S Detection and Alarm Systems (will be in place after setting surface casing and will not drill ahead without alarm system working)
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, shale shaker and on derrick floor or doghouse installed and maintained by a third party safety company.
  - B. Thirty minute self-contained work unit located in dog house and at briefing areas.
3. Windsock and/or Wind Streamers
  - A. Windsock at mud pit area (high enough to be visible)
  - B. Windsock on dog house (high enough to be visible)
4. Condition Flags and Signs
  - A. H<sub>2</sub>S warning signs on lease access road into location
  - B. Flags displayed on sign at location entrance
    1. Green flag indicates "Normal Safe Conditions"
    2. Yellow Flag indicates "Potential Pressure and Danger"
    3. Red Flag indicates "Danger - H<sub>2</sub>S Present in High Concentrations" *admit only emergency personnel*
5. Well Control Equipment
  - A. See BOP, Choke, and Mud/Gas Separator exhibit.
  - B. Blow out preventers will be equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit. Annular type blowout preventer will also be in place. Supplemental fuel will be provided for flaring noncombustible gas.
6. Communication
  - A. While working under masks chalkboards will be used for communication
  - B. Hand signals will be used where chalk board is inappropriate
  - C. Two -way radios or cell phones used to communicate off location or minimally in Drilling Foreman's trailer or living quarters
7. Drillstem Testing (**not planned**)
  - A. Exhausts watered
  - B. Flare line equipped with electric Igniter/propane pilot light in case gas reaches surface

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C. If location near dwelling closed DST will be performed

9. If H<sub>2</sub>S encountered, mud system shall be addressed to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers, if necessary. pH will be maintained at 10, to minimize h<sub>2</sub>S in the system. Hydrogen sulfide scavengers will also be used to minimize hazards while drilling the well.
10. Mud program: pH of 10 will be maintained with additives to minimize hazards of H<sub>2</sub>S. H<sub>2</sub>S scavengers will also be used to minimize effects on tubulars and well control equipment and control effects of H<sub>2</sub>S on metallurgy.

## PUBLIC PROTECTION PLAN FOR EMERGENCY CONTACTS

**NADEL AND GUSSMAN Permian, LLC** (432) 682-4429

**Company Personnel**

Jason Goss	Drilling Engineer	432-682-4429 512-784-2613
Kurt Hood	Foreman	575-513-1499 575-746-1428

**ARTESIA N.M.**

Ambulance	911
State Police	575-748-9718
City Police	575-746-5000
Sheriff's Office	575-746-9888
Fire Department	575-746-5050 or 575-746-5051
N.M.O.C.D	575-748-1283

**CARLSBAD N.M.**

Ambulance	911
State Police	575-885-3138
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-885-3125 or 575-885-2111
Carlsbad BLM	575-234-5972

**HOBBS N.M.**

Ambulance	911
State Police	575-392-5580
City Police	575-397-9265
Sheriff's Office	575-396-3611
Fire Department	575-397-9308
N.M.O.C.D	575-393-6161
Hobbs BLM	575-393-3612

Flight for Life (Lubbock Tx)	806-743-9911
Aerocare (Lubbock Tx)	806-747-8923
Med flight air Ambulance (Albuq NM)	505-842-4433
SB air Med Services (Albuq NM)	505-842-4949

Wild Well Control	281-784-4700	Emergency Number 24 Hour
Boots & Coots IWC	281-931-8884	Emergency Number 24 Hour
Cudd Pressure Control	713-849-2769	Emergency Number 24 Hour
BJ Services	(Artesia NM) 575-746-3569	
	(Hobbs NM) 575-392-5556	

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

## OPERATOR CERTIFICATION

I certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true, and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed the 4th day of August 2014.

Name: Jason Goss

Position: Drilling Engineer

Address: 601 N. Marienfeld Suite 508

Telephone: 432-682-4429

Email: jgoss@naguss.com

Signed: \_\_\_\_\_

A handwritten signature in black ink, appearing to read 'JGoss', is written over a horizontal line.

# Nadel and Gussman Permian, LLC

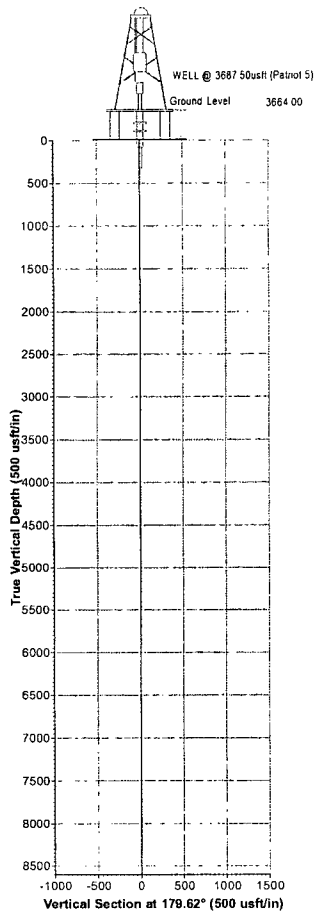
Project: Lea County, New Mexico (NAD27)  
 Site: Sun McKay Federal  
 Well: 4H  
 Wellbore: Wellbore #1 Job #1411461  
 Design: Plan #1 08-11-14  
 Rig: Patriot 5



**PHOENIX**  
 TECHNOLOGY SERVICES



Azimuths to Grid North  
 True North: -0.31°  
 Magnetic North: 7.01°  
 Magnetic Field  
 Strength: 48554.0 nT  
 Dip Angle: 80.50°  
 Date: 08/07/2014  
 Model: IGRF2010\_14



WELL DETAILS									
				Ground Level:	3664.00				
+N/S	+E/W	Northing	Easting	Latitude	Longitude				
0.00	0.00	612072.20	676061.20	32° 40' 52.97148 N	103° 45' 40.01868 W				

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	8942.54	0.00	0.00	8942.54	0.00	0.00	0.00	0.00	0.00
3	9592.54	90.00	179.62	9420.00	-177.45	3.16	12.00	179.62	477.46
4	13913.17	90.00	179.62	9420.00	-4696.00	31.06	0.00	0.00	4598.10

Annotation  
 KOP: Start Build 12.00°/100'  
 LP: 90° Inc at 179.62° Azm  
 TD at 13913.17

DESIGN TARGET DETAILS									
Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape	
BHL Sun McKay Federal 4H	9420.00	-4696.00	31.06	607374.20	676092.26	32° 40' 6.48231 N	103° 45' 39.95156 W	Point	

CASING DETAILS	
No casing data is available	

LEGEND	
— Plan #1 08-11-14	

Map System: US State Plane 1927 (Exact solution)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone Name: New Mexico East 3001  
 Local Origin: Well 4H, Grid North  
 Latitude: 32° 40' 52.97148 N  
 Longitude: 103° 45' 40.01868 W  
 Grid East: 676061.20  
 Grid North: 612072.20  
 Scale Factor: 1.000  
 Geomagnetic Model: IGRF2010\_14  
 Sample Date: 07-Aug-14  
 Magnetic Declination: 7.32°  
 Dip Angle from Horizontal: 80.50°  
 Magnetic Field Strength: 48554  
 To convert a Magnetic Direction to a Grid Direction, Add 7.01°  
 To convert a Magnetic Direction to a True Direction, Add 7.32° East  
 To convert a True Direction to a Grid Direction, Subtract 0.31°

**FORMATION TOP DETAILS**  
 No formation data is available

