Form C-101 May 27, 2004

1623 N French Dr , Hobbs, NM 88240

District II

130 W Grand Avenue, Artesia, NM 88210

District III

1000 Rio Brazos Road, Aztec, NM 87410

District IV



Oil Conservation Division 1220 South St. Francis Dr.

Submit to appropriate District Office

FEB 2 1 2008

MENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK OR ADD A ZONE    Compare			Santa Fe, NM				,	M 87505	0	CD-AR	TESI	A		0111
Property Code	APPI	LICATI	ION FOR	PERMIT	TO DI	RILL, R	E-ENTI	ER, DEEP	EN, P	LUGBA	CK, C	OR AD	D A ZONI	<u> </u>
Proposed Pool   Proposed Poo			P <sub>21</sub>	Operator Name	and Addres	SS				230387	<sup>2</sup> OGR	ID Number	r	
Property Code  Press Box 1923-5 State Com  Proposed Pool 2  Four Mile Draw; Wolfcamp, SW  Proposed Pool 2  Section   Proposed Pool 2  Proposed Pool 2  Surface Location  Press Box 1923-5 State Com  Proposed Pool 2  Surface Location  Press Box 1923-5 State Com  Proposed Pool 2  Surface Location  Proposed Bottom Hole Location If Different From Surface  United Into Surface Into Surface  Into Into Into Surface	10	04 N. B	sig Spring	Street, Suit	e 400, I	Midland	, TX. 79	701	T		³AP	LNumber	, ,47	
Press Box 1923-5 State Com    Proposed Poel 1   Four Mile Draw; Wolfcamp, SW						<sup>3</sup> Pror	perty Name			30	$\frac{Ol}{1}$	• Wel	1No	
Pour Mile Draw; Wolfcamp, SW   Surface Location   Section   Township   Range   Lot lata   Feet from the North-South line   Feet from the   East-West line   Eddy		<b>3</b>	}		Press	s Box 19	923-5 Sta	3-5 State Com 2						
Contract										10 Prop	osed Poo	ol 2		
Took to to   Scient   Township   Range   Lot his   Feet from the   Scient   Township   Scient   Township   Range   Lot his   Feet from the   Cacarty   Section   Township   Range   Lot his   Feet from the   Cacarty   Section   Township   Range   Lot his   Feet from the   Range   Lot his   Feet from the   Section   Township   Range   Lot his   Feet from the   Section   Feet from the   East-West hise   County		Fo	ur Mile D	raw; Wolfc	amp, S									
4 5 19 S 23 E 660 North 250 West Eddy  "Proposed Bottom Hole Location If Different From Surface  Lor lot no Section Township Frange Lot Ida Feef from the North-South Into Feet from the East-West Inte County  1 5 19 S 23 E Additional Well Information  "Work type Code North State Well Type Code North State Well Information  "Work type Code North State Well Type Code North State Well Information North North State Well Information North No			, <del></del>			<sup>'</sup> Surfa	ace Locat	ion				<del></del>		_
Lot for no   Section   Toweship   Range   Lot fain   Feet from the   North-South time   Feet from the   County   East   County   East   County   East   County   East				23 E	<u> </u>		660	North		250				
Additional Well Information  Additional Well Information  "Now Type Code New P 4046? Rep P 4046? "  Now Type Code New P 4046? "  "Multiple Proposed Depth Proposed Depth Now Now Sepand Date N			· · · · · · · · · · · · · · · · · · ·	<sup>8</sup> Propo	sed Botto	m Hole L	ocation If	Different Fro	om Surfa	ice	,			
Additional Well Information    Well Type Code	L or lot no			-	Lot I	dn F		l .	ne Fe			1		
"Work Type Code N G G R P P 4046  N G R P P 4046  NO 8740MD,4550TVD Wolfcamp NA NA  Pit to Groundwater 500' Distance from neurest fresh water well 7000' Distance from neurest surface water 2000' L. Liner Synthetic X 20 mils thick Clay Pit Volume 25000 bbls Drilling Method.  Closed-Loop System Proposed Casing and Cement Program  Hole Size Casing Size Casing weight/foot Setting Depth Sacks of Cement Estimated TOC 11' 8-5/8" 24# 1500' 325 Surface 7-7/8" 5-1/2" 17# TVD 4550' NA Tie back to surface water 40 NO 8740' Tie back to surface water 40 NO 8740' Tie back to surface North 20 NO 8740' Tie back to surface water 1500' Setting Depth Sacks of Cement Estimated TOC 11' 8-5/8" 24# 1500' 325 Surface 7-7/8" 5-1/2" 17# TVD 4550' NA Tie back to surface ND 8740' Tie back	<u> </u>	) 5	198	23 E	Ad	ditional				660	11	east	Eddy	
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Proposed Casing and Cement Program					<u> </u>					Distance fro	m neares	t surface wa	ater 2000	
Proposed Casing and Cement Program   Hole Size				thick Clay L	] Pit Vol	ume <sup>-</sup> 25000	bbls			. 🗖		. 🗂 .		
Hole Size  Casing Size  Casing weight/foot  Setting Depth  Sacks of Cement  Estimated TOC  11"  8-5/8"  24#  1500'  325  Surface  7-7/8"  5-1/2"  17#  TVD 4550'  NA  Tie back to surface  MD 8740'  Describe the proposed program If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone seserble the blowout prevention program, if any. Use additional sheets if necessary  Prepare surface location Move in and rig up drilling rig, spud well, drill and set conductor Install and test BOPE  Drill 11" surface hole to a minimum depth of 1500' Set 8-5/8" casing and cement  Drill 7-7/8" hole to approximately 5500' TD. Evaluate running mud logs and possibly DLL/CNL/LDT/CAL/GR to TD  Set kick-off pluin for kick-off point at 4130'. Drill and advance hole to a Wolfcamp penetration point at 660' FNL and 660' FWL of the NE corner of the section and continue drilling to BHL of 660' FNL and 660' FEL of the section Set 5-1/2" casing to TD and cement back to surface casing  Perforate porosity interval within the standard unit boundary (Producing Area on C-102)  Stimulate as necessary (specific procedure to be determined)  Place well on test  No H2S is anticipated during the drilling of this well.  Intereby certify that the information given above is true and complete to the st of my knowledge and belief I further certify that the drilling pit will be instructed according to NMOCD guidelines X, a general permit  nor an attached) alternative OCD-approved plan  Title  OIL CONSERVATION DIVISION  Approved by:  BRYAN G: ARRANT  Title  DISTRICT II GEOLOGIST  Expiration Date EB 2  Lagration Date EB 2	Clos	ed-Loop Sy	stem	21						rine Die	sel/Oıl-b	ased   C	ias/Air	
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-mail Address ddurham@plll.com	Prepare su Drill 11" s Drill 7-7/8 Set kick-o continue d Set 5-1/2" Perforate p Stimulate: Place well No H2S is I hereby ce est of my kr ponstructed attached) al	rface location for hole to apply for hole to apply for hole to apply for hole to apply for hole to as necessary on test anticipated extify that the nowledge are according liternative (	on Move in an to a minimum oproximately 5 kick-off point a HL of 660° FN TD and cement erval within the y (specific production of the information and belief I fur to NMOCD good of the information of the	nd rig up drilling i depth of 1500' 500' TD. Evaluat 4130'. Drill ail L and 660' FEL back to surface e standard unit be cedure to be determined of this well given above is the certify that uidelines X, a gd plan	rig, spud Set 8-5/8' ate running ad advance of the sect casing oundary (Fermined)	well, drill ar casing and mud logs a hole to a W tion  Producing A  mplete to the ing pit will	nd set conduction cement and possibly I followers on C-102	OLL/CNL/LDT etration point a	CAL/GR at 660° FN	to TD L and 660' F SERVA	IION RRAI GEO	DIVISI NT LOGIS	ON	and
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	ate: 2 /	/19/	2008	Phone. 432-6	84-3727		Condu	tions of Approv	al Attache	d 🗍				1

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410

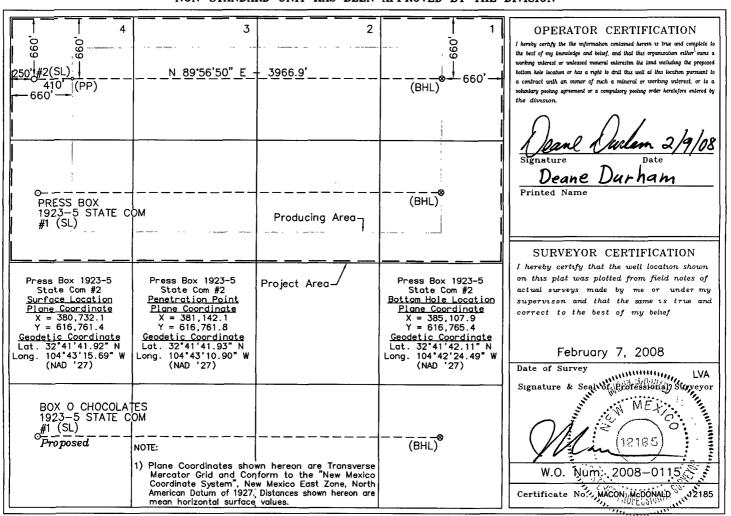
# State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Frances Dr. Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 ☐ AMENDED REPORT

#### WELL LOCATION AND ACREAGE DEDICATION PLAT

WELL LOCATION AND ACREAGE DEDICATION PLAT										
API			Pool Code		Pool Name					
30 <u>·()</u> 15	2	9	97553 Four Mile Draw; Wolfsen p, Sw Property Name Well Number							
Property	Code						1	Well Nun	ıber	
3548	9	٠		PRESS	BOX 1923-5	STATE COM		2	2	
OGRID N	0.				Operator Nam			Elevation		
2303	87		PA	RALLEL	PETROLEUM	CORPORATION		404	<b>6</b> '	
	Surface Location									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
4	5	19 S	23 E	1	660	NORTH	250	WEST	EDDY	
·			Bottom	Hole Loc	eation If Diffe	rent From Sur	face			
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
1	5	19 S	23 E		660	NORTH	660	EAST	EDDY	
Dedicated Acres	Joint or	Infill Co	nsolidation (	Code Or	der No.			<u> </u>		
320		]								
NO ALLOWA	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										
4 3 2 1 OPERATOR CERTIFICATION										
099	14.700000000.50/ // //	/ ^	· /^ va			. 09		nformation contained herein is tri		



# PARALLEL PETROLEUM CORPORATION PRESS BOX 1923-5 STATE COM #2 SL: 660' FNL AND 250' FWL, BHL: 660' FNL AND 660' FEL SEC 5, T19S, R23E EDDY COUNTY, NEW MEXICO

#### **Objective**

-

Drill a vertical well through the Wolfcamp pay. Log and evaluate for a sidetrack to horizontal in the Wolfcamp.

#### **Expected Geologic Tops**

GL: 4046', KB 4063'. Glorieta 1880' Tubb 2890' Abo Shale 3535' Wolfcamp 4550' Wolfcamp Shale 4660'

#### **Well Geometry**

- 8 5/8" casing at 1500'
- Set kick-off plug for horizontal through the zone of interest
- 5 1/2" casing through the horizontal Wolfcamp; Cement per completion.

#### **Casing Program**

<u>Hole</u>	MD (ft)	Casing	Weight	Grade	Coupling	COMMENT
11"	0 – 1500	8-5/8"	24	J55	ST&C	
7-7/8"	0 – TD'	5-1/2"	17	N80	LT&C	Run through the horizontal lateral.

#### **Casing Cementing Program**

8-5/8" slurry: Lead: 125 sacks (50:50) Poz (Fly Ash): Class C + 5% bwow Sodium Chloride + 10% bwoc Bentonite + 151.7% fresh water. Tail: 200 sacks Class C + 1% bwoc Calcium Chloride + 56.3% fresh water

<u>Note</u>: If cement does not circulate to surface, notify OCD. A temperature survey will be required. Top out to surface with 1" pipe in the annulus.

<u>Note</u>: 5-1/2" acid-soluble cement per completion procedure. Top of Cement should be tied back to surface casing at a minimum.

#### **Mud Program**

Depth	Hole	MW	Visc.	WL	Synopsis
0 - 1500	11"	8.4 –	28 - 29	No	FRESH WATER mud only to
		8.6		control	1500 ft. Severe loss potential.
					Circulate inner reserve. LCM:
					paper, fiber, cotton seed hulls.
1500 - 3400	7-7/8"	8.6 –	28 -29	No	Cut brine. Start w/existing & add
		9.2		control	brine t/80K-120K chlorides
-					
3400 – TD	7-7/8"	8.9 –	38 - 45	6 - 10	XCD/Starch polymer as req'd
		9.5			for hole cleaning. Lubricants.
KOP – TD	7-7/8"	8.9 –	38 - 45	6 - 10	XCD/Starch polymer as req'd
Horizontal		9.5			for hole cleaning. Lubricants.

-

KOP @ 4130' MD BUR = 13.6 DEG per 100 FT End Curve @ 4790' MD, 4550' TVD BHL @ 8740' MD, 4550' TVD, 4370' VS

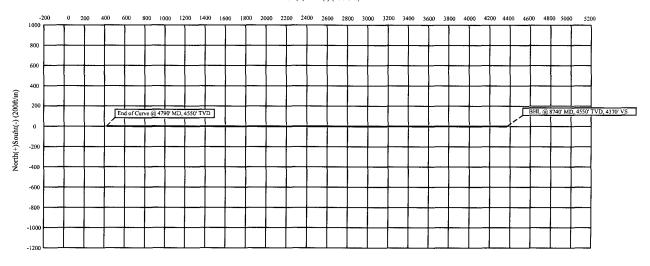
## Parallel Petroleum Corp.

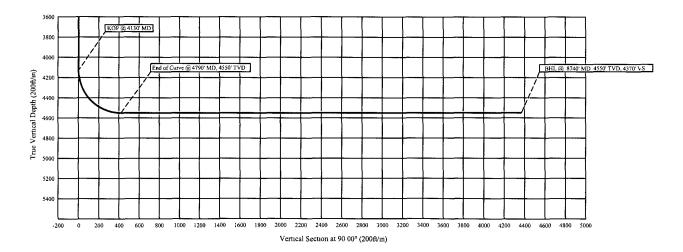
#### COMPANY DETAILS

Parallel Petroleum Corp. 1004 N. Big Spring, Ste 400 Midland, Texas 79701

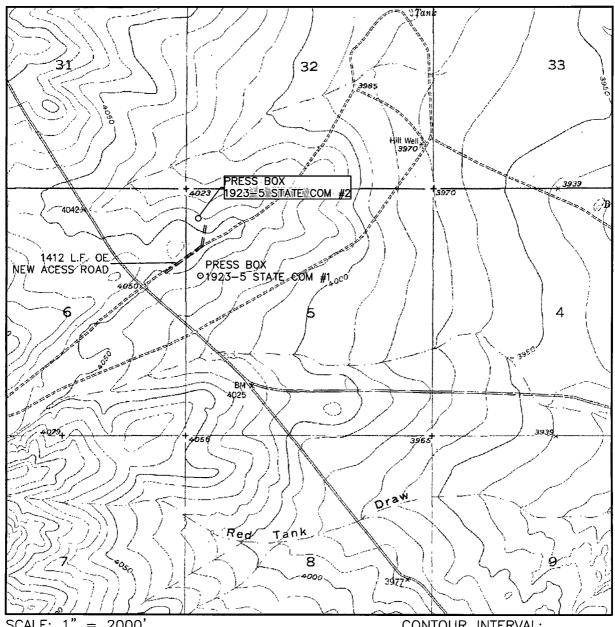
Press Box 1923-5 State Com #2 N/2 Sec. 5, T-19-S, R-23-E Eddy County, New Mexico

East(+)/West(-) (200ft/in)





# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: ANTELOPE SINK - 10'

SEC. 5 TWP. 19-S RGE. 23-E SURVEY N.M.P.M. COUNTY EDDY DESCRIPTION 660' FNL & 250' FWL ELEVATION 4046' OPERATOR PARALLEL PETROLEUM CORPORATION LEASE PRESS BOX 1923-5 STATE COM

U.S.G.S. TOPOGRAPHIC MAP ANTELOPE SINK, N.M.



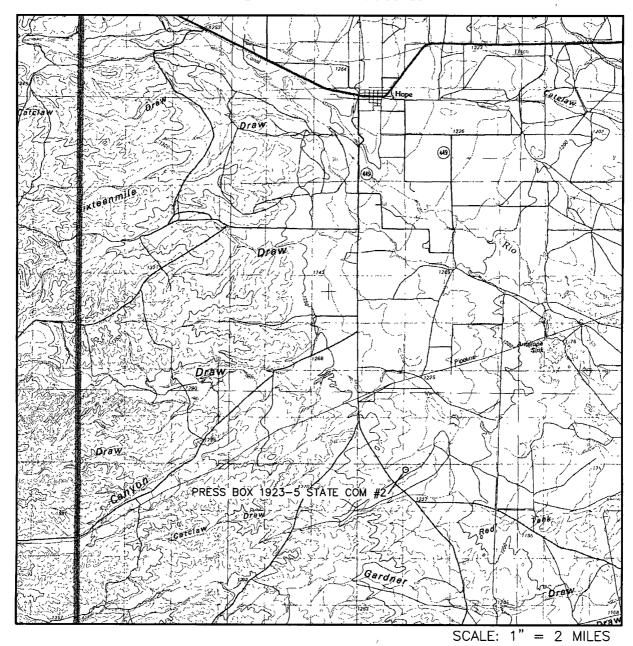
WEST

COMPANY

110 W. LOUISIANA, STE. 110

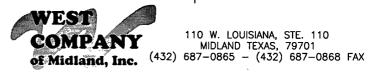
MIDLAND TEXAS, 79701

of Midland, Inc. (432) 687–0865 – (432) 687–0868 FAX



SEC. <u>5</u> TWP. <u>19-S</u> RGE. <u>23-E</u> SURVEY N.M.P.M. COUNTY EDDY DESCRIPTION 660' FNL & 250' FWL ELEVATION 4046' OPERATOR PARALLEL PETROLEUM CORPORATION LEASE PRESS BOX 1923-5 STATE COM







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1004 North Big Spring, Suite 400 • Midland, TX 79701 • Ph: 432-684-3727 • Fax: 432-684-3905

February 19, 2008

New Mexico Oil Conservation Division 1301 W. Grand Ave. Artesia, New Mexico 88210

Re: Hydrogen Sulfide Potential

South Hope Area Wolfcamp Program

Specifically: Press Box 1923-5 State Com #2

Eddy County, New Mexico

#### Ladies and Gentlemen:

Parallel Petroleum Corporation operates the Boxtop 1921-1 Federal #1 well located in Section 1, T-19-S, R-21-E, the Match Box Federal #1 and several more wells in the vicinity of the subject well. The wells were tested in the Wolfcamp formation. None have any indications of hydrogen sulfide from this formation. We believe the potential for it on locations in this area are negligible. There are no occupied dwellings within 1 mile of this well.

Should you need any additional information regarding this issue, please contact me at the address or phone number listed or email at ddurham@plll.com.

Sincerely,

Deane Durham Senior Engineer Wildcat Measurement Service, F O. Box 1836

Artesia. New Mexico \$8211-1836

TollFree #888-421-9453 Office #505-746-3481 "Quality and Service is our First Concern"

Run No. 270104-01 Date Pun 01/04/2007 Date Sampled 01/03/2007

GPANGL L62

PDS 06/25/00

Well Name: BOXTOP 1921-1 FEDERAL #1

Analysis for: PARALLEL PETROLEUM CORPORATION

Field:

Purpose SPOT

Sampling Temp: 60 DEG F

Volume/day:

Sta. Number

Pressure on Cylinder: 264.0 PSIG

Producer: PARALLEL PETROLEUM CORP.

County: KDDY State: NM

Sampled By: KARL HAENY

Atmos Temp: 46 DEG P

Formation:

Line Pressure: 277.2 PSIA

Pressure Base: 14.7300 GAS COMPONENT ANALYSIS

> Mol & GPM Real BTU Dry: 1137.57

Real BTU Wet: 1117.78 Real Calc. Specific Gravity: 0.6451

Pentane+ GPM: 0.3437

Field Specific Gravity: 0.0000

Carbon Dioxide CO2 0.0305 Standard Pressure: 14.6960

BTU Dry: 1131.88 N2 1.0321 Mitroden Hydrogen Sulfide H2S 0.0000 BTU Wet: 1112.18

Methane C1 88.8576 C2 5.9910 Ethane 1.6013 Propane 2.2039 C3 0.6068 Z Pactor: 0.9973

N Value. 1.2939 Iso-Butane IC4 0.3724 0.1218 Nor-Butane NC4 0.6621 0.2087 Avg Mol Weight: 18.6429 Iso-Pentane IC5 0.2086 0.0763 Nor-Pentane NC5 0.2002 0.0725 Avg CuPt/Gal: 56.9613 26 Lb Product: 0.5335

Methane+ GPM: 17.9425 Hexanes Plus C6+ 0.4466 0.1948 Bthane+ GPM: 2.8824 Propane+ GPM: 1 2810

Butane+ GPM: 0.6742

TOTAL 100.0000 2.8824

REMARKS:

H2S IN GAS STREAM: NONE DETECTED

Approved by: DON MORNAN

Thu Jan 04 15:07:53 2007



## Duke Energy Field Servic 3, LP.

15 26 48 **LCSHORT** 

### 370 17th Street, #2500 Denver CO 80202 Gas Analysis Certificate Report

Analysis ID: 720187-00

Alternate ID:

Box Top 19-21 #

Region:

**WEST** 

Company Name: PARALLEL PETROLEUM CORP

Effective Date: 05/01/2006 00:00

Saturated HV:

1095.6 Sample Date:

04/18/2006

Valid Thru Date: 01/18/2038 00.00

Last Update:

Sample ID:

1088001

04/24/2006 09:18

Dry HV: 1114.2 Sample Type: Spot

Analysis Origin: Portable Chromatoge Analysis Type: Lab analysis

Gravity:

0.6438 Sample Pressure Base: 14.650 Import Sample Temperature:

59.0

Source:

Sample Pressure:

144.0

Component	<u>% Mol</u>	GPM		
Methane	88.9440		C4 and lighter STCnd	0.0000
Ethane	5.5680	1.4800	C5 and heavier STCnd	0.0000
Propane	2.0820	0.5701	26 # Gasoline @14.65	0.4530
I Butane	0.3490	0.1135	26 Lbs. excess	0.0000
N Butane	0.6230	0.1953	Stock Tank Bbl/mm	0.0000
I Pentane	0.1940	0.0706	H20 GPMs	0.0000
Pentane	0.1810	0.0652	FWS Factor	0.0000
Hexanes+	0.3650	0.1584	FWS C6+or C7+ GPM	0.000
			Reject Override Code	1
			GC Unnormalized Mol%	97
			TestCar GPM Permian	0.381
			TestCar GPM Panhndle	0.478
Nitrogen	1.1320		Run Number	1088000
CO2	0.5610		H2S Test Type	0
Oxygen	0.0000		H2S Units	0
H2O	0.0000		H2S PPM	0
co	0.0000		TestCar GPM MidCon	0.436
H2S	0.0000			
Hydrogen	0.0000			
Helium	0.0000			
Argon	0.0000			
Total	99.9990	2.6531		

Comments:

NEW MEXICO SS,name chg. from Match Box Fed #1 to Box Top

#### **DCP Midstream**

05/14/2007 07.27.37 LCSHORT

### 370 17th Street, #2500 Denver CO 80202 Gas Analysis Certificate Report

Analysis ID: 720195-00 Alternate ID: Match Box Fed #

Region: WEST Company Name: PARALLEL PETROLEUM CORP

Effective Date: 05/01/2007 00:00 Saturated HV: 1112.7 Sample Date: 04/05/2007

Valid Thru Date: 01/18/2038 00 00 Sample ID: 2665001

nalysis Type: Lab analysis Source: Import Sample Temperature: 73.3
Sample Pressure: 219.9

Component	% Mol	GPM		
Methane	87.4540		C4 and lighter STCnd	0.0000
Ethane	6.4120	1.7044	C5 and heavier STCnd	0.0000
Propane	2.5270	0.6920	26 # Gasoline @14.65	0.4390
l Butane	0.4190	0.1363	26 Lbs. excess	0 0000
N Butane	0.7680	0.2408	Stock Tank Bbl/mm	0.0000
l Pentane	0.2160	0.0786	H20 GPMs	0 0000
Pentane	0.2030	0.0731	FWS Factor	0.0000
Hexares+	0.3170	0 1375	FWS C6+or C7+ GPM	0.000
			Reject Override Code	25
			GC Unnormalized Mol%	98
			TestCar GPM Permian	0.488
			TestCar GPM Panhndle	0.491
Nitrogen	1.2080		Run Number	2665000
CO2	0.4780		H2S Test Type	0
Oxygen	0.0000		H2S Units	0
H2O	0.0000		H2S PPM	0
CO	0.00 <b>0</b> 0		TestCar GPM MidCon	0 485
H2S	0.0000			
Hydrogen	0.0000			
Helium	0.0000			
Argon	0.0000			
Total	100.0020	3.0627		

Comments:

**NEW MEXICO SS** 

10: Deun



Legals:

Press Box 1923-5 State Com

Well #2

660' FNL & 250' FWL

Section 5

Township 19 South, Range 23 East, N.MY.M. Survey

Eddy County, New Mexico

# H<sub>2</sub>S

# "Contingency Plan"

CALLAWAY SAFETY EQUIPMENT CO. INC. 1020 W. Hwy. 80 East 3229 Industrial Drive Odessa, Texas 79765 Hobbs, New Mexico 88240 (432) 561-5049 (877) 422-6345 (505) 392-2973

#### **TABLE OF CONTENTS**

#### I. H2S Contingency Plan

- A. Scope
- B. Objective
- C. Discussion of Plan

#### **II. Emergency Procedures**

- A. Emergency Procedures
- B. Emergency Reaction Steps
- C. Simulated Blowout Control Drills

#### **III. Ignition Procedures**

- A. Responsibility
- B. Instructions

#### IV. Training Requirements

#### V. Emergency Equipment

#### VI. Check Lists

- A. Status Check List
- B. Procedural Check List

#### VII. Briefing Procedures

#### VIII. Evacuation Plan

- A. General Plan
- B. Emergency Phone Lists

#### IX. Maps and Plats

- A. Location Plat
- B. Map to Location
- C. Radius of Exposure

#### X. General Information

- A. Drilling/Re-entry Permits
- B. H-9 Permit

- C. H2s Permissible Limits

7

- D. Toxicity Table
  E. Physical Properties
  F. Respirator Use
  G. Emergency Rescue

#### H<sub>2</sub>S CONTINGENCY PLAN SECTION

#### Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H<sub>2</sub>S).

#### Objective:

Prevent any and all accidents, and prevent the uncontrolled release of H<sub>2</sub>S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

#### Discussion of Plan:

#### Suspected Problem Zones:

*Implementation:* This plan, with all details, is to be fully implemented 1000' before drilling into the first sour zone.

**Emergency Response Procedure:** This section outlines the conditions and denotes steps to be taken in the event of an emergency.

**Emergency Equipment and Procedure:** This section outlines the safety and emergency equipment that will be required for the drilling of this well.

**Training Provisions:** This section outlines the training provisions that must be adhered to 1000' before drilling into the first sour zone.

**Emergency call lists:** Included are the telephone numbers of all persons that would need to be contacted, should an H2S emergency occur.

**Briefing:** This section deals with the briefing of all persons involved with the drilling of this well.

**Public Safety:** Public Safety Personnel will be made aware of the drilling of this well.

**Check Lists:** Status check lists and procedural check lists have been included to ensure adherence to the plan.

**General Information:** A general information section has been included to supply support information.

#### **EMERGECY PROCEDURES SECTION**

- I. In the event of any evidence of H<sub>2</sub>S level above 10 ppm, take the following steps immediately:
  - A. Secure breathing apparatus.
  - B. Order non-essential personnel out of the danger zone.
  - C. Take steps to determine if the H<sub>2</sub>S level can be corrected or suppressed, and if so, proceed with normal operations.
- II. If uncontrollable conditions occur, proceed with the following:
  - A. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the New Mexico Oil Conservation Division.
  - B. Remove all personnel to the Safe Briefing Area.
  - C. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation.
  - D. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.
- III. Responsibility:
  - A. The Company Approved Supervisor shall be responsible for the total implementation of the plan.
  - B. The Company Approved Supervisor shall be in complete command during any emergency.
  - C. The Company Approved Supervisor shall designate a back up Supervisor in the event that he/she is not available.

**EMERGENCY PROCEDURE IMPLEMENTATION** 

#### I. Drilling or Tripping

#### A. All Personnel

- 1. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
- 2. Check status of other personnel (buddy system).
- 3. Secure breathing apparatus.
- 4. Wait for orders from supervisor.

#### B. Drilling Foreman

- 1. Report to the upwind Safe Briefing Area.
- 2. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
- 3. Determine the concentration of H<sub>2</sub>S.
- 4. Assess the situation and take appropriate control measures.

#### C. Tool Pusher

- 1. Report to the upwind Safe Briefing Area.
- 2. Don breathing apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).
- 3. Determine the concentration.
- 4. Assess the situation and take appropriate control measures.

#### D. Driller

- 1. Check the status of other personnel (in a rescue attempt, always use the buddy system).
- 2. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.

3. Assume the responsibility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

#### E. Derrick Man and Floor Hands

1. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

#### F. Mud Engineer

- 1. Report to the upwind Safe Briefing Area.
- 2. When instructed, begin check of mud for pH level and H<sub>2</sub>S level.

#### G. Safety Personnel

- 1. Don Breathing Apparatus.
- 2. Check status of all personnel.
- 3. Wait for instructions from Drilling Foreman or Tool Pusher.

#### II. Taking a Kick

- A. All personnel report to the upwind Safe Briefing Area.
- B. Follow standard BOP procedures.

#### III. Open Hole Logging

- A. All unnecessary personnel should leave the rig floor.
- B. Drilling Foreman and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

#### IV. Running Casing or Plugging

- A. Follow "Drilling or Tripping" procedures.
- B. Assure that all personnel have access to protective equipment.

#### SIMULATED BLOWOUT CONTROL DRILLS

All drills will be initiated by activating alarm devices (air horn). One long blast, on the air horn, for ACTUAL and SIMULATED Blowout Control Drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill # 1 Bottom Drilling

Drill #2 Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire pit drill assignment. The times must be recorded on the IADC Driller's Log as "Blowout Control Drill".

Drill No.:

Reaction Time to Shut-In: minutes, seconds.

Total Time to Complete Assignment: minutes, seconds.

#### I. Drill Overviews

- A. Drill No. 1- Bottom Drilling
  - 1. Sound the alarm immediately.
  - 2. Stop the rotary and hoist kelly joint above the rotary table.
  - 3. Stop the circulatory pump.
  - 4. Close the drill pipe rams.
  - 5. Record casing and drill pipe shut-in pressures and pit volume increases.
- B. Drill No. 2 Tripping Drill Pipe
  - 1. Sound the alarm immediately.
  - 2. Position the upper tool joint just above the rotary table and set the slips.

- 3. Install a full opening valve or inside blowout preventor tool in order to close the drill pipe.
- 4. Close the drill pipe rams.
- 5. Record the shut-in annular pressure.

#### II. Crew Assignments

#### A. Drill No. 1 - Bottom Drilling

#### 1. Driller

- a) Stop the rotary and hoist kelly joint above the rotary table.
- b) Stop the circulatory pump.
- c) Check flow.
- d) If flowing, sound the alarm immediately.
- e) Record the shut-in drill pipe pressure.
- f) Determine the mud weight increase needed or other courses of action.

#### 2. Derrickman

- a) Open choke line valve at BOP.
- b) Signal Floor Man # 1 at accumulator that choke line is open.
- c) Close choke and upstream valve after pipe rams have been closed.
- d) Read the shut-in annular pressure and report readings to Driller.

#### 3. Floor Man # 1

- a) Close the pipe rams after receiving the signal from the Derrickman.
- b) Report to Driller for further instructions.

#### 4. Floor Man # 2

- a) Notify the Tool Pusher and Operator Representative of the H<sub>2</sub>S alarms.
- b) Check for open fires and, if safe to do so, extinguish them.
- c) Stop all welding operations.
- d) Turn-off all non-explosion proof lights and instruments.
- e) Report to Driller for further instructions.

#### 5. Tool Pusher

- a) Report to the rig floor.
- b) Have a meeting with all crews.
- c) Compile and summarize all information.
- d) Calculate the proper kill weight.
- e) Ensure that proper well procedures are put into action.

#### 6. Operator Representative

- a) Notify the Drilling Superintendent.
- b) Determine if an emergency exists and if so, activate the contingency plan.

#### B. Drill No. 2 – Tripping Pipe

#### 1. Driller

- a) Sound the alarm immediately when mud volume increase has been detected.
- b) Position the upper tool joint just above the rotary table and set slips.
- c) Install a full opening valve or inside blowout preventor tool to close the drill pipe.
- d) Check flow.
- e) Record all data reported by the crew.

f) Determine the course of action.

#### 2. Derrickman

- a) Come down out of derrick.
- b) Notify Tool Pusher and Operator Representative.
- c) Check for open fires and, if safe to do so, extinguish them.
- d) Stop all welding operations.
- e) Report to Driller for further instructions.

#### Floor Man # 1

- a) Pick up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 2).
- b) Tighten valve with back-up tongs.
- c) Close pipe rams after signal from Floor Man # 2.
- d) Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.
- e) Report to Driller for further instructions.

#### 4. Floor Man # 2

- a) Pick-up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 1).
- b) Position back-up tongs on drill pipe.
- c) Open choke line valve at BOP.
- d) Signal Floor Man # 1 at accumulator that choke line is open.
- e) Close choke and upstream valve after pipe rams have been closed.
- f) Check for leaks on BOP stack and choke manifold.
- g) Read annular pressure.

h) Report readings to the Driller.

#### 5. Tool Pusher

- a) Report to the rig floor.
- b) Have a meeting with all of the crews.
- c) Compile and summarize all information.
- d) See that proper well kill procedures are put into action.

#### 6. Operator Representative

- a) Notify Drilling Superintendent
- b) Determine if an emergency exists, and if so, activate the contingency plan.

#### **IGNITION PROCEDURES**

#### Responsibility:

1

The decision to ignite the well is the responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. In the event the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

- 1. Human life and property are endangered.
- 2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

#### Instructions for Igniting the Well:

- 1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.
- 2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.
- 3. Ignite from upwind and do not approach any closer than is warranted.
- 4. Select the ignition site best suited for protection and which offers an easy escape route.
- 5. Before igniting, check for the presence of combustible gases.
- 6. After igniting, continue emergency actions and procedures as before.
- 7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

NOTE: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Do not assume the area is safe after the well is ignited.

#### TRAINING PROGRAM

When working in an area where Hydrogen Sulfide (H<sub>2</sub>S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

- 1. Hazards and Characteristics of Hydrogen Sulfide.
- 2. Physicals effects of Hydrogen Sulfide on the human body.
- 3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
- 4. H<sub>2</sub>S detection, emergency alarm and sensor location.
- 5. Emergency rescue.
- 6. Resuscitators.

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- 7. First aid and artificial resuscitation.
- 8. The effects of Hydrogen Sulfide on metals.
- 9. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H<sub>2</sub>S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

#### **EMERGENCY EQUIPMENT REQUIREMENTS**

#### Lease Entrance Sign:

Should be located at the lease entrance with the following information:

# CAUTION-POTENTIAL POISON GAS HYDROGEN SULFIDE NO ADMITTANCE WITHOUT AUTHORIZATION

#### **Respiratory Equipment:**

- Fresh air breathing equipment should be placed at the safe briefing areas and should include the following:
- Two SCBA's at each briefing area.
- Enough air line units to operate safely, anytime the H<sub>2</sub>S concentration reaches the IDLH level (100 PPM).
- Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

#### Windsocks or Wind Streamers:

- A minimum of two 10" windsocks located at strategic locations so that they
  may be seen from any point on location.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

#### **Hydrogen Sulfide Detector and Alarms:**

- 1-Four channel H<sub>2</sub>S monitor with alarms.
- Four (4) sensors located as follows: # 1 Rig Floor, # 2 Bell Nipple, # 3
   Shale Shaker, # 4 Mud Pits.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

#### Well Condition Sign and Flags:

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions YELLOW – Potential Danger RED – Danger, H2S Gas Present

#### **Auxiliary Rescue Equipment:**

- Stretcher
- 2 100' Rescue lines
- First Aid Kit properly stocked.

#### **Mud Inspection Equipment:**

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

#### **Fire Extinguishers:**

Adequate fire extinguishers shall be located at strategic locations.

#### **Blowout Preventor:**

- The well shall have hydraulic BOP equipment for the anticipated BHP.
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

#### **Confined Space Monitor:**

There should be a portable multi-gas monitor with at least 3 sensors (O<sub>2</sub>, LEL & H2S). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

#### **Communication Equipment:**

 Proper communication equipment such as cell phones or 2 – way radios should be available at the rig.

- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

#### **Special Control Equipment:**

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.

#### **Evacuation Plan:**

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

#### **Designated Areas:**

#### Parking and Visitor area:

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- · Designated smoking area.

#### Safe Briefing Areas:

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.
- Personal protective equipment should be stored at both briefing areas or if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

#### NOTE:

- Additional equipment will be available at the nearest Callaway Safety Office.
- Additional personal H<sub>2</sub>S monitors are available for all employees on location.

• Automatic Flare Igniters are recommended for installation on the rig.

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#### **CHECK LISTS**

#### **Status Check List**

Note: Date each item as they are implemented.

1.	Sign at location entrance.
2.	Two (2) wind socks (in required locations).
3.	Wind Streamers (if required).
4.	SCBA's on location for all rig personnel and mud loggers.
5.	Air packs, inspected and ready for use.
6.	Spare bottles for each air pack (if required).
7.	Cascade system for refilling air bottles.
8.	Cascade system and hose line hook up.
9.	Choke manifold hooked-up and tested. (Before drilling out surface casing.)
10.	Remote Hydraulic BOP control (hooked-up and tested before drilling out surface casing).
11.	BOP tested (before drilling out surface casing).
12.	Mud engineer on location with equipment to test mud for H <sub>2</sub> S.
13.	Safe Briefing Areas set-up.
14.	Well Condition sign and flags on location and ready.
15.	Hydrogen Sulfide detection system hooked-up & tested.
16.	Hydrogen Sulfide alarm system hooked-up & tested.
17.	Stretcher on location at Safe Briefing Area.
18.	2-100' Life Lines on location.

19.	1-20# Fire Extinguisher in safety trailer.		
20.	Confined Space Monitor on location and tested.		
21.	All rig crews and supervisor trained (as required).		
22.	Access restricted for unauthorized personnel.		
23.	Drills on H <sub>2</sub> S and well control procedures.		·
24.	All outside service contractors advised of potential $H_2\mbox{S}$ on the well.		
25.	NO SMOKING sign posted.		
26.	H₂S Detector Pump w/tubes on location.	<del></del> -	
27.	25mm Flare Gun on location w/flares.		
28.	Automatic Flare Ignitor installed on rig.		

#### **Procedural Check List**

#### Perform the following on each tour:

- 1. Check fire extinguishers to see that they have the proper charge.
- 2. Check Breathing equipment to insure that they have not been tampered with.
- 3. Check pressure on the supply air bottles to make sure they are capable of recharging.
- 4. Make sure all of the Hydrogen Sulfide detection systems are operative.

#### Perform the following each week:

- Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.
- 2. BOP skills.
- 3. Check supply pressure on BOP accumulator stand-by source.
- 4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready to use.
- 5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
- 6. Check all cascade system regulators to make sure they work properly.
- 7. Perform breathing drills with on-site personnel.
- 8. Check the following supplies for availability:
  - Stretcher
  - Safety Belts and ropes.
  - Spare air bottles.
  - Spare oxygen bottles (if resuscitator required).
  - Gas Detector Pump and tubes.
  - Emergency telephone lists.

9. Test the Confined Space Monitor to verify the batteries are good.

#### **BRIEFING PROCEDURES**

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

#### **Pre-Spud Meeting**

Date: Prior to spudding the well. Attendance: Drilling Supervisor

Drilling Engineer Drilling Foreman Rig Tool Pushers Rig Drillers

Mud Engineer

All Safety Personnel

Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to insure

complete understanding of assignments and responsibilities.

#### **EVACUATION PLAN**

#### General Plan

The direct lines of action prepared by CALLAWAY SAFETY EQUIPMENT CO., INC., to protect the public from hazardous gas situations are as follows:

- 1. When the company approved supervisor (Drilling Foremen, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.
- 2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation need to be implemented.
- 3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.
- 4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

**See Emergency Action Plan** 

# **Emergency Assistance Telephone List**

PUBLIC SAFETY:		911 or
Chavez Co. Sheriff		(505) 624-6770
Fire Department		(505) 624-6800
Hospital/Roswell,N.M.		(505) 622-8170
Life Flight:		
Southwest Air-Med E Vac.		(800) 242-6199
Lat: 33'01'17.73"N. Long: 104'26'42.18" W.		
New Mexico D.O.T.		(505) 827-5100
Bureau of Land Management		(505) 393-3612
U. S. Dept. of Labor New Mexico OCD		(505) 248-5302 (505) 393-6161
New Mexico OCD New Mexico/After Hours		(505) 370-7106
Parallel Petroleum Corporation Parallel Petroleum Corporation/Midland, TX	Office	(432) 684-3727
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Superintendent:		
Donnie Hill		(432) 684-3727
	Cell	(432) 934-7164
Drilling Engineer:	0.55	(100) 00 1 0000
Deane Durham	Cell	(432) 684-3727 (432) 413-9701
Callaway Safety Equipment		
Odessa	Office	(432) 561-5049
Hobbs		(877) 422-6345
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#### **Affected Notification List**

(within a '	radius	of ex	posure	@10	Oppm)	Ì

The geologic zones that will be encountered during drilling are not known to contain hazardous quantities of  $H_2S$ . The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

**Evacuee Description:** 

Residents: THERE ARE NO RESIDENTS WITHIN 3000' ROE.

**Notification Process:** 

A continuos siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

**Evacuation Plan:** 

All evacuees will migrate lateral to the wind direction.

The Oil Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.

# MAPS AND PLATS (Maps & Plats Attached)

**GENERAL INFORMATION** 

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### Toxic Effects of H<sub>2</sub>S Poisoning

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Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table I. Toxicity table for H<sub>2</sub>S and physical effects are shown in Table II.

**Table 1**Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	С	
Hydrogen Sulfide	H₂S	1.192	10 ppm	15 ppm	100 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	co	0.97	25 ppm	200 ppm	
Carbon Dioxide	CO <sub>2</sub>	1.52	5000 ppm	30,000 ppm	1
Methane	CH₄	0.55	4.7% LEL	14% UEL	

#### **Definitions**

- A. TLV Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.
- B. STEL Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H<sub>2</sub>S is 19 PPM.
- C. IDLH Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H<sub>2</sub>S is 100 PPM.

D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.

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**TABLE II**Toxicity Table of H<sub>2</sub>S

Percent %	PPM	Physical Effects
,0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure
.0015	15	STEL for 15 minutes of exposure
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins in a few minutes.
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

PHYSICAL PROPERTIES OF H2S

The properties of all gasses are usually described in the context of seven major categories:

COLOR
ODOR
VAPOR DENSITY
EXPLOSIVE LIMITS
FLAMMABILITY
SOLUBILITY (IN WATER)
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

#### **COLOR – TRANSPARENT**

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Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. a fact that makes the gas extremely dangerous to be around.

#### **ODOR - ROTTEN EGGS**

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However, H<sub>2</sub>S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

#### **VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192**

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H<sub>2</sub>S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

## **EXPLOSIVE LIMITS - 4.3% TO 46%**

Mixed with the right proportion of air or oxygen, H<sub>2</sub>S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

#### **FLAMMABILITY**

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Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO<sub>2</sub>), another hazardous gas that irritates the eyes and lungs.

#### **SOLUBILITY – 4 TO 1 RATIO WITH WATER**

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of  $H_2S$  is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing  $H_2S$  may release the gas into the air.

# **BOILING POINT – (-76 degrees Fahrenheit)**

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

#### **RESPIRATOR USE**

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The Occupational Safety and Health Administration (OSHA) regulates the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete a OSHA mandated medical evaluation questionnaire. The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gasses.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone that may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

- A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H2S.
- B. When breaking out any line where H2S can reasonably be expected.
- C. When sampling air in areas where H2S may be present.
- D. When working in areas where the concentration of H2S exceeds the Threshold Limit Value for H2S (10 ppm).
- E. At any time where there is a doubt as to the H2S level in the area to be entered.

#### **EMERGENCY RESCUE PROCEDURES**

#### DO NOT PANIC!!!

#### Remain Calm - THINK

- 1. Before attempting any rescue you must first get out of the hazardous area yourself. Go to a safe briefing area.
- 2. Sound an alarm and activate the 911 system.
- 3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.
- 4. Rescue the victim and return them to a safe briefing area.
- 5. Perform an initial assessment and begin proper First Aid/CPR procedures.
- 6. Keep the victim lying down with a blanket or coat, etc..., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.
- 7. If the eyes are affected by H2S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.
- 8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.
- 9. Any personnel overcome by H2S should always be examined by medical personnel. They should always be transported to a hospital or doctor.