Petrotek

Technical Report

DEEPWELL STIMULATION REPORT
CLASS I NON-HAZARDOUS DEEPWELL

MEWBOURNE WDW-1
(OCD UIC Permit: UICI-008-1)
(API Number: 30-015-27592)

HF Sinclair

Navajo Refining Company
Artesia, New Mexico

Section 31, Township 17S, Range 28E
660 FSL, 2310 FEL

December 2023

5935 South Zang Street, Suite 200
Littleton, Colorado 80127
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TECHNICAL REPORT
DEEPWELL STIMULATION REPORT
CLASS I NON-HAZARDOUS DEEPWELL MEWBOURNE WDW-1
(OCD UIC Permit: UICI-008-1)
(API Number: 30-015-27592)

Navajo Refining Company
Artesia, New Mexico

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1.0 INTRODUCTION

This report summarizes the stimulation activities performed on the Mewbourne WDW-1 well (WDW-1) at the HFSinclair Navajo Refining Company (HFSNR) facility in Artesia, New Mexico during the period of November 15 through 17, 2023. These activities were performed in accordance with the Form C-103 Cleanout and Stimulation Plan submitted to the New Mexico Oil Conservation Division (OCD) on October 26, 2023. OCD approved the Stimulation Plan in correspondence dated October 27, 2023. The Plan and OCD approval are provided in Attachment 1.

HFSNR currently operates four Class I Non-Hazardous waste injection wells at the HFSNR refinery. Underground sources of drinking water (USDWs) are protected by multiple strings of casing and cement circulated to surface in each of the wells. Waste fluids are delivered to the injection interval in WDW-1 via 4½-inch diameter 11.6 lb/ft, L-80 steel injection tubing.

The annulus area between the protective casing and injection tubing is filled with an inhibited brine. The annulus pressure is continually monitored to detect any potential leaks in the tubing or casing.

The stimulation activities described below were conducted via coiled tubing without removing the tubing, packer or any valves on the wellhead. The annulus seal was not disturbed during the stimulation procedure. No testing or inspections were required as a result of this work.

Unless otherwise noted, depths recorded in this report related to the stimulation are referenced to measured depth from Kelly Bushing (KB).

2.0 BACKGROUND AND SUMMARY

Field activities involved performing mechanical jetting and chemical stimulation of WDW-1. Ken Schlieper of Petrotek supervised all field activities. On November 14, 2023, CUDD Pressure Control (CUDD) mobilized a coiled tubing unit (CTU), a pump truck and a nitrogen pumper to location. On November 15, a 1.75-inch CTU with rotary wash nozzle was rigged up to the well.

The following provides a summary of the work performed on WDW-1, presented in chronological order.

On November 16, 1.75-inch coiled tubing with a 12-port, self-adjusting rotary wash nozzle rotary wash nozzle was run to a depth of 8,950 feet while jetting the well with nitrified 1% potassium chloride (KCl) fluid. Approximately 260 barrels (bbls) of nitrified 1% KCl fluid were pumped through the coiled tubing and rotary wash nozzle to scour the perforated interval from 7,924 feet to 8,476 feet and reach a total cleanout depth of 8,950 feet. During this process, approximately 573 bbls of fluid were produced back to the tanks at surface. Approximately 50 bbls of the soak solution shown in Table 1 below were then spotted throughout the perforated interval. The coiled tubing was displaced with 36 bbls of 1% KCl fluid and pulled from the well. This treatment was left to soak overnight.

Table 1
Acid Blend Soak Solution

Acid Blend	Quantity (barrels)
15% Hydrochloric Acid (HCl)	37.5
Plexhib 166, Corrosion Inhibitor @ 12 gpt w/Acid	0.6
Plexbreak 145, Non-Emulsifier @ 12 gpt w/Acid	0.6
Xylene, 11.2% w/Acid	5.6
AcidLink 701A, Solvent Acid Dispersant @ 40 gpt w/Acid	2.0
Citric Acid, 50% @ 75 gpt w/Acid	3.8
Total:	50

On November 17, the coiled tubing with rotary wash nozzle was run to a depth of 8,950 feet while jetting the well with nitrified 1% KCl fluid. Approximately 195 bbls of nitrified 1% KCl fluid were pumped through the coiled tubing and rotary wash nozzle to scour the perforated interval from 7,924 feet to 8,476 feet and reach a total cleanout depth of 8,950 feet. During this process, approximately 877 bbls of fluid returns were produced to the tanks at surface. Approximately 250 bbls of the stimulation solution shown in Table 2 were then spotted throughout the perforated interval. The coiled tubing was displaced with 36 bbls of 1% KCl fluid. This treatment was left to soak overnight before HFSNR resumed injection operations on WDW-1.

Table 2
Acid Blend Stimulation Solution

Acid Blend	Quantity (barrels)
7.5% HCl	209.3
Plexhib 166, Corrosion Inhibitor @ 6 gpt w/Acid	1.5
Plexbreak 145, Non-Emulsifier @ 6 gpt w/Acid	1.5
Xylene, 5.6% w/Acid	14.0
AcidLink 701A, Solvent Acid Dispersant @ 20 gpt w/Acid	5.0
Citric Acid, 50% @ 75 gpt w/Acid	18.8
Total:	250

The safety data sheet for the acid blend listed in Tables 1 and 2 is presented as Attachment 2.

A summary of daily activities is presented as Section 3 of this report. A Job Detail Report and Post Job Report from CUDD are included as Attachments 3 and 4, respectively.

3.0 SUMMARY OF WORK ACTIVITIES

The following provides a summary of the activities conducted on WDW-1 the cleanout stimulation.

Wednesday, November 15, 2023

Arrived onsite at 0800 hours, FESCO, Ltd. was already onsite. Waited on CUDD to complete site-specific safety training for contractor access to WDW-1 location. Shut-in and locked-out/tagged-out (LOTO) WDW-1 with HFSNR operator at 0920 hours. CUDD arrived on location at 1040 hours. Acquired safe work permit from operations department and conducted tailgate safety meeting and completed job hazard analysis (JHA) with FESCO, CUDD and HFSNR personnel for approved procedures at 1050 hours.

Swapped doghouse from 1.25-inch CTU to 1.75-inch CTU and made necessary connections. Rigged-up flowback iron to CTU and frac tanks. Rigged up CTU blowout preventer (BOP).

Shut down for night (SDFN) at 1630 hours.

Thursday, November 16, 2023

Arrived on location at 0700 hours. Acquired safe work permit from operations department and conducted tailgate safety meeting and completed JHA for approved procedures.

Rigged up injector head. Function tested BOPs - good test. Tested wash nozzle. Pressure tested iron and stack at 1,000 and 2,500 psi and observed a leak in iron. Tightened connections and pressure tested iron and stack at 1,000 and 2,500 psi again - successful test. Opened well at 0818 hours and ran in hole with 12-port rotary wash nozzle. Cleaned well to a depth 8,950 feet with nitrified 1% KCl while reciprocating rotary wash nozzle throughout length of perforated interval from 7,924 feet to 8,476 feet. Used approximately 260 bbls of nitrified 1% KCl fluid to flowback approximately 573 bbls of fluid. Spotted approximately 50 bbls of 15% HCl with additives across the perforated interval, displaced coil with 36 bbls of 1% KCl fluid. Returned coil tubing to surface at 1715 hours. Rigged down injector head and secured well for soak overnight.

SDFN at 1800 hours.

Friday, November 17, 2023

Arrived on location at 0700 hrs. Acquired safe work permit from operations department and conducted tailgate safety meeting and completed JHA for approved procedures.

Rigged up injector head. Pressure tested 1502 iron and stack at 1,000 and 2,500 psi – successful test. Opened well at 0737 hours and ran in hole with 12-port rotary wash nozzle. Cleaned well to a depth 8,950 feet with nitrified 1% KCl while reciprocating rotary wash

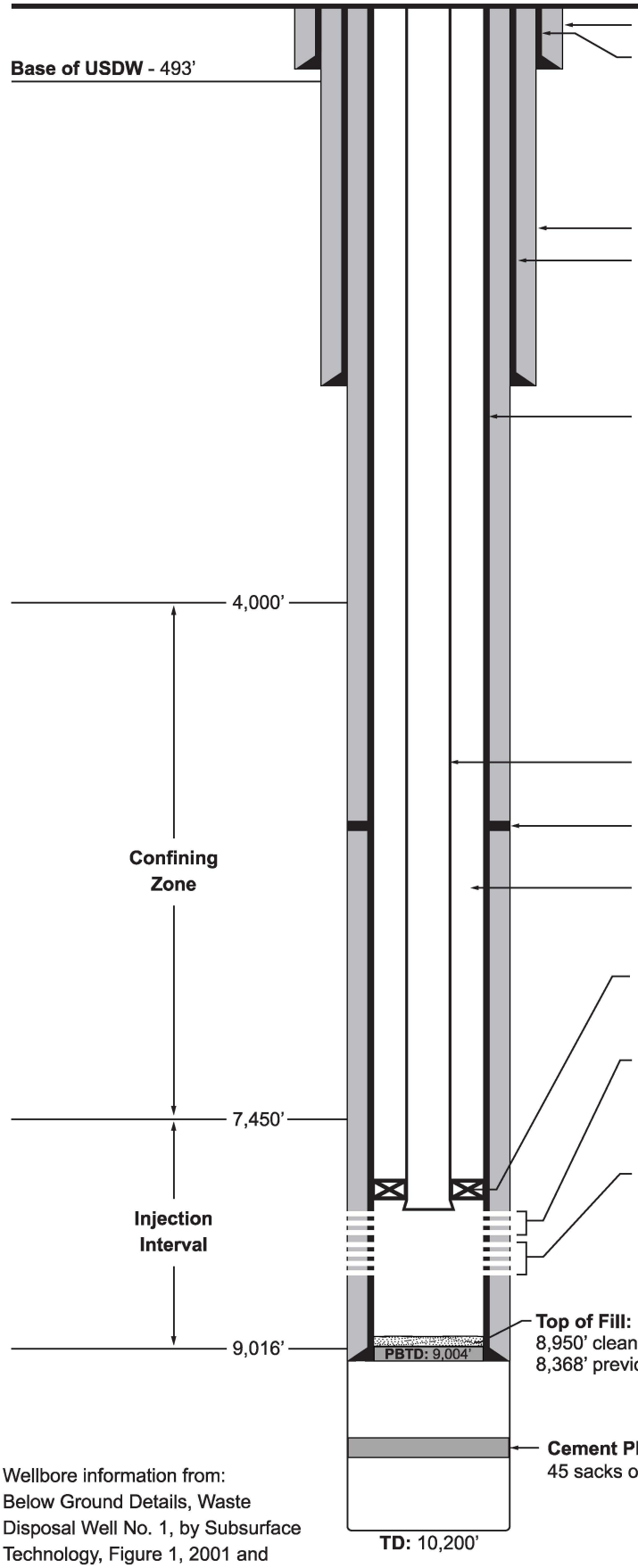
nozzle throughout length of perforated interval from 7,924 feet to 8,476 feet. Used approximately 195 bbls of nitrified 1% KCl fluid to flowback approximately 877 bbls of fluid. Spotted approximately 250 bbls of 7.5% HCl with additives across the perforated interval, displaced coil with 36 bbls of 1% KCl fluid. Returned coil tubing to surface at 1615 hours. Shut-in well at 1715 hours. Rigged down injector head, BOPs, flowback iron. Removed LOTO, secured well and returned control of well to HFSNR for overnight soak.

SDFN at 2100 hours and moved equipment off location.

FIGURES

OCD UIC Permit: UICI-008-1
Well API Number: 30-015-27592
Eddy County, New Mexico
Sec. 31, T17S-R28E
Lat. 32.78517° / Long. -104.21376° (NAD 83)

All depths referenced to Kelly Bushing (KB) elevation 12.5' above ground level.
Ground Level Elevation: +3,678' MSL



17-1/2" Hole

Surface Casing (0' - 390'): 13-3/8", 48 lb/ft, J-55, ST&C cemented to surface with 150 sacks of Class C with 3% calcium chloride, 375 sacks of Class C Litewate with 3% calcium chloride and 1/2 lb/sk flocele. Circulated 86 sacks to surface.

12-1/4" Hole

Intermediate Casing (0' - 2,555'): 9-5/8", 36 lb/ft, J-55, ST&C cemented with 800 sacks of Class C Lite with 1/2 lb/sk flocele and 2 lb/sk Gilsonite and 12% salt. Followed by 200 sacks of Class C with 2% calcium chloride. Circulated 133 sacks to surface.

Protection Casing (0' - 9,094'): 7", 26 lb/ft, P-110, LT&C (Surface - 5,845'). 7", 29 lb/ft, P-110, LT&C (5,845' - 7,031'). 7", 29 lb/ft, N-80, LT&C (7,031' - 9,094').

First Stage: 600 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, and 1 lb/sk salt mixed at 13.0 ppg. Opened DV tool at 5,498' and circulated 142 sacks to surface.

Second Stage: Lead Slurry: 220 sacks of Interfill "C" (35:65:6) mixed at 11.7 ppg. Tail Slurry: 550 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, 0.1% HR-7, and 1 lb/sk mixed at 13.0 ppg. Circulated 75 sacks to surface. Topped out with 20 sacks of premium plus 3% calcium chloride.

Injection Tubing (0' - 7,869'): 4-1/2", 11.6 lb/ft, L-80, LT&C

DV Tool (5,498')

Annulus Fluid: 8.7 lb/gal brine water mixed with UniChem Techni-Hib 370 corrosion inhibitor

Packer (7,869'): 7" x 2-7/8" Weatherford (Arrow), Model X-1 retrievable packer.

Zone 1 Perforations:
7,924' - 7,942', 7,974' - 8,030', 8,050' - 8,056', 8,066 - 8,080', 8,118' - 8,127', 8,132' - 8,140', 8,160' - 8,164', 8,170' - 8,188'.

Zone 2 Perforations:
8,220' - 8,254', 8,260' - 8,270', 8,280' - 8,302', 8,360' - 8,366', 8,370' - 8,378', 8,400' - 8,410', 8,419' - 8,423', 8,430' - 8,446', 8,460' - 8,464', 8,470' - 8,476'.

Top of Fill:
8,950' cleanout depth (11/16/23)
8,368' previous fill tag (05/11/23)

Cement Plug (9,624' - 9,734'):
45 sacks of Class H

Wellbore information from: Below Ground Details, Waste Disposal Well No. 1, by Subsurface Technology, Figure 1, 2001 and 2018 Workover.

NOT TO SCALE

HF Sinclair

Figure 1
WDW-1 Wellbore Schematic

2023 Deepwell Stimulation Report

Scale: NTS	Date: December 2023	
FIG_01_WDW-01_2023.pdf	By: KRS	Checked: WJ

Petrotek
5935 South Zang Street, Suite 200
Littleton, Colorado 80127 USA
303-290-9414
www.petrotek.com

ATTACHMENTS

Petrotek

Attachment 1
OCD Notification and Approval Correspondence

Petrotek

Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

WELL API NO.
30-015-27592

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
B-2071-28

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Mewbourne WDW-1

1. Type of Well: Oil Well ☐ Gas Well ☒ Other – UIC Injection Well

8. Well Number: WDW-1

2. Name of Operator
HF SINCLAIR NAVAJO REFINERY LLC

9. OGRID Number: 15694

3. Address of Operator
P.O. Box 159, Artesia, NM 88210

10. Pool name or Wildcat
PENN 96918

4. Well Location
Unit Letter O 660 feet from the South line and 2,310 feet from the EAST line
Section 31 Township 17S Range 28E NMPM County: Eddy

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3,678' GL

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☒	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: PRESSURE FALLOFF TEST / MIT ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

- Utilizing coiled tubing, HF Sinclair will conduct a cleanout and 2-stage acid stimulation of the injection interval in WDW-1 to increase injectivity into the permitted injection zone.
- Stage 1 will consist of cleaning out fill to maximum achievable depth followed by spotting 40 bbls of acid blend containing 15% HCl, 11.2% xylene, 75 gpt 50% citric acid, 40gpt AcidLink 701A, 12gpt PlexHib 166, 12gpt PlexBreak 145, and allowing well to soak overnight.
- Stage 2 will consist of continuing to clean to maximum achievable depth followed by spotting 40 bbls of acid blend containing 7.5% HCl, 5.6% xylene, 75 gpt 50% citric acid, 20gpt AcidLink 701A, 6gpt PlexHib 166, 6gpt PlexBreak 145 followed by displacement.
- Following completion of stimulation activities, stimulation fluids produced would be reinjected into the well.
- **NOTE:** Work is expected to be performed during November / December 2023.

Spud Date: Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE Env. Manager DATE 10-26-23

Type or print name Case Hinkins E-mail address: Case.Hinkins@HFsinclair.com PHONE: 575-746-5399

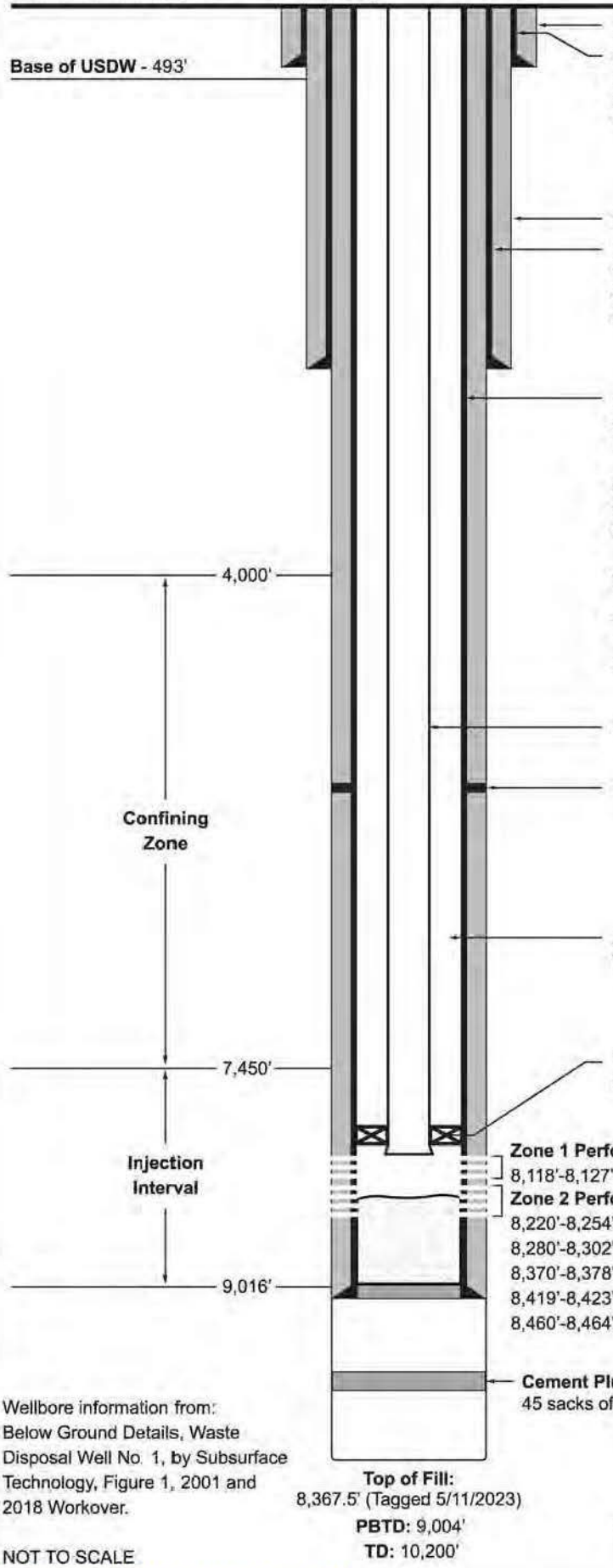
For State Use Only

APPROVED BY: TITLE DATE

Conditions of Approval (if any):

OCD UIC Permit: UICI-008-1
Well API Number: 30-015-27592
Eddy County, New Mexico
Sec. 31, T17S-R28E
Lat. 32.78517° / Long. -104.21376° (NAD 83)

All depths referenced to Kelly Bushing (KB) elevation 12.5' above ground level.
Ground Level Elevation: +3,678' MSL



17-1/2" Hole

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DV Tool (5,498')

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Zone 2 Perforations:
8,220'-8,254', 8,260'-8,270', 8,280'-8,302', 8,360'-8,366', 8,370'-8,378', 8,400'-8,410', 8,419'-8,423', 8,430'-8,446', 8,460'-8,464', 8,470'-8,476'.

Cement Plug (9,624' - 9,734'): 45 sacks of Class H

Wellbore information from: Below Ground Details, Waste Disposal Well No. 1, by Subsurface Technology, Figure 1, 2001 and 2018 Workover.

NOT TO SCALE

Top of Fill: 8,367.5' (Tagged 5/11/2023)
PBTD: 9,004'
TD: 10,200'

Previous Fill Tag: 8,375' (8/2021)

HOLLYFRONTIER

Draft Figure
Wellbore Schematic,
WDW-1

2023 Schematic Update

Scale: NTS	Date: May 2023	
WDW-01_HFNM_2023.pdf	By: WEK	Checked: WJ

Petrotek
5935 South Zang Street, Suite 200
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1625 N. French Dr., Hobbs, NM 88240
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Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 278978
	Action Type: [C-103] Sub. Workover (C-103R)

COMMENTS

Created By	Comment	Comment Date
cchavez	Well Stimulation Work	10/27/2023

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 278978
	Action Type: [C-103] Sub. Workover (C-103R)

CONDITIONS

Created By	Condition	Condition Date
cchavez	Conditions of Approval for final report are as follows: 1. Operator to provide details on the CT tag depth to highlight the presence of fill (if applicable) inside the wellbore. 2. Operator to provide details on the maximum depth reached during CT cleanout operations, together with a summary of the stimulation operation(s) performed, i.e., Stimulation fluid description, volumes spotted/squeezed, soak time etc.	10/27/2023

Ken Schlieper

Subject: FW: The Oil Conservation Division (OCD) has approved the application, Application ID: 278978

From: Paengpongsavanh, Nat <Nat.Paengpongsavanh@HFSinclair.com>
Sent: Friday, October 27, 2023 9:20 AM
To: carlj.chavez@emnrd.nm.gov
Cc: Holder, Mike <Michael.Holder@HFSinclair.com>; Ken Schlieper <kschlieper@petrotek.com>; Hinkins, Case <Case.Hinkins@HFSinclair.com>
Subject: RE: The Oil Conservation Division (OCD) has approved the application, Application ID: 278978

Carl,
Thank you for looking at it quickly for us.

Nat

Nat Paengpongsavanh
Environmental Specialist II
O 575.746.0681
C 802.734.2175

Nat.Paengpongsavanh@HFSinclair.com
www.HFSinclair.com
401 Main Street
Artesia, NM 88211

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Friday, October 27, 2023 9:16 AM
To: Paengpongsavanh, Nat <Nat.Paengpongsavanh@HFSinclair.com>
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 278978

To whom it may concern (c/o Nat Paengpongsavanh for HF Sinclair Navajo Refining LLC),

The OCD has approved the submitted *Subsequent Report - Remedial Workover* (C-103R), for API number (30-#) 30-015-27592,
with the following conditions:

- **Conditions of Approval for final report are as follows: 1. Operator to provide details on the CT tag depth to highlight the presence of fill (if applicable) inside the wellbore. 2. Operator to provide details on the maximum depth reached during CT cleanout operations, together with a summary**

of the stimulation operation(s) performed, i.e., Stimulation fluid description, volumes spotted/squeezed, soak time etc.

The signed C-103R can be found in the OCD Online: Imaging under the API number (30-#).

If you have any questions regarding this application, please contact me.

Thank you,
Carl Chavez
Environmental Engineer
505-660-7923
CarlJ.Chavez@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Attachment 2
Safety Data Sheet: Acid Blend

Petrotek

SAFETY DATA SHEET

Date Prepared: 06/06/2022

Acid Blend #2

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Acid Blend #2

MANUFACTURER

Thru Tubing Solutions
2033 North Main St
Newcastle, OK 73065
Emergency Contact: G. Funkhouser
Emergency Phone: (855) 286-0640
Customer Service: (405) 692-1900

24 HR. EMERGENCY TELEPHONE NUMBERS
Poison Control Center (Medical): (877) 800-5553
CHEMTREC (US Transportation): (800) 424-9300
INTERNATIONAL CHEMTREC: 703-527-3887

2. HAZARDS IDENTIFICATION

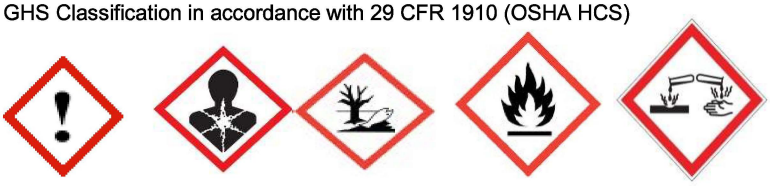
GHS CLASSIFICATIONS

HCS 20112 (29 CFR 1910.1200)

Flammable liquids, Category 2	H225: Highly flammable liquid and vapor
Acute toxicity, Category 4	H302: Harmful is swallowed
Acute toxicity, Category 3	H331: Toxic in contact with skin
Acute toxicity, Category 3	H331: Toxic if inhaled.
Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity – single exposure	H370: Causes damage to organs. (Central nervous system, optic nerve

GHS LABEL

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)



HAZARD STATEMENTS

H225: Highly flammable liquid and vapor
H302 + H312 Harmful is swallowed or in contact with skin.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H351: Suspected of causing cancer.
H360: May damage fertility or the unborn child.
H361: Suspected of damaging fertility or the unborn child.
H370: Causes damage to organs.
H373: Causes damage to organs through prolonged or repeated exposure.
.

PRECAUTIONARY STATEMENTS

Prevention:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilation/light/equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe dust/fumes/gas/mist/vapors/spray.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required.

Response:

P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P311: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P307 + P311: IF exposed: Call a POISON CENTER or doctor/ physician.
P332 + P313: If skin irritation occurs: Get medical advice/ attention.
P362 : Take off contaminated clothing and wash before reuse.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.

Disposal:

P501: Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification:

H401: Toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Hydrochloric Acid	5-30	7647-01-0
Xylene/Xylol Nitration Grade	0-20	1330-20-7
50% Citric Acid	0-10	77-92-9
AcidLink 701A	0-2.0	Upon Request
PlexHib 166	0-1.5	Upon Request
Plexaid 803	0-1.5	Upon Request
PlexBreak 145	0-1.5	Upon Request

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists. Should accident occur, flush eyes with generous amounts of water for at least 15 minutes. Administer prompt first aid measures.

SKIN: Remove clothing. Immediately flush skin with plenty of water for at least 15 minutes. Wash with soap and water. Obtain medical attention immediately if irritation occurs. Wash clothes before reuse.

INGESTION: Give plenty of water to dilute product. Do not induce vomiting. Keep victim quiet. If vomiting occurs, lower victims head below hips to prevent inhalation of vomited material. Seek medical help promptly.

INHALATION: Rescuers should put on appropriated protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention. To prevent aspiration, keep head below knees.

MOST IMPORTANT SYSMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

Symptoms will depend on the target organs.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

NOTES TO PHYSICIAN

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. FIRE FIGHTING MEASURES

Flash point **70 °F (21 °C)**
Flammability class: Flammable

Autoignition temperature **No data available**

Flammability / Explosive limit **No data available**

5.1 Extinguishing media
Suitable extinguishing media
- **Extinguishing media - small fires**
- **Multipurpose powders**
- **Carbon dioxide (CO_2)**
- **Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)**
- **Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)**

Unsuitable extinguishing media

- **Water may be ineffective.**

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

- Flammable liquid and vapor.

- May burn with a colourless flame
- The pressure in sealed containers can increase under the influence of heat.

- In case of heating:
- Highly flammable gas is released, which increases fire / explosion hazards.
- Flash back possible over considerable distance.

- In case of heating:
- Harmful or toxic vapors are released.
- Hazardous decomposition products formed under fire conditions.
- (following evaporation of water)
- High concentrations of toxic or harmful products may remain in the residual liquid once the fire has been extinguished.

Hazardous combustion products:

- On combustion or on thermal decomposition (pyrolysis), releases:
- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Nitrogen oxides (NOx)
- Oxides of phosphorus

5.3 Advice for firefighters
Special protective equipment for fire-fighters

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Specific fire fighting methods

- Stay upwind.

- Pay attention to flashback.
- Fight fire remotely due to the risk of explosion.

- Suppress (knock down) gases/vapors/mists with a water spray jet.
- Do not use a solid water stream as it may scatter and spread fire.
- Cool down the containers / equipment exposed to heat with a water spray. Ensure that there is NO direct contact between the water and the product.
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

- Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

Further information

- Evacuate personnel to safe areas.

- Intervention only by capable personnel who are trained and aware of the hazards of the product.
- Never approach containers which have been exposed to fire, without cooling them sufficiently.

- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Immediately evacuate personnel to safe areas.
- Stay upwind.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Avoid inhalation, ingestion and contact with skin and eyes.
- Wear chemical resistant personal protective equipment
- Wear suitable gloves.
- Wear suitable protective clothing.
- Respiratory protection

- Wear as appropriate:
- Face-shield
- Tightly fitting safety goggles
- In the case of dust or aerosol formation use respirator with an approved filter.
- In the case of vapor formation use a respirator with an approved filter.
- Eliminate all ignition sources if safe to do so.
- Ventilate the area.

- Stop leak if safe to do so.
- If spillage occurs on the public highway, indicate the danger and notify the authorities

(police, fire service).

- For further information refer to section 8 "Exposure controls / personal protection."

6.2 Environmental precautions

- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
    - Prevent further leakage or spillage if safe to do so.
    - Contain the spilled material by diking.
    - The product should not be allowed to enter drains, water courses or the soil.
    - Local authorities should be advised if significant spillages cannot be contained.
    - If the product contaminates rivers and lakes or drains inform respective authorities.
    - If the spill area is porous, the contaminated material must be collected for subsequent treatment or disposal.
- Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

- No sparking tools should be used.

- Stop leak if safe to do so.
    - Dam up with sand or inert earth (do not use combustible materials).

    - Control the vapors with:
    - Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)

    - Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).
    - Shovel or sweep up.
    - Keep in suitable, closed containers for disposal.
    - Never return spills in original containers for re-use.

- Wash nonrecoverable remainder with large amounts of water.
- Clean contaminated surface thoroughly.
- Recover the cleaning water for subsequent disposal.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.

- Dispose of as hazardous waste in compliance with local and national regulations.

Additional advice

- Possible need to alert the neighborhood.
- Mark the contaminated area with signs and prevent access to unauthorized personnel.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Ventilate the area.

- Following decontamination, wait several hours before allowing anyone to enter the area.
- Material can create slippery conditions.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
  13. DISPOSAL CONSIDERATIONS

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

- Do not use sparking tools.
- Ensure all equipment is electrically grounded before beginning transfer operations.

- Handle in accordance with good industrial hygiene and safety practice.
- Avoid contact with skin and eyes.

- Do not ingest.
- Do not breathe vapors or spray mist.

- Handle in accordance with good industrial hygiene and safety practice.

- The product must only be handled by specifically trained employees.

- Provide sufficient air exchange and/or exhaust in work rooms.
- Vapor extraction at source
- Do not use in areas without adequate ventilation.
- Do NOT handle in a confined space.
- Extracted air must not be allowed to return to the workplace.
- - The product should only be used in areas from which all naked lights and other sources of ignition have been
- excluded.
- - Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- - Take precautionary measures against static discharges.
- - Ground/bond container and receiving equipment.
- - To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.
- - Ensure all equipment is electrically grounded before beginning transfer operations.
- - Use only non-sparking tools.
- - Avoid high temperatures.
- - Wear personal protective equipment.
- - Wear suitable protective clothing.
- - Avoid inhalation, ingestion and contact with skin and eyes.
- - Do NOT handle without gloves.
- - Do NOT handle if hands have any cuts or wounds.
- - Avoid splashes.
- - Avoid formation of aerosol.

Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling these materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.

- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

- Exposed employees should have regular medical check-ups

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Take appropriate measures to prevent static discharges, which may include thorough electrical interconnecting, grounding of equipment, and/or conveyance under inert gas.
- Vapour space above stored liquid may be flammable/explosive unless blanketed with inert gas.
- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
- Keep in a contained area
- The floor of the storage area should be impermeable and designed to form a water-tight basin.
- Keep locked up or in an area accessible only to qualified or authorized persons.
- Keep containers tightly closed in a dry, cool and well-ventilated place.
- Keep away from open flames, hot surfaces and sources of ignition.
- Keep away from incompatible materials to be indicated by the manufacturer

- Keep away from: Hazardous reactions may occur on contact with certain chemicals. (Refer to the list of incompatible materials section 10: "Stability-Reactivity").

Packaging material

Suitable material
- Electrical conducting materials

Unsuitable material
- Electrical insulating materials

7.3 Specific end use(s)
- no data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Methanol	TWA	200 ppm 260 mg/m3	National Institute for Occupational Safety and Health
	Potential for dermal absorption		
Methanol	ST	250 ppm 325 mg/m3	National Institute for Occupational Safety and Health
	Potential for dermal absorption		

Methanol	**STEL**	**250 ppm**	**American Conference of Governmental Industrial Hygienists**
	Danger of cutaneous absorption		
Methanol	**TWA**	**200 ppm 260 mg/m3**	**Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants**
	The value in mg/m3 is approximate.		
Ethylene Glycol Monobutyl Ether	**TWA**	**5 ppm 24 mg/m3**	**National Institute for Occupational Safety and Health**
	Potential for dermal absorption		
Ethylene Glycol Monobutyl Ether	**TWA**	**20 ppm**	**American Conference of Governmental Industrial**
Ethylene Glycol Monobutyl Ether	**TWA**	**50 ppm 240 mg/m3**	**Occupational Safety and Health Administration**

Danger of cutaneous absorption
Skin designation

NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

Components	CAS-No.	Concentration
Methanol	67-56-1	6000 parts per million
Ethylene Glycol Monobutyl Ether	111-76-2	700 parts per million

Components	Value type	Value	Basis
Methanol	**BEI**	**15 mg/l Methanol Urine End of shift (As soon as possible after exposure ceases)**	**American Conference of Governmental Industrial Hygienists**
Ethylene Glycol Monobutyl Ether	**BEI**	**200 mg/g Creatinine Butoxyacetic acid (BAA) Urine End of shift (As soon as possible after exposure ceases)**	**American Conference of Governmental Industrial Hygienists**

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Xylenes (o-, m-, p- isomers) 1330-20-7	100 ppm TWA; 435 mg/m3 TWA	150 ppm STEL 100 ppm TWA	
Ethylbenzene 100-41-4	100 ppm TWA; 435 mg/m3 TWA	20 ppm TWA	NIOSH: 100 ppm TWA; 435 mg/m3 TWA 125 ppm STEL; 545 mg/m3 STEL

Biological Exposure Indices

With hydrolyses

8.2 Exposure controls

Control measures

Engineering measures

- Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures

- Effective exhaust ventilation system
- Ensure adequate ventilation.

- Extract at emission point.
- Ensure that extracted air cannot be returned to the workplace through the ventilation system.

- Use mechanical handling to reduce human contact with materials.
- Use closed processing systems or containment technologies.
- Avoid splashes.
- Avoid formation of aerosol.

Individual protection measures

Respiratory protection

- Recommended Filter type: Organic gas and low boiling vapor type
- This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation.
- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.
- If mist is formed:
- If vapor is released:
- Wear a positive-pressure supplied-air respirator with full facepiece.

Hand protection

- Where there is a risk of contact with hands, use appropriate gloves
- Gloves must be inspected prior to use.
- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Suitable material

- butyl-rubber

Eye protection

- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.
- Eye contact should be prevented through the use of:

- Tightly fitting safety goggles
- Face-shield

Skin and body protection

- Workers should wear antistatic footwear.
- Full protective suit
- Footwear protecting against chemicals
  - Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling these materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

- Exposed employees should have regular medical check-ups

Protective measures

- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

- Emergency equipment must be selected in accordance with current local regulations and in cooperation with the supplier of the protective equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
ODOR: Acrid
ODOR THRESHOLD: Not available
COLOR: Off-white, opaque
pH: <2
PERCENT VOLATILE:
FLASH POINT: 70° F (21°C)
LEL: 1.00
AUTOIGNITION TEMPERATURE: Unknown
VAPOR PRESSURE: Not Available
VAPOR DENSITY: Not Available
MELTING POINT: Not available
FREEZING POINT: Not Available
POUR POINT: Not Available
THERMAL DECOMPOSITION: Not Available
SOLUBILITY IN WATER: Not Available
EVAPORATION RATE: Not Available
DENSITY: ND
SPECIFIC GRAVITY: ND
VISCOSITY #1:
(VOC):

10. STABILITY AND REACTIVITY

10.1 Reactivity
- Stable at normal ambient temperature and pressure.
10.2 Chemical stability
- Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
- Explosion possible with gas/vapor and air mixtures above flash point. Vapors may form explosive mixture with air.
10.4 Conditions to avoid
- Prevent the build-up of electrostatic charge.
- Avoid high temperatures.
- Keep away from open flames, hot surfaces and sources of ignition.
10.5 Incompatible materials
- Strong oxidizing agents

10.6 Hazardous decomposition products
- On combustion or on thermal decomposition (pyrolysis), releases:
- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Nitrogen oxides (NOx)

- Oxides of phosphorus

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
Acute oral toxicity This product is classified as acute toxicity category 4
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Acute inhalation toxicity
Methanol LC50 - 4 h: > 115.9 mg/l - Rat, female
Unpublished reports
LC50 - 4 h (vapor) : 130.7 mg/l - Rat, male
Unpublished reports
Humans
Target Organs: Central nervous system, optic nerve
Symptoms: Inhalation may provoke the following symptoms, Dizziness, Nausea, acidosis, Blurred vision, Impairment of vision, Symptoms may be delayed.

This product is classified as acute toxicity category 3
Published data
Alkyl Phenol Ethoxylated No data available
Ethylene Glycol Monobutyl Ether LC50 - 4 h (vapor) : 2.2 mg/l - Rat , male and female
This product is classified as acute toxicity category 3
Acute dermal toxicity This product is classified as acute toxicity category 4
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Acute toxicity (other routes of administration)
Not applicable
Skin corrosion/irritation Irritating to skin.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Serious eye damage/eye irritation Risk of serious damage to eyes.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Respiratory or skin sensitization Does not cause skin sensitization.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Mutagenicity
Genotoxicity in vitro Product is not considered to be genotoxic
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Genotoxicity in vivo Product is not considered to be genotoxic
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Carcinogenicity The product is not considered to be carcinogenic.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA
Toxicity for reproduction and development
Toxicity to reproduction / fertility the product is not considered to affect fertility.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Developmental Toxicity/Teratogenicity The product is not considered to be toxic for development.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
STOT
STOT-single exposure Routes of exposure: Inhalation, Skin contact, inhalation (vapor)
Target Organs: Central nervous system, optic nerve
The substance or mixture is classified as specific target organ toxicant, single exposure, category 1 according to GHS criteria.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
STOT-repeated exposure the substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
The product itself has not been tested.
Experience with human exposure
Experience with human exposure: Inhalation
Methanol Target Organs: Central nervous system
Target Organs: optic nerve
Symptoms: Inhalation may provoke the following symptoms:

Dizziness
Nausea
acidosis
Blurred vision
Impairment of vision
Published data
Experience with human exposure: Ingestion
Methanol Target Organs: Central nervous system
Target Organs: optic nerve
Symptoms: Ingestion may provoke the following symptoms:
Dizziness
Nausea
acidosis
Abdominal pain
Vomiting
Central nervous system depression
Headache
Breathing difficulties
Impairment of vision
Blurred vision
Coma
Death
May cause respiratory arrest.
Poison may be fatal or cause blindness if swallowed.
Aspiration toxicity Not classified for aspiration toxicity according to GHS criteria
According to the available data on the components, According to the classification criteria for mixtures., internal evaluation

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12. ECOLOGICAL INFORMATION

12.1 Toxicity
Aquatic Compartment
Acute toxicity to fish the product itself has not been tested. Global ecotoxicity assessment available below.
Acute toxicity to daphnia and other aquatic invertebrates
The product itself has not been tested. Global ecotoxicity assessment available below.
Toxicity to aquatic plants the product itself has not been tested. Global ecotoxicity assessment available below.
Toxicity to microorganisms the product itself has not been tested.
Chronic toxicity to fish the product itself has not been tested. Global ecotoxicity assessment available below.
Chronic toxicity to daphnia and other aquatic invertebrates
The product itself has not been tested. Global ecotoxicity assessment available below.
Sediment compartment
Toxicity to benthic organisms the product itself has not been tested.
Terrestrial Compartment
Toxicity to soil dwelling organisms the product itself has not been tested.
Toxicity to terrestrial plants The product itself has not been tested.
Toxicity to above ground organisms The product itself has not been tested.
M-Factor
Tall Oil Diethanolamide Acute aquatic toxicity = 1
(according to the Globally Harmonized System (GHS))
12.2 Persistence and degradability
Abiotic degradation
Stability in water Conclusion is not possible for a mixture as a whole.
Photodegradation Conclusion is not possible for a mixture as a whole.
Physical- and photo-chemical elimination
Physico-chemical removability Conclusion is not possible for a mixture as a whole.
Biodegradation
Biodegradability As (bio)degradability is not relevant for mixtures, all the components of the mixture were assessed individually (rapid degradability assessment available below).
Degradability assessment Conclusion is not possible due to incomplete or heterogeneous data on the

components
12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water
Methanol Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.
Ethylene Glycol Monobutyl Ether Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Bioconcentration factor (BCF) None of the components are considered to be potentially bioaccumulable
12.4 Mobility in soil
Adsorption potential (Koc) Conclusion is not possible for a mixture as a whole.
Known distribution to environmental compartments
Methanol Ultimate destination of the product: Air
Water
12.5 Results of PBT and vPvB assessment This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).
12.6 Other adverse effects
Ecotoxicity assessment
Short-term (acute) aquatic hazard Toxic to aquatic life.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Long-term (chronic) aquatic hazard Toxic to aquatic life with long lasting effects.
According to the available data on the components.
According to the classification criteria for mixtures.

Unpublished reports and/or published data.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product Disposal
Prohibition
- Do not discharge directly into the environment.
- Do not dispose of with domestic refuse.
- Dispose of as hazardous waste in compliance with local and national regulations.
- Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Waste Code
- Environmental Protection Agency
- Hazardous Waste – YES
- RCRA Hazardous Waste (40 CFR 302)
- D001 - Ignitable waste – (I)

Advice on cleaning and disposal of packaging
Prohibition
- Do NOT dispose of untreated packaging with industrial waste.
- Do not dispose of with domestic refuse.
- Empty remaining contents.
- Clean using steam.
- Monitor the residual vapors.
- Dispose of rinse water in accordance with local and national regulations.
- Containers that cannot be cleaned must be treated as waste.
- Dispose of contents/ container to an approved waste disposal plant.
- Dispose of in accordance with local regulations.
- In accordance with IMDG regulations containers or tankers that have not been cleaned or deodorized and that previously contained a hazardous product, must either be labeled or have hazard signs.
- Where possible recycling is preferred to disposal or incineration.
- The recycled material must be completely dry and free of pollutants

14. TRANSPORT INFORMATION

UN CODE: UN1307	**UN CODE: UN1789**	**UN CODE: 1992**	**UN CODE: 1993**
DOT NAME: Xylene	**DOT NAME: Hydrochloric acid**	**DOT NAME: Methanol**	**DOT NAME: Isopropyl alcohol**
HAZARD CLASS: 3			

PACKAGE GROUP: II

UN CODE: N 3082

DOT NAME: Ethylene glycol

15. REGULATORY INFORMATION

15.1 Notification status
Inventory Information Status
United States TSCA Inventory - All substances listed as active on the
TSCA inventory
Canadian Domestic Substances List (DSL) - Listed on Inventory
Australia Inventory of Chemical Substances (AICS) - Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances - Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI) - Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC) - Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS) - Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI) - Listed on Inventory
New Zealand. Inventory of Chemical Substances - All components are listed on the NZIOC
inventory. The HSNO status of the
product has not been assessed.
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical
(REACH)
- When purchased from a Solvay legal
entity based in the EEA ("European
Economic Area"), this product is
compliant with the registration provisionsof the REACH Regulation (EC) No.
1907/2006 as all its components are
either excluded, exempt, and/or
registered. When purchased from a legal
entity outside of the EEA, please contact
your local representative for additional
information.

15.2 Federal Regulations
US. EPA EPCRA SARA Title III
SARA Hazard Designation Sections 311/312 (40 CFR 370)
Flammable (gases, aerosols, liquids, or solids) Yes
Acute toxicity (any route of exposure) Yes
Skin corrosion or irritation Yes
Serious eye damage or eye irritation Yes
Specific target organ toxicity (single or repeated exposure) Yes
The categories not mentioned are not relevant for the product.
Section 313 Toxic Chemicals (40 CFR 372.65)
The following components are subject to reporting levels established by SARA Title III, Section 313:
Components CAS-No. Concentration
Methanol 67-56-1 20- 25%
Ethylene Glycol Monobutyl Ether 111-76-2 5- 10%
Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
This material does not contain any components with a section 302 EHS TPQ.
Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
Components CAS-No. Reportable quantity
Ethylene Oxide 75-21-8 10 lb
Calculated RQ exceeds reasonably attainable upper limit.
Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
Components CAS-No. Reportable quantity
Ethylene Oxide 75-21-8 10 lb
Calculated RQ exceeds reasonably attainable upper limit.
US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)
Components CAS-No. Reportable quantity
Methanol 67-56-1 5000 lb
Calculated RQ exceeds reasonably attainable upper limit.
15.3 State Regulations
US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product can expose you to chemicals including 1,4-Dioxane (CAS # 123-91-1), Acetaldehyde (CAS # 75-07-0), Ethylene Oxide (CAS # 75-21-8) , which is/are known to the State of California to cause cancer, and
This product can expose you to chemicals including Methanol (CAS # 67-56-1), Ethylene Oxide (CAS # 75-21-8) , which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

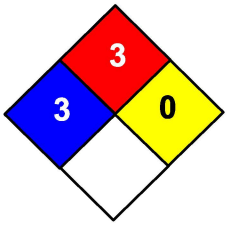
16. OTHER INFORMATION

REASON FOR ISSUE: Original Version
APPROVED BY: Eric Baldridge
TITLE: QHS&E Director
PREPARED BY: Eric Baldridge
DATE PREPARED: 06/07/2022
DATE REVISED:
REV:

HMIS RATING

HEALTH	3
FLAMMABILITY	3
Reactivity	0

NFPA CODES



MANUFACTURER DISCLAIMER: The information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since the information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the result of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Attachment 3
CUDD Job Detail Report:
WDW-1 Coiled Tubing

Petrotek

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/16/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
06:45								Arrive on Location
07:00								Safety meeting
07:20								Function Test BOP's - GOOD TEST
07:30								Cut Pipe 30'
07:41								Make up BHA
07:42								TEST WASH NOZZLE .75 BPM/ 800PSI 1.0 BPM/ 1400 PSI
07:54	-49.0			136	32	-7155		Depth set to 0 FT
07:54	-49.0			143	35	-7258		Weight set to 0 LBS
08:04	-49.0			151	35	-6988		Start pressure testing
08:05	-49.0			150	36	-7040		Start low pressure test - 1K
08:05	-49.0			150	36	-6962		Start high pressure test - 2500 PSI
08:07	-49.0			148	35	-6898		Leak - FLOWBACK IRON
08:14	-49.0			157	37	-7040		Start high pressure test - 2500 PSI
08:16	-49.0			158	39	-7142		Pressure test passed
08:17	-49.0			158	38	-7117		Bleed off pressure - BLEED TO 800 PSI
08:17	-49.0			155	35	-6924		End pressure testing
08:18	-49.0			159	39	-7014		Open well
08:25	-49.0			164	39	-7232		Run in hole (RIH)
08:27	-49.0			166	41	-6808		Fluid rate change - ONLINE .4 BPM
08:29	-49.0			166	41	-6847		N2 rate change - ONLINE 300 SCF

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/16/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
08:35	-49.4			164	42	-7155		Weight check - HYD 600/ PU WEIGHT 8,500 TEN/ 800 TRAC/ 1000
09:13	0.1			891	75	-835		Weight check - HYD 1,000/ PU WEIGHT 14,200 TEN/1000 TRAC/ 1000
09:18	0.2			931	969	-1516		PU ABOVE PACKER (EOT)
09:19	0.2			937	980	-2813		Fluid rate change - INCREASE TO .75 BPM
09:20	0.2			936	985	-2620		N2 rate change - INCREASE TO 500 SCF
10:04	2530.8			1587	1027	-488		WGT CHECK 16K HYD 1K
10:11	3153.3			1574	1023	822		WGT CHECK 16K HYD 1K
10:36	4960.1			1771	1021	8722		TAG P/U 50FT WGT 16K HYD 1K
10:48	5763.6			1977	1023	5934		WGT CHECK 16K HYD 1K
10:56	6415.1			2087	1016	6782		WGT CHECK 16K HYD 1K
11:18	7889.0			2346	1017	12820		@DEPTH WAIT FOR SWEEP
11:54	8624.1			3126	1082	10443		PU TO BOTTOM PERF
12:06	8736.2			3380	1125	9994		WAIT FOR SWEEP
12:13	8833.1			3427	1137	10263		RR 2.6
12:47	8899.7			2524	1318	14875		N2 rate change - DECREASE TO 350 SCF
13:20	8369.3			2612	1060	15941		ABOVE PERFS WAIT FOR WATER TO CLEAN UP
14:00	8392.6			2929	1036	14862		N2 OFFLINE
14:17	7967.4			3022	990	17174		PUMPING ACID
14:23	7921.6			2994	1002	8221		RIH DOWN TO PERFS
14:51	7921.6			3028	931	8683		START DISPLACING ACID

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/16/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
14:55	7921.6			3027	968	8825		ACID AT BIT, PU TO PACKER
15:19	7921.6			1840	960	7990		RBIH TO BOTTOM PERF
15:30	8269.1			7957	848	7360		TAGGED P/U RBIH
15:36	8430.1			7368	711	9852		TAGGED, P/U RBIH
15:52	8480.3			8095	540	14374		SODA ASH GONE, START FRESH WATER
16:00	8354.9			7744	928	16686		@DEPTH P/U
16:01	8336.4			7817	929	16840		POOH WGT 16K HYD 1K
16:22	7960.0			7876	997	9531		DROP RATE 1BBL
17:16	7926.4			5388	1123	14078		PUMP OFFLINE
17:27	7295.3			2711	1115	16596		WELL CLOSED BLEED DOWN
17:29	7098.5			2738	1111	16134		COME OFF WELL
17:33	6627.6			2737	1107	14811		HEAD IN CRADLE
18:36	-34.7			107	79	2723		CLOSE BLINDS ADN NUMBER 7 ON BOP
18:36	-34.7			110	79	2787		SHUTDOWN FOR TODAY

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/17/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
06:45								Arrive on Location
07:00								Safety meeting
07:16								TEST NOZZLE
07:22								Flange to wellhead
07:26								Depth set to 0 FT
07:30								Break Circulation
07:31								Start pressure testing
07:31								Start low pressure test - 1K
07:31								Start high pressure test - 2500 PSI
07:33								Pressure test passed
07:34								Bleed off pressure - BLEED OFF TO 1K
07:36								Weight set to 0 LBS
07:37								Open well
07:37								Run in hole (RIH)
07:40								Fluid rate change - ONLINE .2 BPM
07:47								N2 rate change - ONLINE 400 SCF
08:13	-34.3			85	62	2312		RR 1.6 BPM
08:38	9.1			1153	1114	-9750		Weight check - HYD 600/ PU WEIGHT 8,500 TEN/ 800 TRAC/ 1000
09:16	2969.8			1984	993	3263		N2 rate change - 300
09:17	3011.2			1981	988	3044		Weight check - 900HYD 16K

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/17/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7" 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
09:20	3307.4			1987	966	4033		Send 5 bbl sweep
09:40	4969.8			2225	1016	9210		Weight check - 1000HYD 18K
10:04	6896.9			2454	956	9762		Weight check - 1000HYD 18K
10:14	7763.3			2627	627	11522		REACHED TD
10:15	7848.6			2607	635	10931		CIRCULATE 2 BOTTOMS UP
10:30	8272.0			2382	643	11419		RR 3.3 BPM
10:50	8222.5			2629	622	12190		N2 rate change - PUMP OFFLINE
10:52	8286.9			2584	621	11702		Fluid rate change - PUMP OFFLINE
10:59	8513.7			2467	601	13770		PU TO PACKER
11:01	8563.5			2455	607	13526		Fluid rate change - INCREASE TO 1 BPM
11:30	8939.9			2466	586	16339		SITTING ABOVE TO PACKER, FLOWING N2 OUT OF THE WELL
11:51	8623.0			2709	699	16981		Fluid rate change - INCREASE TO .75 BPM
12:22	8014.7			2809	711	17251		RR 4.1
12:29	7879.0			2646	796	17559		Fluid rate change - PUMP OFFLINE
12:30	7868.4			2651	794	17945		MANIFOLD SHUT
12:30	7864.7			2654	790	18009		Fluid rate change - PUMP ONLINE 1.5 BPM
12:34	7860.0			2639	870	16724		Run in hole (RIH) - TO BOTTOM
12:38	7860.0			2600	840	16776		Fluid rate change - INCREASE 2 BPM
12:42	7860.0			2479	692	17033		PUMPING ACID
12:56	7860.0			2397	425	16943		AT BOTTOM PERF, WAIT FOR ACID TO HIT BIT

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/17/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
13:00	7860.0			2410	411	17033		MANIFOLD SHUT-IN
13:01	7860.0			2424	410	17148		ACID AT BIT, PU START WASHING PERFS
14:43	8423.7			7440	1029	14888		ABOVE PERFS SIT AND WAIT FOR ACID TO BE ALL GONE
14:47	8479.5			2488	1047	16853		SWAP TO WATER
15:50	7909.9			7367	1128	15954		Fluid rate change - PUMP OFFLINE
16:13	7880.7			7067	1105	17148		Pull out of hole (POOH)
17:01	2589.6			947	1031	9364		HOLE IN TUBING @3,255
17:15	1553.6			567	979	6012		HOLE @ 1,566
17:42	-0.2			101	91	6268		Shut in well
17:52	-0.3			95	87	-238189		Unflange from wellhead
18:04	-43.6			83	78	-238176		Cradle injector head
18:04	-44.8			80	72	-238176		Rig down

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/18/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					

Cust. Representative

Attachment 4
CUDD Post Job Report

Petrotek

POST-JOB REPORT

Petrotek Engineering Corportation

HOLLY FRONTIER - MEWBOURNE WDW-1

Cleanout/Stimulation
1.750'' Coiled Tubing

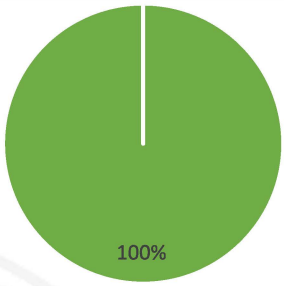
Thursday, November 16, 2023 thru Friday, November 17, 2023

Coil Tubing Supervisor(s)
Wesley Jackson
Justin Cook

Report Prepared By
Junior Mendez

Job Duration - Total Time, NPT and Net Productive Time

Job Start	Thursday, November 16, 2023	6:30
Job Finish	Friday, November 17, 2023	18:04
Job Duration	35.57 hours	
Standby Time	0.00 hours	
Downtime	0.00 hours	
Non Productive Time	0.00 hours	
Net Productive Time	35.57 hours	
RIH to Bump-Up	33.25 hours	



Rig Up

Rig-up Begin	Thursday, November 16, 2023	7:00
Start Pressure Test	Thursday, November 16, 2023	9:10
Finish Pressure Test	Thursday, November 16, 2023	9:22
Start Standby		
End Standby		
Start RIH	Thursday, November 16, 2023	8:25
Pressure Testing	0.20 hours	
Standby to RIH	0.00 hours	
Time for Rig-up	1.2 hours	

Not included in total rig-up time.

Well Data (From Field Job Detail Report)

Well Name	HOLLY FRONTIER - MEWBOURNE WDW-1		
Depth (TD)	10200 ft	Multi-Well Pad	NO

Casing Data

#1	7 "	26 #	from	0	to	10200	ft
#2	4.5 "	11.6 #	from	0	to	7869	ft
#3							

Downtime, NPT and list of Events

Any HSE incidents pertaining to a job will be summarized in this section as an Event, but details will be provided in a separate report

Event Description	Start : Date & Time		End : Date & Time	Duration

Weather Downtime	0.0	**NPT**	0.0
Standby Time	0.0	**General Downtime**	0.0

Pressure Stats

Wellhead			**Circulating**		
Min	45.6	psi	Min	76.0	psi
Max	2849.5	psi	Max	8154.7	psi
Average	898.5	psi	Average	3290.3	psi

Force Stats

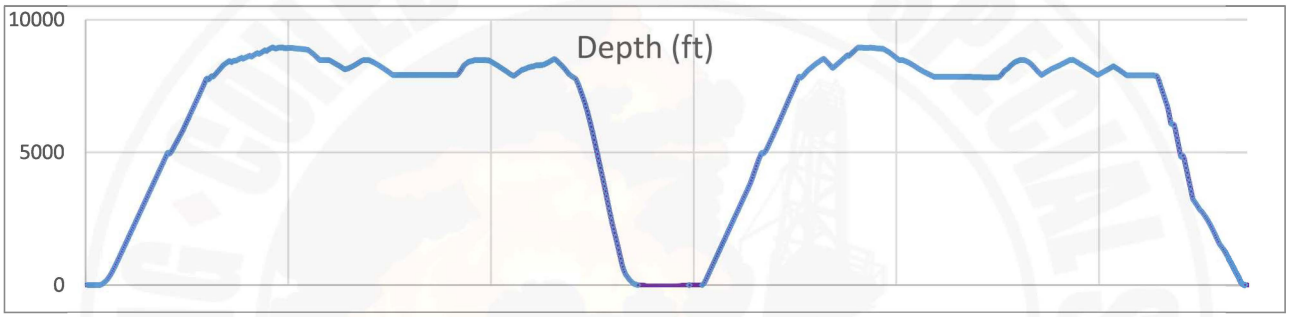
Max Recorded Snub Force	-14233	lbf	Max Recorded Pull Force	20154	lbf

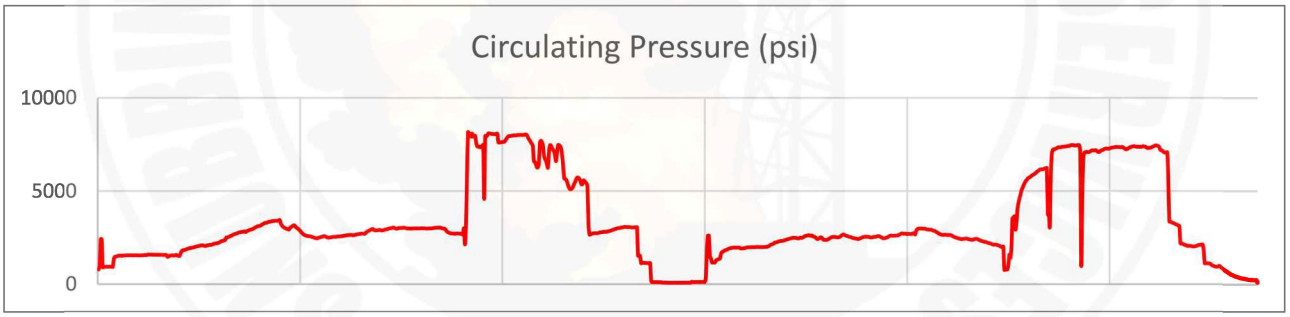
Speed Stats

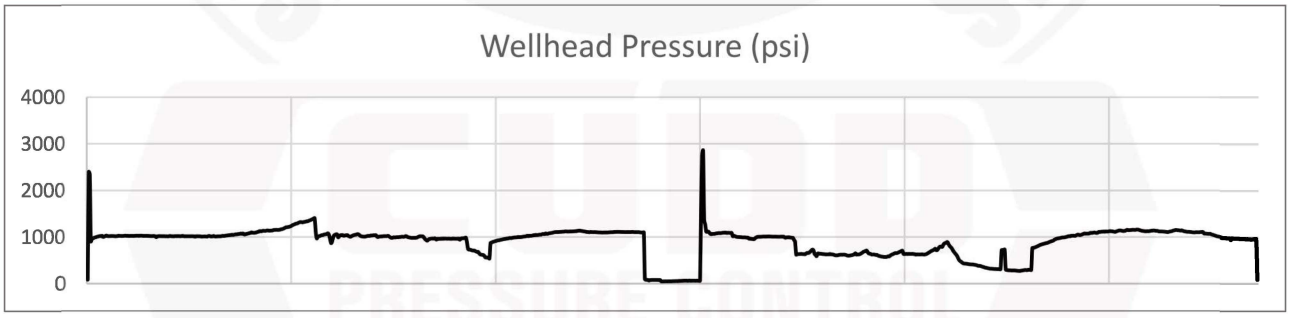
	Maximum		**Average**	
Instantaneous (Total Record)	209.45	ft/min	39.61	ft/min
Instantaneous (RIH to Bump-Up)	209.45	ft/min	39.74	ft/min
Lateral (POOH)	0.00	ft/min		ft/min
Lateral (RIH)	0.00	ft/min		ft/min
Vertical (POOH)	194.72	ft/min	51.17	ft/min
Vertical (RIH)	110.48	ft/min	46.57	ft/min

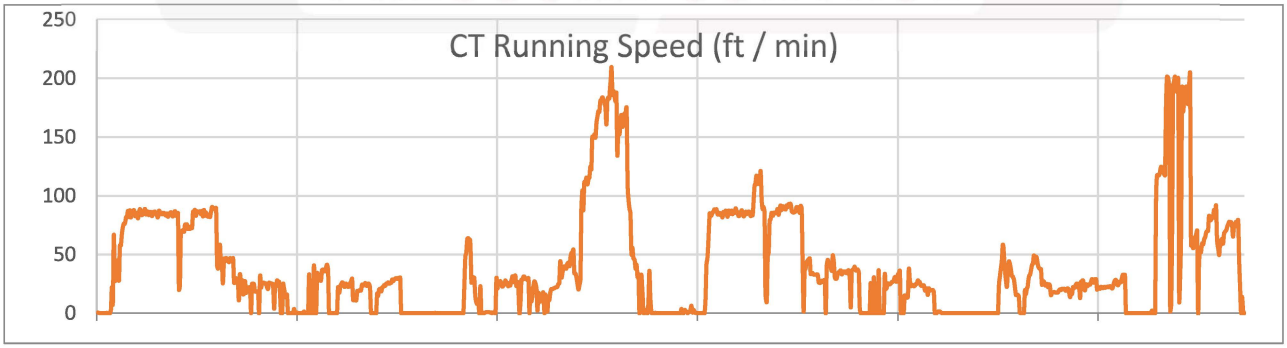
Note : "Instantaneous" speed is taken directly from the Speed channel of the job record where samples are taken at one second interals. All other speed values are calculated and averaged using the recorded distance and time channels so they will tend to have maximums lower than the instantaneous values.

Field Data Plots (Job Start - Finish)

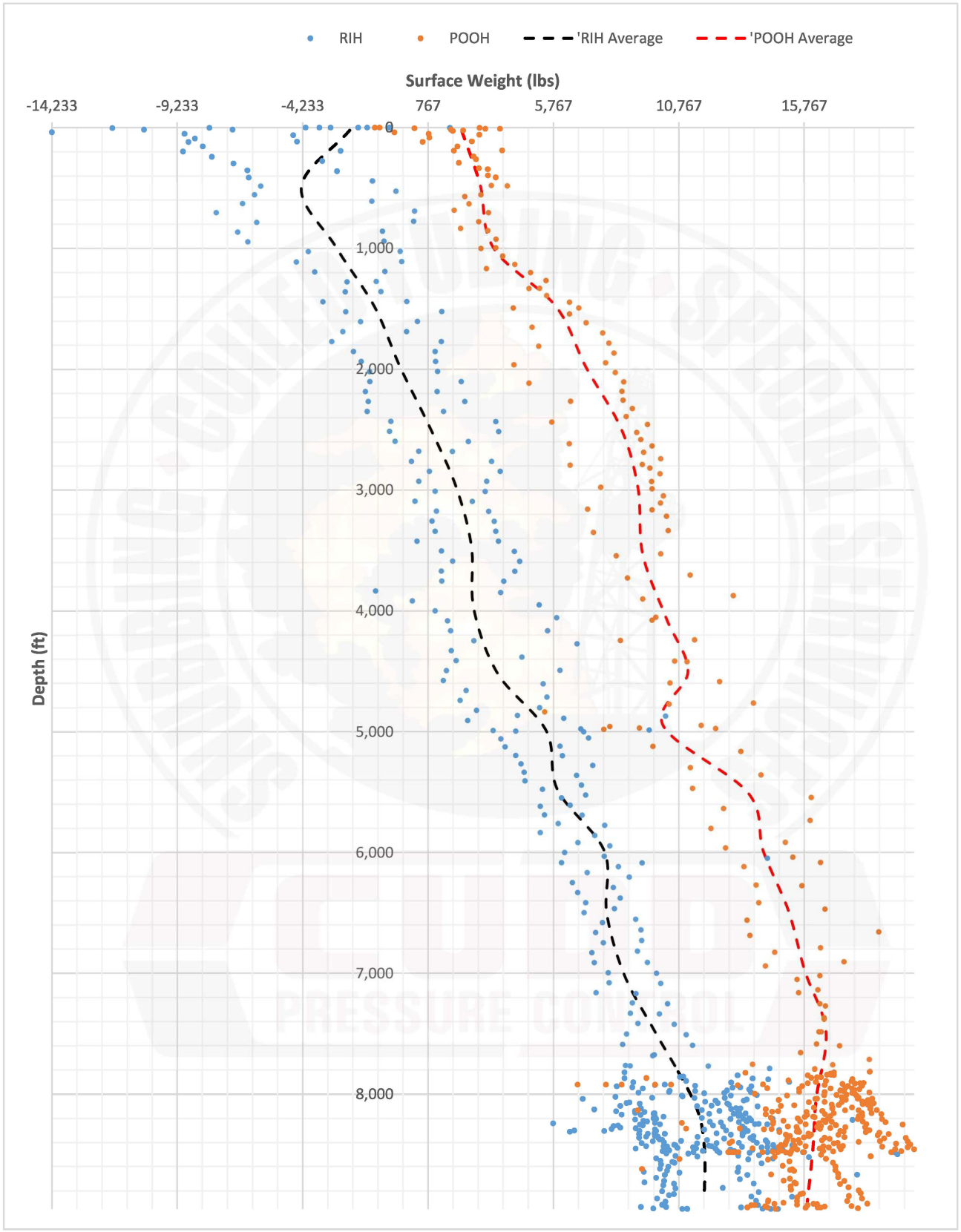








Surface Weight vs. Depth

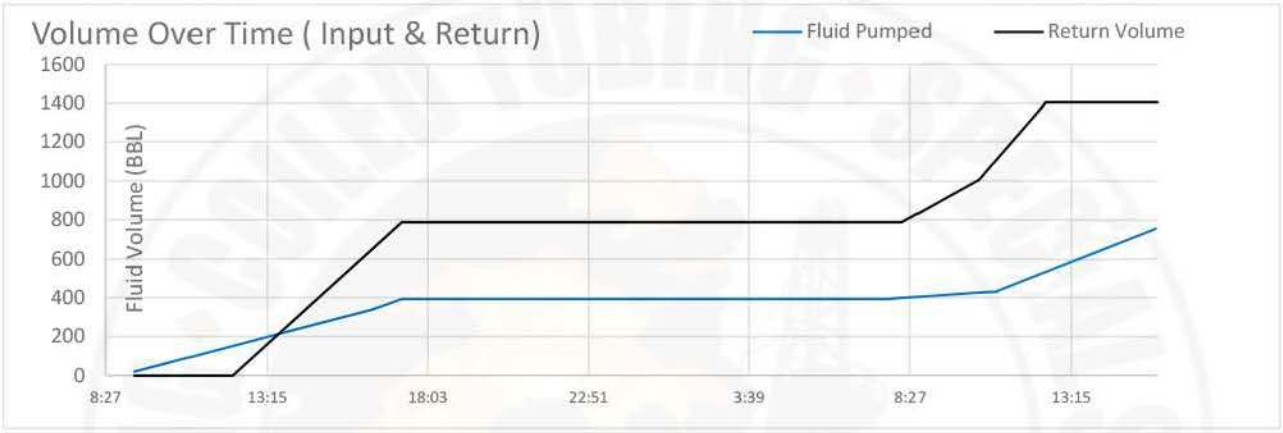


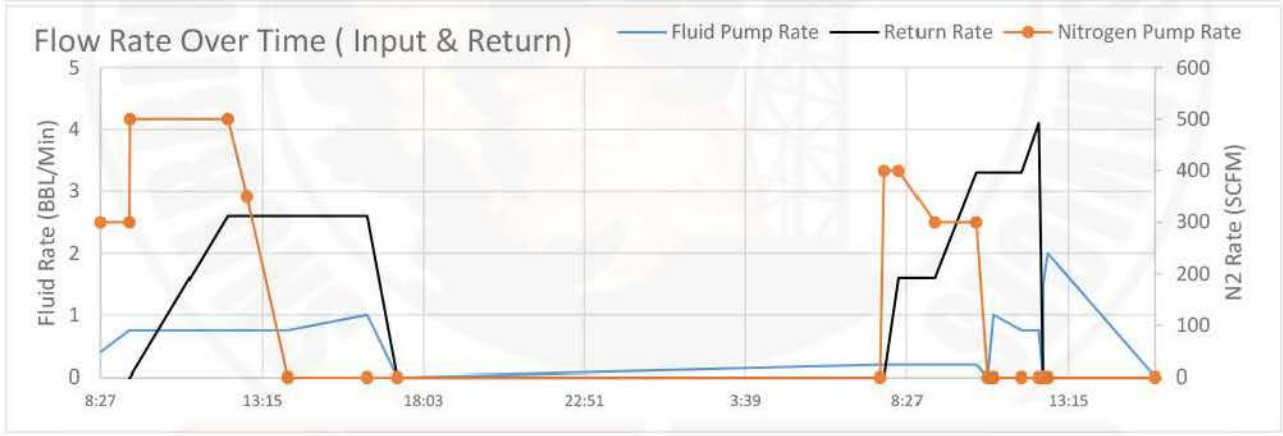
Fluid / Nitrogen Pump Stats & Flowback Return

NOTE : All Pump Volumes & Rates Are Approximated
Values come from Job Detail Report records. Recorded N2 rates and volumes do not include vent loss, cool down, transfer or idle periods.

All Approximated Totals Are Rounded
Nitrogen (Up to nearest multiple of 50,000 SCF)
Fluid (Up to nearest multiple of 50 BBL)

Total Fluid Pumped	750 BBL	**Min Fluid Rate**	0.00 BBL / Min
Total N2 Pumped	250000 SCF	**Min N2 Rate**	0.00 SCFM
Total Return Volume	1450 BBL	**Min Return Rate**	0.00 BBL
Average Fluid Rate	0.37 BBL / Min	**Max Fluid Rate**	2.00 BBL / Min
Average N2 Rate	89.64 SCFM	**Max N2 Rate**	500.00 SCFM
Average Return Rate	1.00 BBL / Min	**Max Return Rate**	4.10 BBL / Min





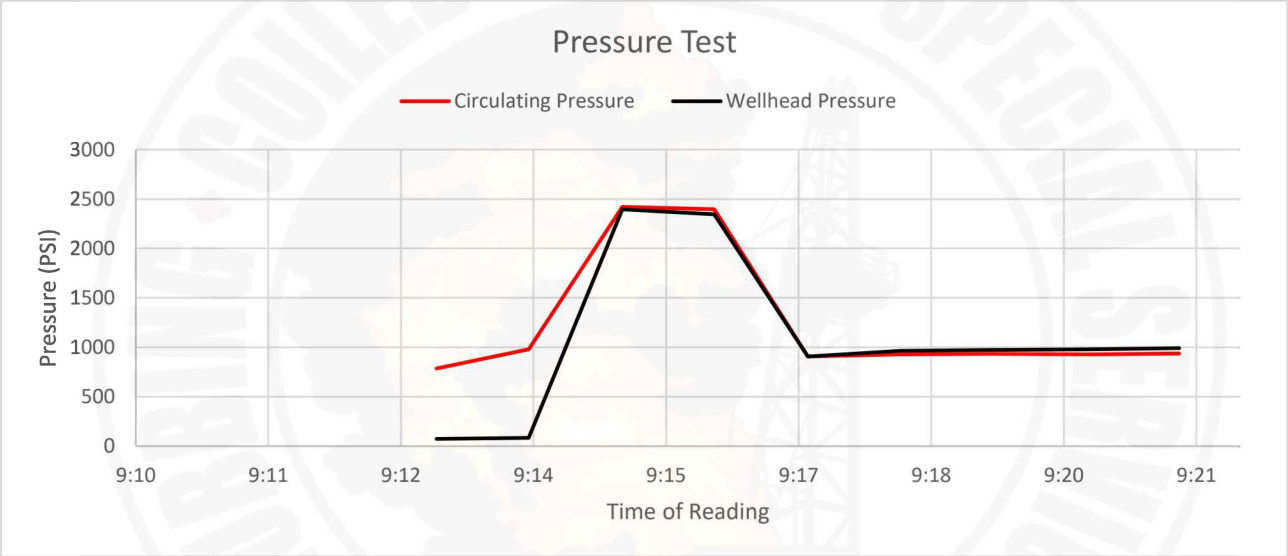
Pressure Test

Start / Finish based on JDR time record

From 9:10
To 9:22

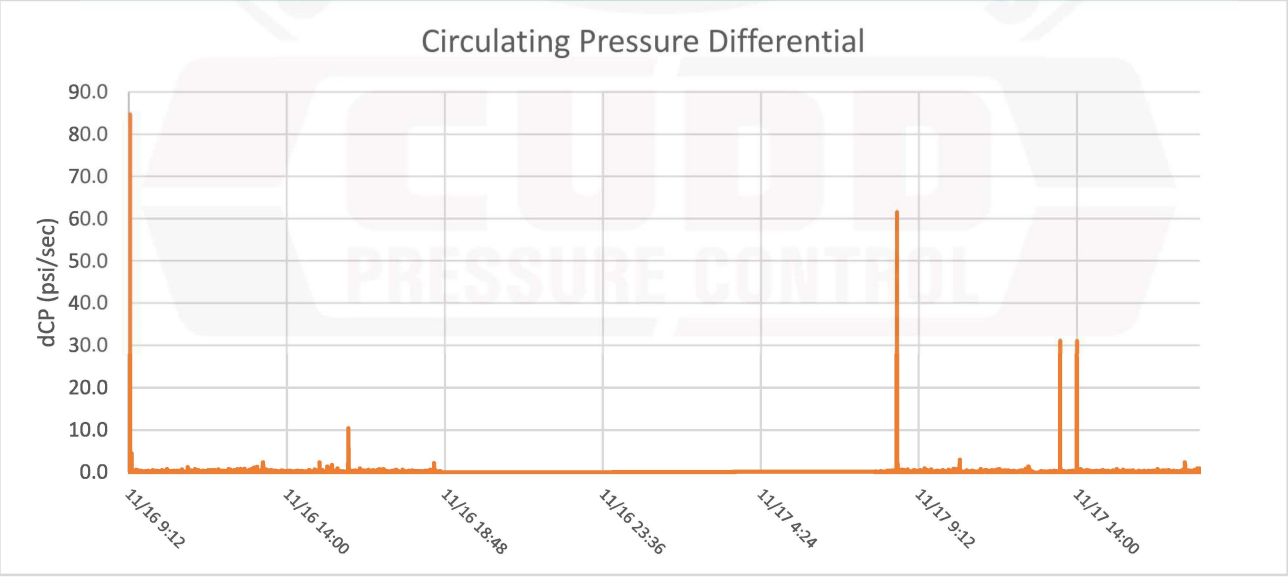
Tested To 2420 PSI

Stress Duration
Over 1000 PSI for 2 Minutes
Over 2000 PSI for 2 Minutes

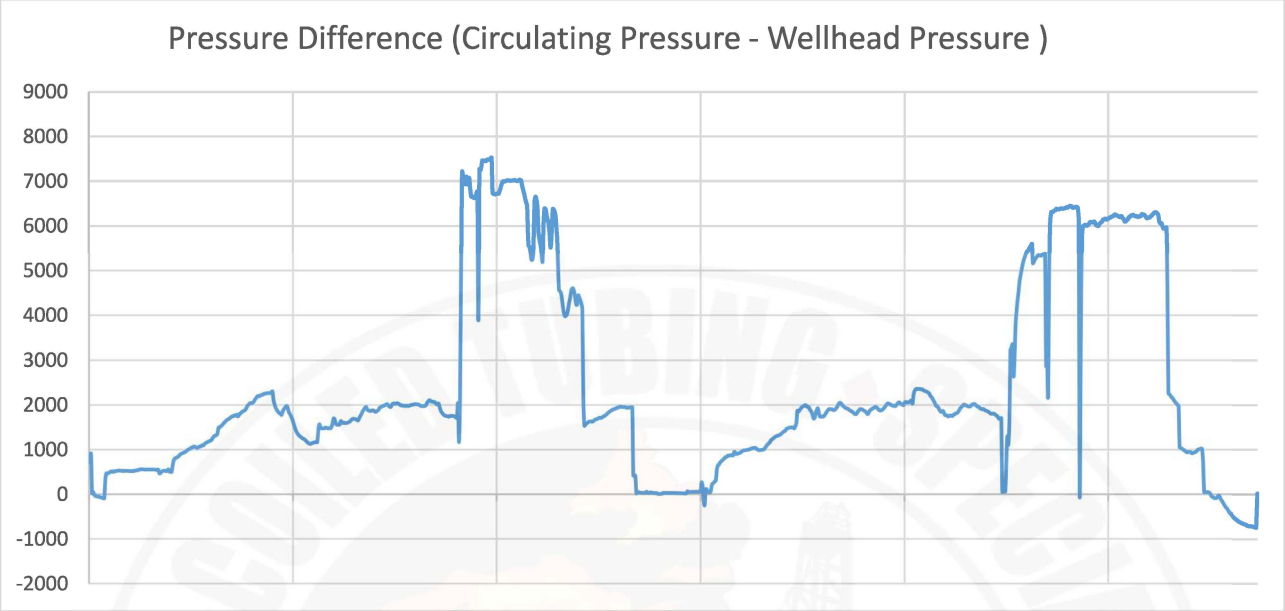


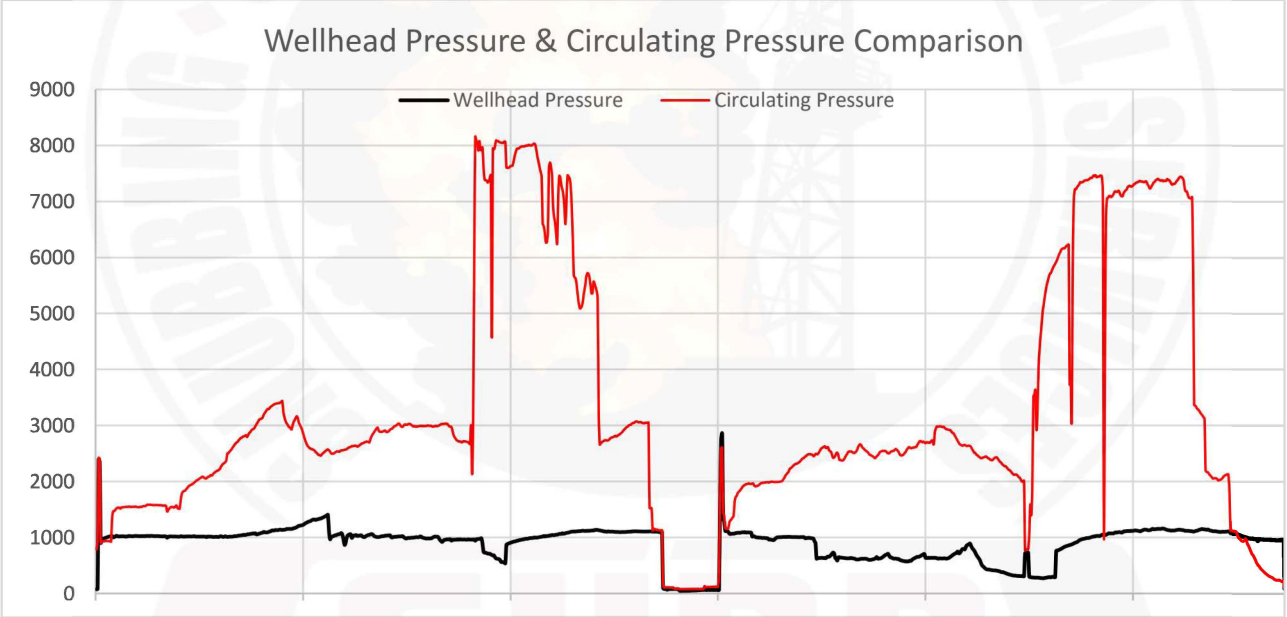
Circulating Pressure Differential

The circulating pressure varies over the course of normal operations; For the purposes of this report the Pressure Differential is defined as the rate of change in pressure at any given point in the recorded data. Larger values indicate rapid (or sudden) changes in pressure.



Pressure Difference (CP - WHP)





Minimum Pressure Difference	-742 psi
Maximum Pressure Difference	7527 psi
Average Pressure Difference	2392 psi

Negative values imply WHP > CP

Petrotek

Technical Report

DEEPWELL STIMULATION REPORT
CLASS I NON-HAZARDOUS DEEPWELL

MEWBOURNE WDW-1
(OCD UIC Permit: UICI-008-1)
(API Number: 30-015-27592)

HF Sinclair

Navajo Refining Company
Artesia, New Mexico

Section 31, Township 17S, Range 28E
660 FSL, 2310 FEL

December 2023

5935 South Zang Street, Suite 200
Littleton, Colorado 80127
Phone: (303) 290-9414
Fax: (303) 290-9580

TECHNICAL REPORT
DEEPWELL STIMULATION REPORT
CLASS I NON-HAZARDOUS DEEPWELL MEWBOURNE WDW-1
(OCD UIC Permit: UICI-008-1)
(API Number: 30-015-27592)

Navajo Refining Company
Artesia, New Mexico

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Attachment 2 - Safety Data Sheet: Acid Blend
Attachment 3 - CUDD Job Detail Report: Coiled Tubing
Attachment 4 - CUDD Post Job Report

Petrotek

1.0 INTRODUCTION

This report summarizes the stimulation activities performed on the Mewbourne WDW-1 well (WDW-1) at the HFSinclair Navajo Refining Company (HFSNR) facility in Artesia, New Mexico during the period of November 15 through 17, 2023. These activities were performed in accordance with the Form C-103 Cleanout and Stimulation Plan submitted to the New Mexico Oil Conservation Division (OCD) on October 26, 2023. OCD approved the Stimulation Plan in correspondence dated October 27, 2023. The Plan and OCD approval are provided in Attachment 1.

HFSNR currently operates four Class I Non-Hazardous waste injection wells at the HFSNR refinery. Underground sources of drinking water (USDWs) are protected by multiple strings of casing and cement circulated to surface in each of the wells. Waste fluids are delivered to the injection interval in WDW-1 via 4½-inch diameter 11.6 lb/ft, L-80 steel injection tubing.

The annulus area between the protective casing and injection tubing is filled with an inhibited brine. The annulus pressure is continually monitored to detect any potential leaks in the tubing or casing.

The stimulation activities described below were conducted via coiled tubing without removing the tubing, packer or any valves on the wellhead. The annulus seal was not disturbed during the stimulation procedure. No testing or inspections were required as a result of this work.

Unless otherwise noted, depths recorded in this report related to the stimulation are referenced to measured depth from Kelly Bushing (KB).

2.0 BACKGROUND AND SUMMARY

Field activities involved performing mechanical jetting and chemical stimulation of WDW-1. Ken Schlieper of Petrotek supervised all field activities. On November 14, 2023, CUDD Pressure Control (CUDD) mobilized a coiled tubing unit (CTU), a pump truck and a nitrogen pumper to location. On November 15, a 1.75-inch CTU with rotary wash nozzle was rigged up to the well.

The following provides a summary of the work performed on WDW-1, presented in chronological order.

On November 16, 1.75-inch coiled tubing with a 12-port, self-adjusting rotary wash nozzle rotary wash nozzle was run to a depth of 8,950 feet while jetting the well with nitrified 1% potassium chloride (KCl) fluid. Approximately 260 barrels (bbls) of nitrified 1% KCl fluid were pumped through the coiled tubing and rotary wash nozzle to scour the perforated interval from 7,924 feet to 8,476 feet and reach a total cleanout depth of 8,950 feet. During this process, approximately 573 bbls of fluid were produced back to the tanks at surface. Approximately 50 bbls of the soak solution shown in Table 1 below were then spotted throughout the perforated interval. The coiled tubing was displaced with 36 bbls of 1% KCl fluid and pulled from the well. This treatment was left to soak overnight.

Table 1
Acid Blend Soak Solution

Acid Blend	Quantity (barrels)
15% Hydrochloric Acid (HCl)	37.5
Plexhib 166, Corrosion Inhibitor @ 12 gpt w/Acid	0.6
Plexbreak 145, Non-Emulsifier @ 12 gpt w/Acid	0.6
Xylene, 11.2% w/Acid	5.6
AcidLink 701A, Solvent Acid Dispersant @ 40 gpt w/Acid	2.0
Citric Acid, 50% @ 75 gpt w/Acid	3.8
Total:	50

On November 17, the coiled tubing with rotary wash nozzle was run to a depth of 8,950 feet while jetting the well with nitrified 1% KCl fluid. Approximately 195 bbls of nitrified 1% KCl fluid were pumped through the coiled tubing and rotary wash nozzle to scour the perforated interval from 7,924 feet to 8,476 feet and reach a total cleanout depth of 8,950 feet. During this process, approximately 877 bbls of fluid returns were produced to the tanks at surface. Approximately 250 bbls of the stimulation solution shown in Table 2 were then spotted throughout the perforated interval. The coiled tubing was displaced with 36 bbls of 1% KCl fluid. This treatment was left to soak overnight before HFSNR resumed injection operations on WDW-1.

Table 2
Acid Blend Stimulation Solution

Acid Blend	Quantity (barrels)
7.5% HCl	209.3
Plexhib 166, Corrosion Inhibitor @ 6 gpt w/Acid	1.5
Plexbreak 145, Non-Emulsifier @ 6 gpt w/Acid	1.5
Xylene, 5.6% w/Acid	14.0
AcidLink 701A, Solvent Acid Dispersant @ 20 gpt w/Acid	5.0
Citric Acid, 50% @ 75 gpt w/Acid	18.8
Total:	250

The safety data sheet for the acid blend listed in Tables 1 and 2 is presented as Attachment 2.

A summary of daily activities is presented as Section 3 of this report. A Job Detail Report and Post Job Report from CUDD are included as Attachments 3 and 4, respectively.

3.0 SUMMARY OF WORK ACTIVITIES

The following provides a summary of the activities conducted on WDW-1 the cleanout stimulation.

Wednesday, November 15, 2023

Arrived onsite at 0800 hours, FESCO, Ltd. was already onsite. Waited on CUDD to complete site-specific safety training for contractor access to WDW-1 location. Shut-in and locked-out/tagged-out (LOTO) WDW-1 with HFSNR operator at 0920 hours. CUDD arrived on location at 1040 hours. Acquired safe work permit from operations department and conducted tailgate safety meeting and completed job hazard analysis (JHA) with FESCO, CUDD and HFSNR personnel for approved procedures at 1050 hours.

Swapped doghouse from 1.25-inch CTU to 1.75-inch CTU and made necessary connections. Rigged-up flowback iron to CTU and frac tanks. Rigged up CTU blowout preventer (BOP).

Shut down for night (SDFN) at 1630 hours.

Thursday, November 16, 2023

Arrived on location at 0700 hours. Acquired safe work permit from operations department and conducted tailgate safety meeting and completed JHA for approved procedures.

Rigged up injector head. Function tested BOPs - good test. Tested wash nozzle. Pressure tested iron and stack at 1,000 and 2,500 psi and observed a leak in iron. Tightened connections and pressure tested iron and stack at 1,000 and 2,500 psi again - successful test. Opened well at 0818 hours and ran in hole with 12-port rotary wash nozzle. Cleaned well to a depth 8,950 feet with nitrified 1% KCl while reciprocating rotary wash nozzle throughout length of perforated interval from 7,924 feet to 8,476 feet. Used approximately 260 bbls of nitrified 1% KCl fluid to flowback approximately 573 bbls of fluid. Spotted approximately 50 bbls of 15% HCl with additives across the perforated interval, displaced coil with 36 bbls of 1% KCl fluid. Returned coil tubing to surface at 1715 hours. Rigged down injector head and secured well for soak overnight.

SDFN at 1800 hours.

Friday, November 17, 2023

Arrived on location at 0700 hrs. Acquired safe work permit from operations department and conducted tailgate safety meeting and completed JHA for approved procedures.

Rigged up injector head. Pressure tested 1502 iron and stack at 1,000 and 2,500 psi – successful test. Opened well at 0737 hours and ran in hole with 12-port rotary wash nozzle. Cleaned well to a depth 8,950 feet with nitrified 1% KCl while reciprocating rotary wash

nozzle throughout length of perforated interval from 7,924 feet to 8,476 feet. Used approximately 195 bbls of nitrified 1% KCl fluid to flowback approximately 877 bbls of fluid. Spotted approximately 250 bbls of 7.5% HCl with additives across the perforated interval, displaced coil with 36 bbls of 1% KCl fluid. Returned coil tubing to surface at 1615 hours. Shut-in well at 1715 hours. Rigged down injector head, BOPs, flowback iron. Removed LOTO, secured well and returned control of well to HFSNR for overnight soak.

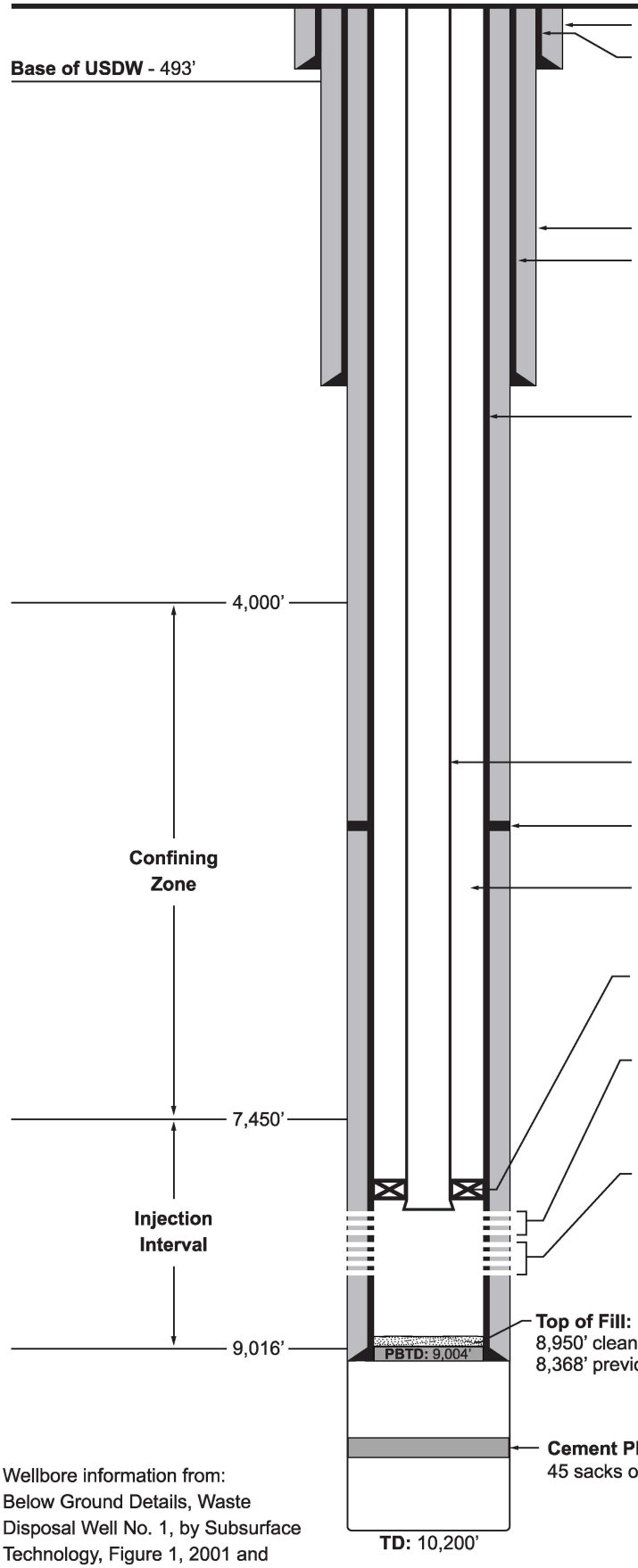
SDFN at 2100 hours and moved equipment off location.

FIGURES

Petrotek

OCD UIC Permit: UICI-008-1
Well API Number: 30-015-27592
Eddy County, New Mexico
Sec. 31, T17S-R28E
Lat. 32.78517° / Long. -104.21376° (NAD 83)

All depths referenced to Kelly Bushing (KB) elevation 12.5' above ground level.
Ground Level Elevation: +3,678' MSL



17-1/2" Hole

Surface Casing (0' - 390'): 13-3/8", 48 lb/ft, J-55, ST&C cemented to surface with 150 sacks of Class C with 3% calcium chloride, 375 sacks of Class C Litewate with 3% calcium chloride and 1/2 lb/sk flocele. Circulated 86 sacks to surface.

12-1/4" Hole

Intermediate Casing (0' - 2,555'): 9-5/8", 36 lb/ft, J-55, ST&C cemented with 800 sacks of Class C Lite with 1/2 lb/sk flocele and 2 lb/sk Gilsonite and 12% salt. Followed by 200 sacks of Class C with 2% calcium chloride. Circulated 133 sacks to surface.

Protection Casing (0' - 9,094'): 7", 26 lb/ft, P-110, LT&C (Surface - 5,845'). 7", 29 lb/ft, P-110, LT&C (5,845' - 7,031'). 7", 29 lb/ft, N-80, LT&C (7,031' - 9,094').

First Stage: 600 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, and 1 lb/sk salt mixed at 13.0 ppg. Opened DV tool at 5,498' and circulated 142 sacks to surface.

Second Stage: Lead Slurry: 220 sacks of Interfill "C" (35:65:6) mixed at 11.7 ppg. Tail Slurry: 550 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, 0.1% HR-7, and 1 lb/sk mixed at 13.0 ppg. Circulated 75 sacks to surface. Topped out with 20 sacks of premium plus 3% calcium chloride.

Injection Tubing (0' - 7,869'): 4-1/2", 11.6 lb/ft, L-80, LT&C

DV Tool (5,498')

Annulus Fluid: 8.7 lb/gal brine water mixed with UniChem Techni-Hib 370 corrosion inhibitor

Packer (7,869'): 7" x 2-7/8" Weatherford (Arrow), Model X-1 retrievable packer.

Zone 1 Perforations:
7,924' - 7,942', 7,974' - 8,030', 8,050' - 8,056', 8,066 - 8,080', 8,118' - 8,127', 8,132' - 8,140', 8,160' - 8,164', 8,170' - 8,188'.

Zone 2 Perforations:
8,220' - 8,254', 8,260' - 8,270', 8,280' - 8,302', 8,360' - 8,366', 8,370' - 8,378', 8,400' - 8,410', 8,419' - 8,423', 8,430' - 8,446', 8,460' - 8,464', 8,470' - 8,476'.

Top of Fill:
8,950' cleanout depth (11/16/23)
8,368' previous fill tag (05/11/23)

Cement Plug (9,624' - 9,734'):
45 sacks of Class H

Wellbore information from: Below Ground Details, Waste Disposal Well No. 1, by Subsurface Technology, Figure 1, 2001 and 2018 Workover.

NOT TO SCALE

HF Sinclair

Figure 1
WDW-1 Wellbore Schematic

2023 Deepwell Stimulation Report

Scale: NTS	Date: December 2023	
FIG_01_WDW-01_2023.pdf	By: KRS	Checked: WJ

Petrotek
5935 South Zang Street, Suite 200
Littleton, Colorado 80127 USA
303-290-9414
www.petrotek.com

ATTACHMENTS

Petrotek

Attachment 1
OCD Notification and Approval Correspondence

Petrotek

Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form
Revised July 18, 2013

WELL API NO.
30-015-27592

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
B-2071-28

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Mewbourne WDW-1

1. Type of Well: Oil Well ☐ Gas Well ☒ Other – UIC Injection Well

8. Well Number: WDW-1

2. Name of Operator
HF SINCLAIR NAVAJO REFINERY LLC

9. OGRID Number: 15694

3. Address of Operator
P.O. Box 159, Artesia, NM 88210

10. Pool name or Wildcat
PENN 96918

4. Well Location
Unit Letter O 660 feet from the South line and 2,310 feet from the EAST line
Section 31 Township 17S Range 28E NMPM County: Eddy

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3,678' GL

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☒	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: PRESSURE FALLOFF TEST / MIT ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

- Utilizing coiled tubing, HF Sinclair will conduct a cleanout and 2-stage acid stimulation of the injection interval in WDW-1 to increase injectivity into the permitted injection zone.
- Stage 1 will consist of cleaning out fill to maximum achievable depth followed by spotting 40 bbls of acid blend containing 15% HCl, 11.2% xylene, 75 gpt 50% citric acid, 40gpt AcidLink 701A, 12gpt PlexHib 166, 12gpt PlexBreak 145, and allowing well to soak overnight.
- Stage 2 will consist of continuing to clean to maximum achievable depth followed by spotting 40 bbls of acid blend containing 7.5% HCl, 5.6% xylene, 75 gpt 50% citric acid, 20gpt AcidLink 701A, 6gpt PlexHib 166, 6gpt PlexBreak 145 followed by displacement.
- Following completion of stimulation activities, stimulation fluids produced would be reinjected into the well.
- **NOTE:** Work is expected to be performed during November / December 2023.

Spud Date: Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE Env. Manager DATE 10-26-23

Type or print name Case Hinkins E-mail address: Case.Hinkins@HFsinclair.com PHONE: 575-746-5399

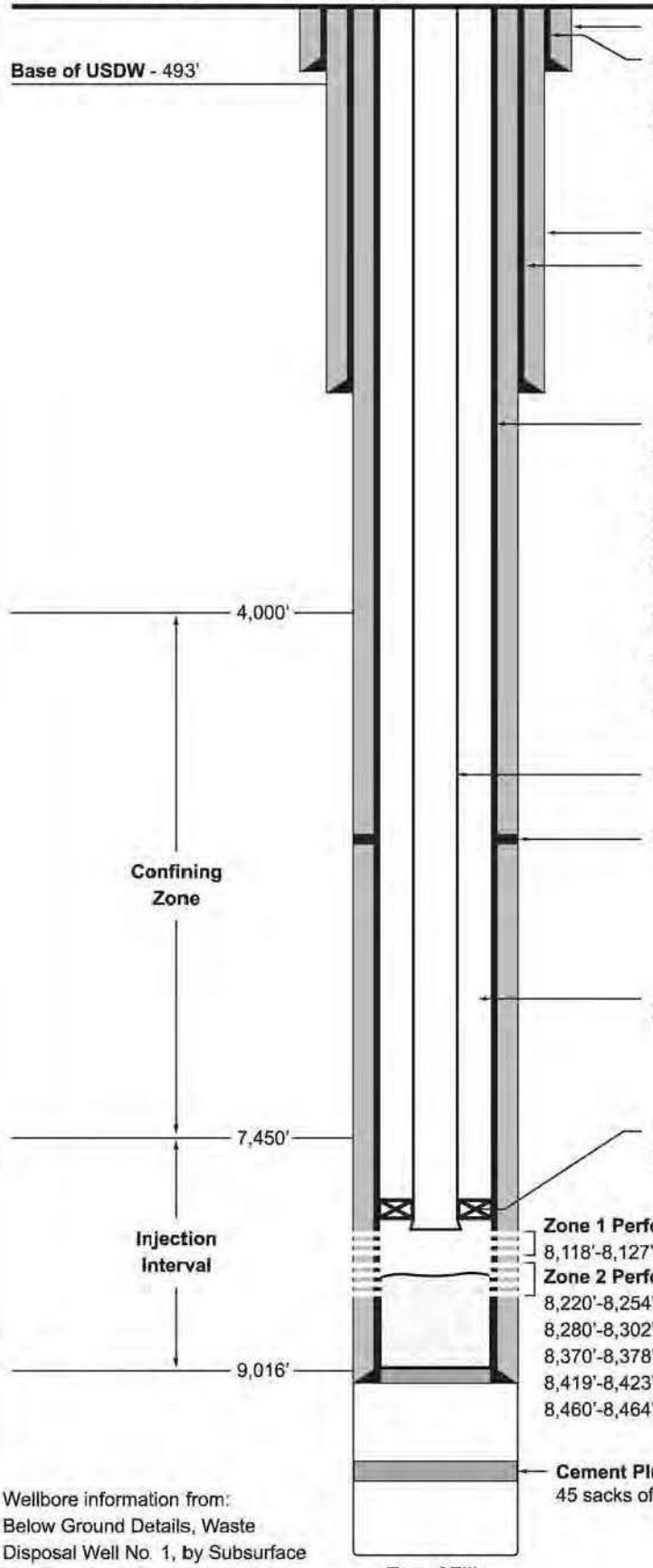
For State Use Only

APPROVED BY: TITLE DATE

Conditions of Approval (if any):

OCD UIC Permit: UICI-008-1
Well API Number: 30-015-27592
Eddy County, New Mexico
Sec. 31, T17S-R28E
Lat. 32.78517° / Long. -104.21376° (NAD 83)

All depths referenced to Kelly Bushing (KB) elevation 12.5' above ground level.
Ground Level Elevation: +3,678' MSL



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12-1/4" Hole

Intermediate Casing (0' - 2,555'): 9-5/8", 36 lb/ft, J-55, ST&C cemented with 800 sacks of Class C Lite with 1/2 lb/sk flocele and 2 lb/sk Gilsonite and 12% salt. Followed by 200 sacks of Class C with 2% calcium chloride. Circulated 133 sacks to surface.

Protection Casing (0' - 9,094'): 7", 26 lb/ft, P-110, LT&C (Surface - 5,845'). 7", 29 lb/ft, P-110, LT&C (5,845' - 7,031'). 7", 29 lb/ft, N-80, LT&C (7,031' - 9,094').

First Stage: 600 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, and 1 lb/sk salt mixed at 13.0 ppg. Opened DV tool at 5,498' and circulated 142 sacks to surface.

Second Stage: Lead Slurry: 220 sacks of Interfill "C" (35:65:6) mixed at 11.7 ppg. Tail Slurry: 550 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, 0.1% HR-7, and 1 lb/sk mixed at 13.0 ppg. Circulated 75 sacks to surface. Topped out with 20 sacks of premium plus 3% calcium chloride.

Injection Tubing (0' - 7,869'): 4-1/2", 11.6 lb/ft, L-80, LT&C

DV Tool (5,498')

Annulus Fluid: 8.7 lb/gal brine water mixed with UniChem Techni-Hib 370 corrosion inhibitor

Packer (7,869'): 7" x 2-7/8" Weatherford (Arrow), Model X-1 retrievable packer.

Zone 1 Perforations: 7,924'-7,942', 7,974'-8,030', 8,050'-8,056', 8,066-8,080', 8,118'-8,127', 8,132'-8,140', 8,160'-8,164', 8,170'-8,188'.

Zone 2 Perforations: 8,220'-8,254', 8,260'-8,270', 8,280'-8,302', 8,360'-8,366', 8,370'-8,378', 8,400'-8,410', 8,419'-8,423', 8,430'-8,446', 8,460'-8,464', 8,470'-8,476'.

Cement Plug (9,624' - 9,734'): 45 sacks of Class H

Wellbore information from: Below Ground Details, Waste Disposal Well No. 1, by Subsurface Technology, Figure 1, 2001 and 2018 Workover.

NOT TO SCALE

Top of Fill: 8,367.5' (Tagged 5/11/2023)
PBTD: 9,004'
TD: 10,200'

Previous Fill Tag: 8,375' (8/2021)

HOLLYFRONTIER

Draft Figure
Wellbore Schematic,
WDW-1

2023 Schematic Update

Scale: NTS	Date: May 2023	
WDW-01_HFNM_2023.pdf	By: WEK	Checked: WJ

Petrotek
5935 South Zang Street, Suite 200
Littleton, Colorado 80127 USA
303-290-9414
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District I
1625 N. French Dr., Hobbs, NM 88240
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District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 278978

COMMENTS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 278978
	Action Type: [C-103] Sub. Workover (C-103R)

COMMENTS

Created By	Comment	Comment Date
cchavez	Well Stimulation Work	10/27/2023

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 278978
	Action Type: [C-103] Sub. Workover (C-103R)

CONDITIONS

Created By	Condition	Condition Date
cchavez	Conditions of Approval for final report are as follows: 1. Operator to provide details on the CT tag depth to highlight the presence of fill (if applicable) inside the wellbore. 2. Operator to provide details on the maximum depth reached during CT cleanout operations, together with a summary of the stimulation operation(s) performed, i.e., Stimulation fluid description, volumes spotted/squeezed, soak time etc.	10/27/2023

Ken Schlieper

Subject: FW: The Oil Conservation Division (OCD) has approved the application, Application ID: 278978

From: Paengpongsavanh, Nat <Nat.Paengpongsavanh@HFSinclair.com>
Sent: Friday, October 27, 2023 9:20 AM
To: carlj.chavez@emnrd.nm.gov
Cc: Holder, Mike <Michael.Holder@HFSinclair.com>; Ken Schlieper <kschlieper@petrotek.com>; Hinkins, Case <Case.Hinkins@HFSinclair.com>
Subject: RE: The Oil Conservation Division (OCD) has approved the application, Application ID: 278978

Carl,
Thank you for looking at it quickly for us.

Nat

Nat Paengpongsavanh
Environmental Specialist II
O 575.746.0681
C 802.734.2175

Nat.Paengpongsavanh@HFSinclair.com
www.HFSinclair.com
401 Main Street
Artesia, NM 88211

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Friday, October 27, 2023 9:16 AM
To: Paengpongsavanh, Nat <Nat.Paengpongsavanh@HFSinclair.com>
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 278978

To whom it may concern (c/o Nat Paengpongsavanh for HF Sinclair Navajo Refining LLC),

The OCD has approved the submitted *Subsequent Report - Remedial Workover* (C-103R), for API number (30-#) 30-015-27592,
with the following conditions:

- **Conditions of Approval for final report are as follows: 1. Operator to provide details on the CT tag depth to highlight the presence of fill (if applicable) inside the wellbore. 2. Operator to provide details on the maximum depth reached during CT cleanout operations, together with a summary**

of the stimulation operation(s) performed, i.e., Stimulation fluid description, volumes spotted/squeezed, soak time etc.

The signed C-103R can be found in the OCD Online: Imaging under the API number (30-#).

If you have any questions regarding this application, please contact me.

Thank you,
Carl Chavez
Environmental Engineer
505-660-7923
CarlJ.Chavez@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Attachment 2
Safety Data Sheet: Acid Blend

Petrotek

SAFETY DATA SHEET

Date Prepared: 06/06/2022

Acid Blend #2

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Acid Blend #2

MANUFACTURER

Thru Tubing Solutions
2033 North Main St
Newcastle, OK 73065
Emergency Contact: G. Funkhouser
Emergency Phone: (855) 286-0640
Customer Service: (405) 692-1900

24 HR. EMERGENCY TELEPHONE NUMBERS
Poison Control Center (Medical): (877) 800-5553
CHEMTREC (US Transportation): (800) 424-9300
INTERNATIONAL CHEMTREC: 703-527-3887

2. HAZARDS IDENTIFICATION

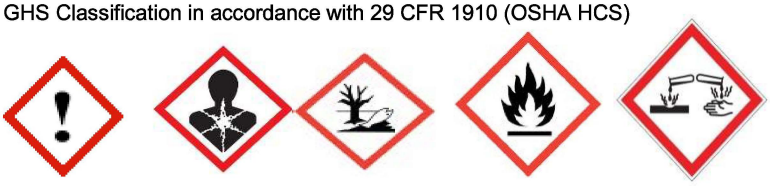
GHS CLASSIFICATIONS

HCS 20112 (29 CFR 1910.1200)

Flammable liquids, Category 2	H225: Highly flammable liquid and vapor
Acute toxicity, Category 4	H302: Harmful is swallowed
Acute toxicity, Category 3	H331: Toxic in contact with skin
Acute toxicity, Category 3	H331: Toxic if inhaled.
Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity – single exposure	H370: Causes damage to organs. (Central nervous system, optic nerve

GHS LABEL

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)



HAZARD STATEMENTS

H225: Highly flammable liquid and vapor
H302 + H312 Harmful is swallowed or in contact with skin.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H351: Suspected of causing cancer.
H360: May damage fertility or the unborn child.
H361: Suspected of damaging fertility or the unborn child.
H370: Causes damage to organs.
H373: Causes damage to organs through prolonged or repeated exposure.
.

PRECAUTIONARY STATEMENTS

Prevention:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilation/light/equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe dust/fumes/gas/mist/vapors/spray.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required.

Response:

P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P311: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P307 + P311: IF exposed: Call a POISON CENTER or doctor/ physician.
P332 + P313: If skin irritation occurs: Get medical advice/ attention.
P362 : Take off contaminated clothing and wash before reuse.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.

Disposal:

P501: Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification:

H401: Toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Hydrochloric Acid	5-30	7647-01-0
Xylene/Xylol Nitration Grade	0-20	1330-20-7
50% Citric Acid	0-10	77-92-9
AcidLink 701A	0-2.0	Upon Request
PlexHib 166	0-1.5	Upon Request
Plexaid 803	0-1.5	Upon Request
PlexBreak 145	0-1.5	Upon Request

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists. Should accident occur, flush eyes with generous amounts of water for at least 15 minutes. Administer prompt first aid measures.

SKIN: Remove clothing. Immediately flush skin with plenty of water for at least 15 minutes. Wash with soap and water. Obtain medical attention immediately if irritation occurs. Wash clothes before reuse.

INGESTION: Give plenty of water to dilute product. Do not induce vomiting. Keep victim quiet. If vomiting occurs, lower victims head below hips to prevent inhalation of vomited material. Seek medical help promptly.

INHALATION: Rescuers should put on appropriated protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention. To prevent aspiration, keep head below knees.

MOST IMPORTANT SYSMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

Symptoms will depend on the target organs.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

NOTES TO PHYSICIAN

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. FIRE FIGHTING MEASURES

Flash point **70 °F (21 °C)**
Flammability class: Flammable

Autoignition temperature **No data available**

Flammability / Explosive limit **No data available**

5.1 Extinguishing media
Suitable extinguishing media
- **Extinguishing media - small fires**
- **Multipurpose powders**
- **Carbon dioxide (CO_2)**
- **Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)**
- **Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)**

Unsuitable extinguishing media

- **Water may be ineffective.**

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

- Flammable liquid and vapor.

- May burn with a colourless flame
- The pressure in sealed containers can increase under the influence of heat.

- In case of heating:
- Highly flammable gas is released, which increases fire / explosion hazards.
- Flash back possible over considerable distance.

- In case of heating:
- Harmful or toxic vapors are released.
- Hazardous decomposition products formed under fire conditions.
- (following evaporation of water)
- High concentrations of toxic or harmful products may remain in the residual liquid once the fire has been extinguished.

Hazardous combustion products:

- On combustion or on thermal decomposition (pyrolysis), releases:
- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Nitrogen oxides (NOx)
- Oxides of phosphorus

5.3 Advice for firefighters
Special protective equipment for fire-fighters

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Specific fire fighting methods

- Stay upwind.

- Pay attention to flashback.
- Fight fire remotely due to the risk of explosion.

- Suppress (knock down) gases/vapors/mists with a water spray jet.
- Do not use a solid water stream as it may scatter and spread fire.
- Cool down the containers / equipment exposed to heat with a water spray. Ensure that there is NO direct contact between the water and the product.
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

- Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

Further information

- Evacuate personnel to safe areas.

- Intervention only by capable personnel who are trained and aware of the hazards of the product.
- Never approach containers which have been exposed to fire, without cooling them sufficiently.

- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Immediately evacuate personnel to safe areas.
- Stay upwind.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Avoid inhalation, ingestion and contact with skin and eyes.
- Wear chemical resistant personal protective equipment
- Wear suitable gloves.
- Wear suitable protective clothing.
- Respiratory protection

- Wear as appropriate:
- Face-shield
- Tightly fitting safety goggles
- In the case of dust or aerosol formation use respirator with an approved filter.
- In the case of vapor formation use a respirator with an approved filter.
- Eliminate all ignition sources if safe to do so.
- Ventilate the area.

- Stop leak if safe to do so.
- If spillage occurs on the public highway, indicate the danger and notify the authorities (police, fire service).
- For further information refer to section 8 "Exposure controls / personal protection."

6.2 Environmental precautions

- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
    - Prevent further leakage or spillage if safe to do so.
    - Contain the spilled material by diking.
    - The product should not be allowed to enter drains, water courses or the soil.
    - Local authorities should be advised if significant spillages cannot be contained.
    - If the product contaminates rivers and lakes or drains inform respective authorities.
    - If the spill area is porous, the contaminated material must be collected for subsequent treatment or disposal.
- Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

- No sparking tools should be used.

- Stop leak if safe to do so.
    - Dam up with sand or inert earth (do not use combustible materials).

    - Control the vapors with:
    - Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)

    - Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).
    - Shovel or sweep up.
    - Keep in suitable, closed containers for disposal.
    - Never return spills in original containers for re-use.

- Wash nonrecoverable remainder with large amounts of water.
- Clean contaminated surface thoroughly.
- Recover the cleaning water for subsequent disposal.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.

- Dispose of as hazardous waste in compliance with local and national regulations.

Additional advice

- Possible need to alert the neighborhood.
- Mark the contaminated area with signs and prevent access to unauthorized personnel.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Ventilate the area.

- Following decontamination, wait several hours before allowing anyone to enter the area.
- Material can create slippery conditions.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
  13. DISPOSAL CONSIDERATIONS

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

- Do not use sparking tools.
- Ensure all equipment is electrically grounded before beginning transfer operations.

- Handle in accordance with good industrial hygiene and safety practice.
- Avoid contact with skin and eyes.

- Do not ingest.
- Do not breathe vapors or spray mist.

- Handle in accordance with good industrial hygiene and safety practice.

- The product must only be handled by specifically trained employees.

- Provide sufficient air exchange and/or exhaust in work rooms.
- Vapor extraction at source
- Do not use in areas without adequate ventilation.
- Do NOT handle in a confined space.
- Extracted air must not be allowed to return to the workplace.
- - The product should only be used in areas from which all naked lights and other sources of ignition have been
- excluded.
- - Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- - Take precautionary measures against static discharges.
- - Ground/bond container and receiving equipment.
- - To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.
- - Ensure all equipment is electrically grounded before beginning transfer operations.
- - Use only non-sparking tools.
- - Avoid high temperatures.
- - Wear personal protective equipment.
- - Wear suitable protective clothing.
- - Avoid inhalation, ingestion and contact with skin and eyes.
- - Do NOT handle without gloves.
- - Do NOT handle if hands have any cuts or wounds.
- - Avoid splashes.
- - Avoid formation of aerosol.

Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling these materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.

- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

- Exposed employees should have regular medical check-ups

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Take appropriate measures to prevent static discharges, which may include thorough electrical interconnecting, grounding of equipment, and/or conveyance under inert gas.
- Vapour space above stored liquid may be flammable/explosive unless blanketed with inert gas.
- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
- Keep in a contained area
- The floor of the storage area should be impermeable and designed to form a water-tight basin.
- Keep locked up or in an area accessible only to qualified or authorized persons.
- Keep containers tightly closed in a dry, cool and well-ventilated place.
- Keep away from open flames, hot surfaces and sources of ignition.
- Keep away from incompatible materials to be indicated by the manufacturer

- Keep away from: Hazardous reactions may occur on contact with certain chemicals. (Refer to the list of incompatible materials section 10: "Stability-Reactivity").

Packaging material

Suitable material
- Electrical conducting materials

Unsuitable material
- Electrical insulating materials

7.3 Specific end use(s)
- no data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Methanol	TWA	200 ppm 260 mg/m3	National Institute for Occupational Safety and Health
	Potential for dermal absorption		
Methanol	ST	250 ppm 325 mg/m3	National Institute for Occupational Safety and Health
	Potential for dermal absorption		

Methanol	**STEL**	**250 ppm**	**American Conference of Governmental Industrial Hygienists**
	Danger of cutaneous absorption		
Methanol	**TWA**	**200 ppm 260 mg/m3**	**Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants**
	The value in mg/m3 is approximate.		
Ethylene Glycol Monobutyl Ether	**TWA**	**5 ppm 24 mg/m3**	**National Institute for Occupational Safety and Health**
	Potential for dermal absorption		
Ethylene Glycol Monobutyl Ether	**TWA**	**20 ppm**	**American Conference of Governmental Industrial**
Ethylene Glycol Monobutyl Ether	**TWA**	**50 ppm 240 mg/m3**	**Occupational Safety and Health Administration**

Danger of cutaneous absorption
Skin designation

NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

Components	CAS-No.	Concentration
Methanol	67-56-1	6000 parts per million
Ethylene Glycol Monobutyl Ether	111-76-2	700 parts per million

Components	Value type	Value	Basis
Methanol	**BEI**	**15 mg/l Methanol Urine End of shift (As soon as possible after exposure ceases)**	**American Conference of Governmental Industrial Hygienists**
Ethylene Glycol Monobutyl Ether	**BEI**	**200 mg/g Creatinine Butoxyacetic acid (BAA) Urine End of shift (As soon as possible after exposure ceases)**	**American Conference of Governmental Industrial Hygienists**

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Xylenes (o-, m-, p- isomers) 1330-20-7	100 ppm TWA; 435 mg/m3 TWA	150 ppm STEL 100 ppm TWA	
Ethylbenzene 100-41-4	100 ppm TWA; 435 mg/m3 TWA	20 ppm TWA	NIOSH: 100 ppm TWA; 435 mg/m3 TWA 125 ppm STEL; 545 mg/m3 STEL

Biological Exposure Indices

With hydrolyses

8.2 Exposure controls

Control measures

Engineering measures

- Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures

- Effective exhaust ventilation system
- Ensure adequate ventilation.

- Extract at emission point.
- Ensure that extracted air cannot be returned to the workplace through the ventilation system.

- Use mechanical handling to reduce human contact with materials.
- Use closed processing systems or containment technologies.
- Avoid splashes.
- Avoid formation of aerosol.

Individual protection measures

Respiratory protection

- Recommended Filter type: Organic gas and low boiling vapor type
- This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation.
- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.
- If mist is formed:
- If vapor is released:
- Wear a positive-pressure supplied-air respirator with full facepiece.

Hand protection

- Where there is a risk of contact with hands, use appropriate gloves
- Gloves must be inspected prior to use.
- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Suitable material

- butyl-rubber

Eye protection

- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.
- Eye contact should be prevented through the use of:

- Tightly fitting safety goggles
- Face-shield

Skin and body protection

- Workers should wear antistatic footwear.
- Full protective suit
- Footwear protecting against chemicals
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling these materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

- Exposed employees should have regular medical check-ups

Protective measures

- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

- Emergency equipment must be selected in accordance with current local regulations and in cooperation with the supplier of the protective equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
ODOR: Acrid
ODOR THRESHOLD: Not available
COLOR: Off-white, opaque
pH: <2
PERCENT VOLATILE:
FLASH POINT: 70° F (21°C)
LEL: 1.00
AUTOIGNITION TEMPERATURE: Unknown
VAPOR PRESSURE: Not Available
VAPOR DENSITY: Not Available
MELTING POINT: Not available
FREEZING POINT: Not Available
POUR POINT: Not Available
THERMAL DECOMPOSITION: Not Available
SOLUBILITY IN WATER: Not Available
EVAPORATION RATE: Not Available
DENSITY: ND
SPECIFIC GRAVITY: ND
VISCOSITY #1:
(VOC):

10. STABILITY AND REACTIVITY

10.1 Reactivity
- Stable at normal ambient temperature and pressure.
10.2 Chemical stability
- Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
- Explosion possible with gas/vapor and air mixtures above flash point. Vapors may form explosive mixture with air.
10.4 Conditions to avoid
- Prevent the build-up of electrostatic charge.
- Avoid high temperatures.
- Keep away from open flames, hot surfaces and sources of ignition.
10.5 Incompatible materials
- Strong oxidizing agents

10.6 Hazardous decomposition products
- On combustion or on thermal decomposition (pyrolysis), releases:
- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Nitrogen oxides (NOx)

- Oxides of phosphorus

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
Acute oral toxicity This product is classified as acute toxicity category 4
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Acute inhalation toxicity
Methanol LC50 - 4 h: > 115.9 mg/l - Rat, female
Unpublished reports
LC50 - 4 h (vapor) : 130.7 mg/l - Rat, male
Unpublished reports
Humans
Target Organs: Central nervous system, optic nerve
Symptoms: Inhalation may provoke the following symptoms, Dizziness, Nausea, acidosis, Blurred vision, Impairment of vision, Symptoms may be delayed.

This product is classified as acute toxicity category 3
Published data
Alkyl Phenol Ethoxylated No data available
Ethylene Glycol Monobutyl Ether LC50 - 4 h (vapor) : 2.2 mg/l - Rat , male and female
This product is classified as acute toxicity category 3
Acute dermal toxicity This product is classified as acute toxicity category 4
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Acute toxicity (other routes of administration)
Not applicable
Skin corrosion/irritation Irritating to skin.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Serious eye damage/eye irritation Risk of serious damage to eyes.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Respiratory or skin sensitization Does not cause skin sensitization.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Mutagenicity
Genotoxicity in vitro Product is not considered to be genotoxic
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Genotoxicity in vivo Product is not considered to be genotoxic
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Carcinogenicity The product is not considered to be carcinogenic.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA
Toxicity for reproduction and development
Toxicity to reproduction / fertility the product is not considered to affect fertility.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Developmental Toxicity/Teratogenicity The product is not considered to be toxic for development.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
STOT
STOT-single exposure Routes of exposure: Inhalation, Skin contact, inhalation (vapor)
Target Organs: Central nervous system, optic nerve
The substance or mixture is classified as specific target organ toxicant, single exposure, category 1 according to GHS criteria.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
STOT-repeated exposure the substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
The product itself has not been tested.
Experience with human exposure
Experience with human exposure: Inhalation
Methanol Target Organs: Central nervous system
Target Organs: optic nerve
Symptoms: Inhalation may provoke the following symptoms:

Dizziness
Nausea
acidosis
Blurred vision
Impairment of vision
Published data
Experience with human exposure: Ingestion
Methanol Target Organs: Central nervous system
Target Organs: optic nerve
Symptoms: Ingestion may provoke the following symptoms:
Dizziness
Nausea
acidosis
Abdominal pain
Vomiting
Central nervous system depression
Headache
Breathing difficulties
Impairment of vision
Blurred vision
Coma
Death
May cause respiratory arrest.
Poison may be fatal or cause blindness if swallowed.
Aspiration toxicity Not classified for aspiration toxicity according to GHS criteria
According to the available data on the components, According to the classification criteria for mixtures., internal evaluation

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12. ECOLOGICAL INFORMATION

12.1 Toxicity
Aquatic Compartment
Acute toxicity to fish the product itself has not been tested. Global ecotoxicity assessment available below.
Acute toxicity to daphnia and other aquatic invertebrates
The product itself has not been tested. Global ecotoxicity assessment available below.
Toxicity to aquatic plants the product itself has not been tested. Global ecotoxicity assessment available below.
Toxicity to microorganisms the product itself has not been tested.
Chronic toxicity to fish the product itself has not been tested. Global ecotoxicity assessment available below.
Chronic toxicity to daphnia and other aquatic invertebrates
The product itself has not been tested. Global ecotoxicity assessment available below.
Sediment compartment
Toxicity to benthic organisms the product itself has not been tested.
Terrestrial Compartment
Toxicity to soil dwelling organisms the product itself has not been tested.
Toxicity to terrestrial plants The product itself has not been tested.
Toxicity to above ground organisms The product itself has not been tested.
M-Factor
Tall Oil Diethanolamide Acute aquatic toxicity = 1
(according to the Globally Harmonized System (GHS))
12.2 Persistence and degradability
Abiotic degradation
Stability in water Conclusion is not possible for a mixture as a whole.
Photodegradation Conclusion is not possible for a mixture as a whole.
Physical- and photo-chemical elimination
Physico-chemical removability Conclusion is not possible for a mixture as a whole.
Biodegradation
Biodegradability As (bio)degradability is not relevant for mixtures, all the components of the mixture were assessed individually (rapid degradability assessment available below).
Degradability assessment Conclusion is not possible due to incomplete or heterogeneous data on the

components
12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water
Methanol Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.
Ethylene Glycol Monobutyl Ether Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Bioconcentration factor (BCF) None of the components are considered to be potentially bioaccumulable
12.4 Mobility in soil
Adsorption potential (Koc) Conclusion is not possible for a mixture as a whole.
Known distribution to environmental compartments
Methanol Ultimate destination of the product: Air
Water
12.5 Results of PBT and vPvB assessment This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).
12.6 Other adverse effects
Ecotoxicity assessment
Short-term (acute) aquatic hazard Toxic to aquatic life.
According to the available data on the components.
According to the classification criteria for mixtures.
Unpublished reports and/or published data.
Long-term (chronic) aquatic hazard Toxic to aquatic life with long lasting effects.
According to the available data on the components.
According to the classification criteria for mixtures.

Unpublished reports and/or published data.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product Disposal
Prohibition
- Do not discharge directly into the environment.
- Do not dispose of with domestic refuse.
- Dispose of as hazardous waste in compliance with local and national regulations.
- Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Waste Code
- Environmental Protection Agency
- Hazardous Waste – YES
- RCRA Hazardous Waste (40 CFR 302)
- D001 - Ignitable waste – (I)

Advice on cleaning and disposal of packaging
Prohibition
- Do NOT dispose of untreated packaging with industrial waste.
- Do not dispose of with domestic refuse.
- Empty remaining contents.
- Clean using steam.
- Monitor the residual vapors.
- Dispose of rinse water in accordance with local and national regulations.
- Containers that cannot be cleaned must be treated as waste.
- Dispose of contents/ container to an approved waste disposal plant.
- Dispose of in accordance with local regulations.
- In accordance with IMDG regulations containers or tankers that have not been cleaned or deodorized and that previously contained a hazardous product, must either be labeled or have hazard signs.
- Where possible recycling is preferred to disposal or incineration.
- The recycled material must be completely dry and free of pollutants

14. TRANSPORT INFORMATION

UN CODE: UN1307	**UN CODE: UN1789**	**UN CODE: 1992**	**UN CODE: 1993**
DOT NAME: Xylene	**DOT NAME: Hydrochloric acid**	**DOT NAME: Methanol**	**DOT NAME: Isopropyl alcohol**
HAZARD CLASS: 3			

PACKAGE GROUP: II

UN CODE: N 3082

DOT NAME: Ethylene glycol

15. REGULATORY INFORMATION

15.1 Notification status
Inventory Information Status
United States TSCA Inventory - All substances listed as active on the
TSCA inventory
Canadian Domestic Substances List (DSL) - Listed on Inventory
Australia Inventory of Chemical Substances (AICS) - Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances - Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI) - Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC) - Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS) - Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI) - Listed on Inventory
New Zealand. Inventory of Chemical Substances - All components are listed on the NZIOC
inventory. The HSNO status of the
product has not been assessed.
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical
(REACH)
- When purchased from a Solvay legal
entity based in the EEA ("European
Economic Area"), this product is
compliant with the registration provisionsof the REACH Regulation (EC) No.
1907/2006 as all its components are
either excluded, exempt, and/or
registered. When purchased from a legal
entity outside of the EEA, please contact
your local representative for additional
information.

15.2 Federal Regulations
US. EPA EPCRA SARA Title III
SARA Hazard Designation Sections 311/312 (40 CFR 370)
Flammable (gases, aerosols, liquids, or solids) Yes
Acute toxicity (any route of exposure) Yes
Skin corrosion or irritation Yes
Serious eye damage or eye irritation Yes
Specific target organ toxicity (single or repeated exposure) Yes
The categories not mentioned are not relevant for the product.
Section 313 Toxic Chemicals (40 CFR 372.65)
The following components are subject to reporting levels established by SARA Title III, Section 313:
Components CAS-No. Concentration
Methanol 67-56-1 20- 25%
Ethylene Glycol Monobutyl Ether 111-76-2 5- 10%
Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
This material does not contain any components with a section 302 EHS TPQ.
Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
Components CAS-No. Reportable quantity
Ethylene Oxide 75-21-8 10 lb
Calculated RQ exceeds reasonably attainable upper limit.
Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
Components CAS-No. Reportable quantity
Ethylene Oxide 75-21-8 10 lb
Calculated RQ exceeds reasonably attainable upper limit.
US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)
Components CAS-No. Reportable quantity
Methanol 67-56-1 5000 lb
Calculated RQ exceeds reasonably attainable upper limit.
15.3 State Regulations
US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product can expose you to chemicals including 1,4-Dioxane (CAS # 123-91-1), Acetaldehyde (CAS # 75-07-0), Ethylene Oxide (CAS # 75-21-8) , which is/are known to the State of California to cause cancer, and
This product can expose you to chemicals including Methanol (CAS # 67-56-1), Ethylene Oxide (CAS # 75-21-8) , which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

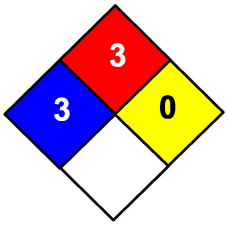
16. OTHER INFORMATION

REASON FOR ISSUE: Original Version
APPROVED BY: Eric Baldridge
TITLE: QHS&E Director
PREPARED BY: Eric Baldridge
DATE PREPARED: 06/07/2022
DATE REVISED:
REV:

HMIS RATING

HEALTH	3
FLAMMABILITY	3
Reactivity	0

NFPA CODES



MANUFACTURER DISCLAIMER: The information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since the information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the result of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Attachment 3
CUDD Job Detail Report:
WDW-1 Coiled Tubing

Petrotek

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/16/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
06:45								Arrive on Location
07:00								Safety meeting
07:20								Function Test BOP's - GOOD TEST
07:30								Cut Pipe 30'
07:41								Make up BHA
07:42								TEST WASH NOZZLE .75 BPM/ 800PSI 1.0 BPM/ 1400 PSI
07:54	-49.0			136	32	-7155		Depth set to 0 FT
07:54	-49.0			143	35	-7258		Weight set to 0 LBS
08:04	-49.0			151	35	-6988		Start pressure testing
08:05	-49.0			150	36	-7040		Start low pressure test - 1K
08:05	-49.0			150	36	-6962		Start high pressure test - 2500 PSI
08:07	-49.0			148	35	-6898		Leak - FLOWBACK IRON
08:14	-49.0			157	37	-7040		Start high pressure test - 2500 PSI
08:16	-49.0			158	39	-7142		Pressure test passed
08:17	-49.0			158	38	-7117		Bleed off pressure - BLEED TO 800 PSI
08:17	-49.0			155	35	-6924		End pressure testing
08:18	-49.0			159	39	-7014		Open well
08:25	-49.0			164	39	-7232		Run in hole (RIH)
08:27	-49.0			166	41	-6808		Fluid rate change - ONLINE .4 BPM
08:29	-49.0			166	41	-6847		N2 rate change - ONLINE 300 SCF

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/16/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
08:35	-49.4			164	42	-7155		Weight check - HYD 600/ PU WEIGHT 8,500 TEN/ 800 TRAC/ 1000
09:13	0.1			891	75	-835		Weight check - HYD 1,000/ PU WEIGHT 14,200 TEN/1000 TRAC/ 1000
09:18	0.2			931	969	-1516		PU ABOVE PACKER (EOT)
09:19	0.2			937	980	-2813		Fluid rate change - INCREASE TO .75 BPM
09:20	0.2			936	985	-2620		N2 rate change - INCREASE TO 500 SCF
10:04	2530.8			1587	1027	-488		WGT CHECK 16K HYD 1K
10:11	3153.3			1574	1023	822		WGT CHECK 16K HYD 1K
10:36	4960.1			1771	1021	8722		TAG P/U 50FT WGT 16K HYD 1K
10:48	5763.6			1977	1023	5934		WGT CHECK 16K HYD 1K
10:56	6415.1			2087	1016	6782		WGT CHECK 16K HYD 1K
11:18	7889.0			2346	1017	12820		@DEPTH WAIT FOR SWEEP
11:54	8624.1			3126	1082	10443		PU TO BOTTOM PERF
12:06	8736.2			3380	1125	9994		WAIT FOR SWEEP
12:13	8833.1			3427	1137	10263		RR 2.6
12:47	8899.7			2524	1318	14875		N2 rate change - DECREASE TO 350 SCF
13:20	8369.3			2612	1060	15941		ABOVE PERFS WAIT FOR WATER TO CLEAN UP
14:00	8392.6			2929	1036	14862		N2 OFFLINE
14:17	7967.4			3022	990	17174		PUMPING ACID
14:23	7921.6			2994	1002	8221		RIH DOWN TO PERFS
14:51	7921.6			3028	931	8683		START DISPLACING ACID

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/16/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
14:55	7921.6			3027	968	8825		ACID AT BIT, PU TO PACKER
15:19	7921.6			1840	960	7990		RBIH TO BOTTOM PERF
15:30	8269.1			7957	848	7360		TAGGED P/U RBIH
15:36	8430.1			7368	711	9852		TAGGED, P/U RBIH
15:52	8480.3			8095	540	14374		SODA ASH GONE, START FRESH WATER
16:00	8354.9			7744	928	16686		@DEPTH P/U
16:01	8336.4			7817	929	16840		POOH WGT 16K HYD 1K
16:22	7960.0			7876	997	9531		DROP RATE 1BBL
17:16	7926.4			5388	1123	14078		PUMP OFFLINE
17:27	7295.3			2711	1115	16596		WELL CLOSED BLEED DOWN
17:29	7098.5			2738	1111	16134		COME OFF WELL
17:33	6627.6			2737	1107	14811		HEAD IN CRADLE
18:36	-34.7			107	79	2723		CLOSE BLINDS ADN NUMBER 7 ON BOP
18:36	-34.7			110	79	2787		SHUTDOWN FOR TODAY

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/17/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
06:45								Arrive on Location
07:00								Safety meeting
07:16								TEST NOZZLE
07:22								Flange to wellhead
07:26								Depth set to 0 FT
07:30								Break Circulation
07:31								Start pressure testing
07:31								Start low pressure test - 1K
07:31								Start high pressure test - 2500 PSI
07:33								Pressure test passed
07:34								Bleed off pressure - BLEED OFF TO 1K
07:36								Weight set to 0 LBS
07:37								Open well
07:37								Run in hole (RIH)
07:40								Fluid rate change - ONLINE .2 BPM
07:47								N2 rate change - ONLINE 400 SCF
08:13	-34.3			85	62	2312		RR 1.6 BPM
08:38	9.1			1153	1114	-9750		Weight check - HYD 600/ PU WEIGHT 8,500 TEN/ 800 TRAC/ 1000
09:16	2969.8			1984	993	3263		N2 rate change - 300
09:17	3011.2			1981	988	3044		Weight check - 900HYD 16K

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/17/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
09:20	3307.4			1987	966	4033		Send 5 bbl sweep
09:40	4969.8			2225	1016	9210		Weight check - 1000HYD 18K
10:04	6896.9			2454	956	9762		Weight check - 1000HYD 18K
10:14	7763.3			2627	627	11522		REACHED TD
10:15	7848.6			2607	635	10931		CIRCULATE 2 BOTTOMS UP
10:30	8272.0			2382	643	11419		RR 3.3 BPM
10:50	8222.5			2629	622	12190		N2 rate change - PUMP OFFLINE
10:52	8286.9			2584	621	11702		Fluid rate change - PUMP OFFLINE
10:59	8513.7			2467	601	13770		PU TO PACKER
11:01	8563.5			2455	607	13526		Fluid rate change - INCREASE TO 1 BPM
11:30	8939.9			2466	586	16339		SITTING ABOVE TO PACKER, FLOWING N2 OUT OF THE WELL
11:51	8623.0			2709	699	16981		Fluid rate change - INCREASE TO .75 BPM
12:22	8014.7			2809	711	17251		RR 4.1
12:29	7879.0			2646	796	17559		Fluid rate change - PUMP OFFLINE
12:30	7868.4			2651	794	17945		MANIFOLD SHUT
12:30	7864.7			2654	790	18009		Fluid rate change - PUMP ONLINE 1.5 BPM
12:34	7860.0			2639	870	16724		Run in hole (RIH) - TO BOTTOM
12:38	7860.0			2600	840	16776		Fluid rate change - INCREASE 2 BPM
12:42	7860.0			2479	692	17033		PUMPING ACID
12:56	7860.0			2397	425	16943		AT BOTTOM PERF, WAIT FOR ACID TO HIT BIT

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/17/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					
13:00	7860.0			2410	411	17033		MANIFOLD SHUT-IN
13:01	7860.0			2424	410	17148		ACID AT BIT, PU START WASHING PERFS
14:43	8423.7			7440	1029	14888		ABOVE PERFS SIT AND WAIT FOR ACID TO BE ALL GONE
14:47	8479.5			2488	1047	16853		SWAP TO WATER
15:50	7909.9			7367	1128	15954		Fluid rate change - PUMP OFFLINE
16:13	7880.7			7067	1105	17148		Pull out of hole (POOH)
17:01	2589.6			947	1031	9364		HOLE IN TUBING @3,255
17:15	1553.6			567	979	6012		HOLE @ 1,566
17:42	-0.2			101	91	6268		Shut in well
17:52	-0.3			95	87	-238189		Unflange from wellhead
18:04	-43.6			83	78	-238176		Cradle injector head
18:04	-44.8			80	72	-238176		Rig down

Job continued on next page

Job Detail Report - Coiled Tubing

Customer: Petrotek		Job Date: 11/18/2023
Well Name: WASTE DISPOSAL WELL	Well #: 1	Unit #: 276
Job Scope: Cleanout		

String Asset # : A20020	Workstring Size : 1.75"	Casing Size/Weight : 7' 26#	KOP : NA
Reel# : 13787	BHA Size and Length : 1.75" 2FT	Liner Top Size/Weight : NA TOL Depth : NA	30 deg : NA
Gooseneck Radius : 20'	Plug Type : NA	Total Depth : 10,200'	60 deg : NA
Reel to Gooseneck : 60	Fluid Type : FRESH / ACID	Tubing Size/Weight : 4.5" 11.6 # EOT Depth : 7,869'	90 deg : NA
Top of Inj. to 0 Datum : 15	Fluid PPG : 8.4	Tree Size/Rating : NA	H2S : NA Conc : NA (% / PPM)
Workstring Modifications : CUT 30'			

Time Log	Depth (FT)	Rate		Circ. Pres. (PSI)	WHP (PSI)	Weight (LBS)	Flowback Return Rate (BPM)	Detailed Work Description
		BPM	SCFM					

Cust. Representative

Attachment 4
CUDD Post Job Report

Petrotek

POST-JOB REPORT

Petrotek Engineering Corportation

HOLLY FRONTIER - MEWBOURNE WDW-1

Cleanout/Stimulation
1.750'' Coiled Tubing

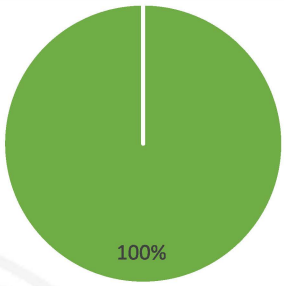
Thursday, November 16, 2023 thru Friday, November 17, 2023

Coil Tubing Supervisor(s)
Wesley Jackson
Justin Cook

Report Prepared By
Junior Mendez

Job Duration - Total Time, NPT and Net Productive Time

Job Start	Thursday, November 16, 2023	6:30
Job Finish	Friday, November 17, 2023	18:04
Job Duration	35.57 hours	
Standby Time	0.00 hours	
Downtime	0.00 hours	
Non Productive Time	0.00 hours	
Net Productive Time	35.57 hours	
RIH to Bump-Up	33.25 hours	



Rig Up

Rig-up Begin	Thursday, November 16, 2023	7:00
Start Pressure Test	Thursday, November 16, 2023	9:10
Finish Pressure Test	Thursday, November 16, 2023	9:22
Start Standby		
End Standby		
Start RIH	Thursday, November 16, 2023	8:25
Pressure Testing	0.20 hours	
Standby to RIH	0.00 hours	
Time for Rig-up	1.2 hours	

Not included in total rig-up time.

Well Data (From Field Job Detail Report)

Well Name	HOLLY FRONTIER - MEWBOURNE WDW-1		
Depth (TD)	10200 ft	Multi-Well Pad	NO

Casing Data

#1	7 "	26 #	from	0	to	10200	ft
#2	4.5 "	11.6 #	from	0	to	7869	ft
#3							

Downtime, NPT and list of Events

Any HSE incidents pertaining to a job will be summarized in this section as an Event, but details will be provided in a separate report

Event Description	Start : Date & Time		End : Date & Time	Duration

Weather Downtime	0.0	**NPT**	0.0
Standby Time	0.0	**General Downtime**	0.0

Pressure Stats

Wellhead			**Circulating**		
Min	45.6	psi	Min	76.0	psi
Max	2849.5	psi	Max	8154.7	psi
Average	898.5	psi	Average	3290.3	psi

Force Stats

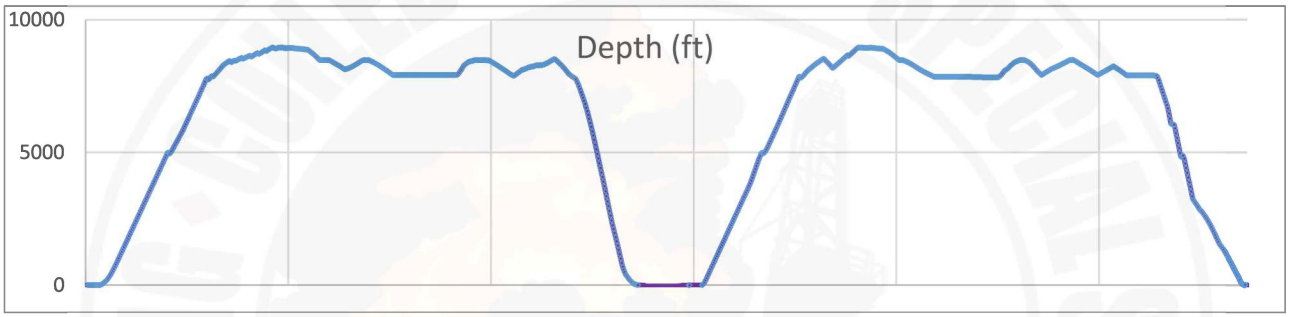
Max Recorded Snub Force	-14233	lbf	Max Recorded Pull Force	20154	lbf

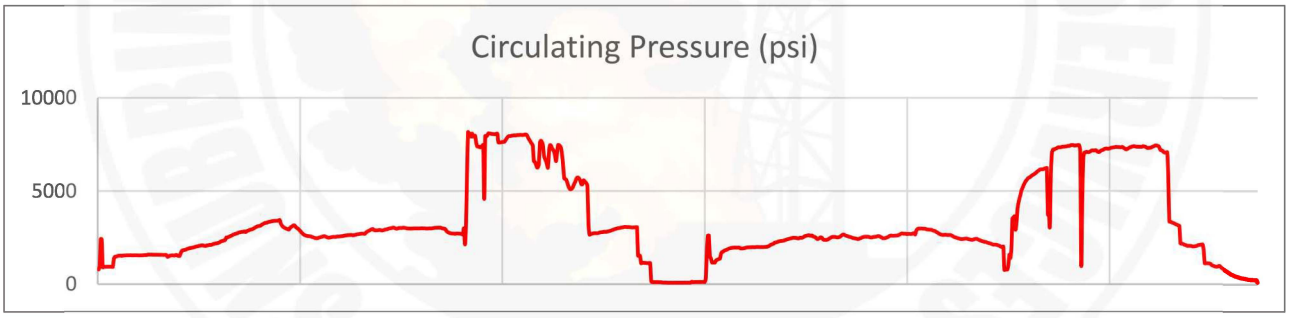
Speed Stats

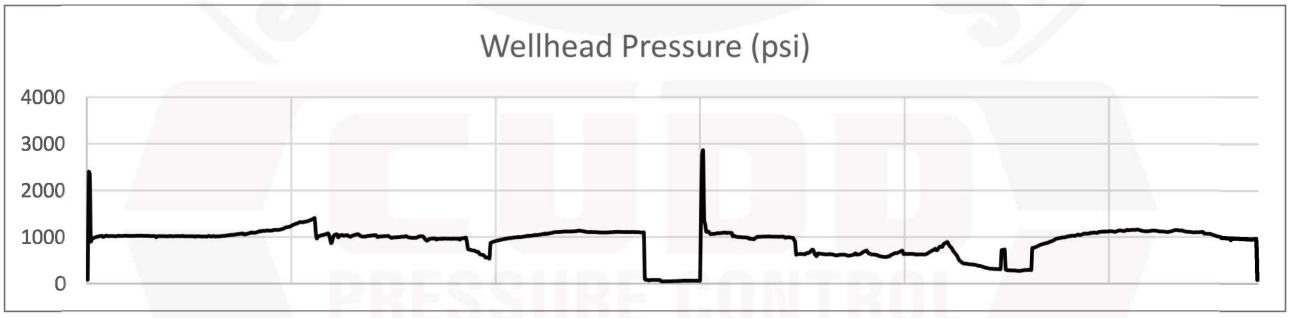
	Maximum		**Average**	
Instantaneous (Total Record)	209.45	ft/min	39.61	ft/min
Instantaneous (RIH to Bump-Up)	209.45	ft/min	39.74	ft/min
Lateral (POOH)	0.00	ft/min		ft/min
Lateral (RIH)	0.00	ft/min		ft/min
Vertical (POOH)	194.72	ft/min	51.17	ft/min
Vertical (RIH)	110.48	ft/min	46.57	ft/min

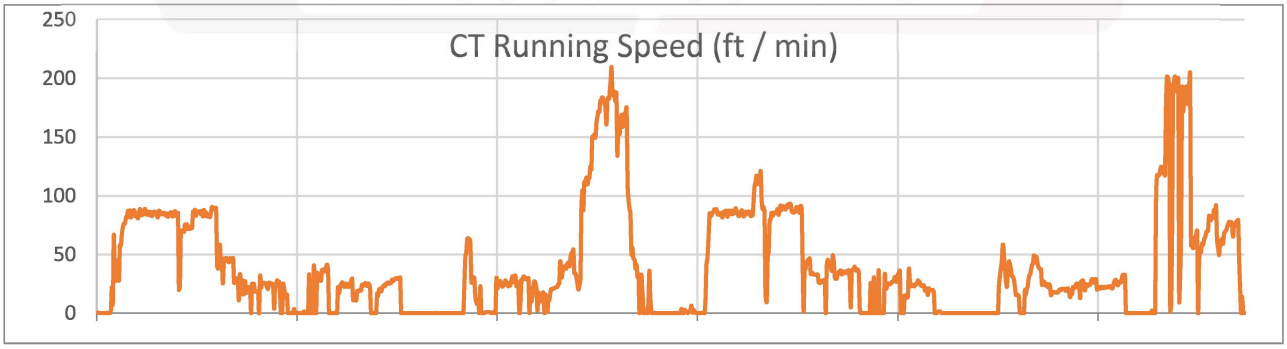
Note : "Instantaneous" speed is taken directly from the Speed channel of the job record where samples are taken at one second interals. All other speed values are calculated and averaged using the recorded distance and time channels so they will tend to have maximums lower than the instantaneous values.

Field Data Plots (Job Start - Finish)

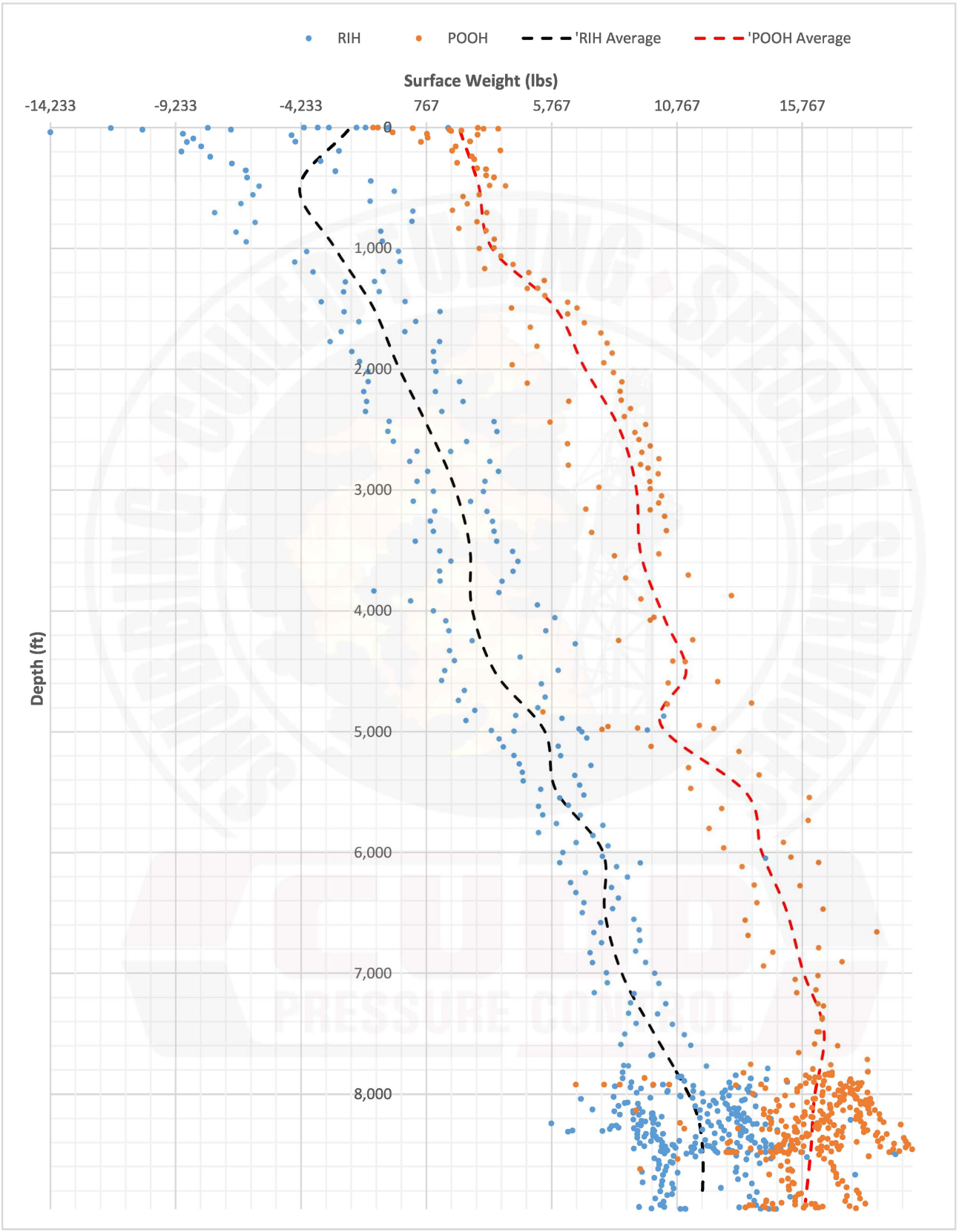








Surface Weight vs. Depth

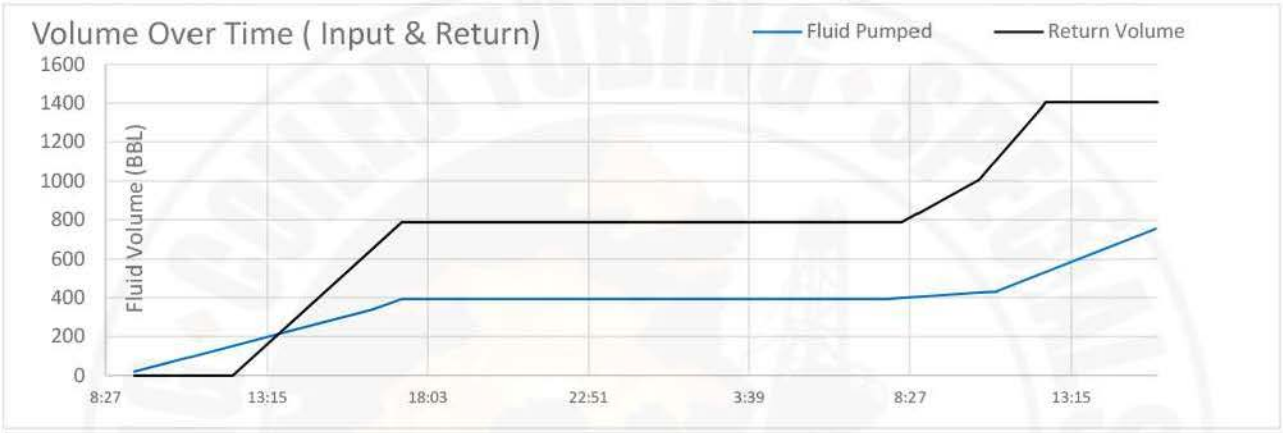


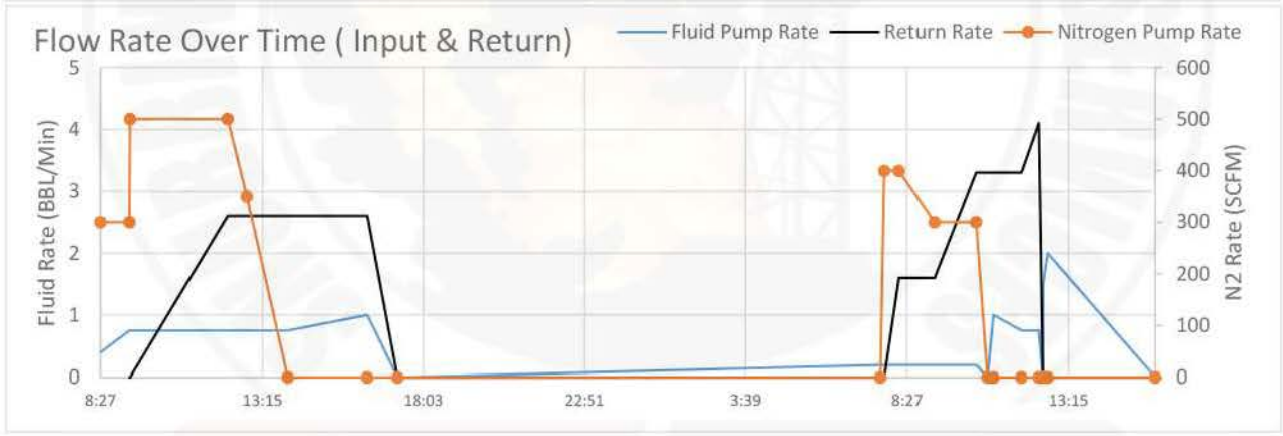
Fluid / Nitrogen Pump Stats & Flowback Return

NOTE : All Pump Volumes & Rates Are Approximated
Values come from Job Detail Report records. Recorded N2 rates and volumes do not include vent loss, cool down, transfer or idle periods.

All Approximated Totals Are Rounded
Nitrogen (Up to nearest multiple of 50,000 SCF)
Fluid (Up to nearest multiple of 50 BBL)

Total Fluid Pumped	750 BBL	**Min Fluid Rate**	0.00 BBL / Min
Total N2 Pumped	250000 SCF	**Min N2 Rate**	0.00 SCFM
Total Return Volume	1450 BBL	**Min Return Rate**	0.00 BBL
Average Fluid Rate	0.37 BBL / Min	**Max Fluid Rate**	2.00 BBL / Min
Average N2 Rate	89.64 SCFM	**Max N2 Rate**	500.00 SCFM
Average Return Rate	1.00 BBL / Min	**Max Return Rate**	4.10 BBL / Min





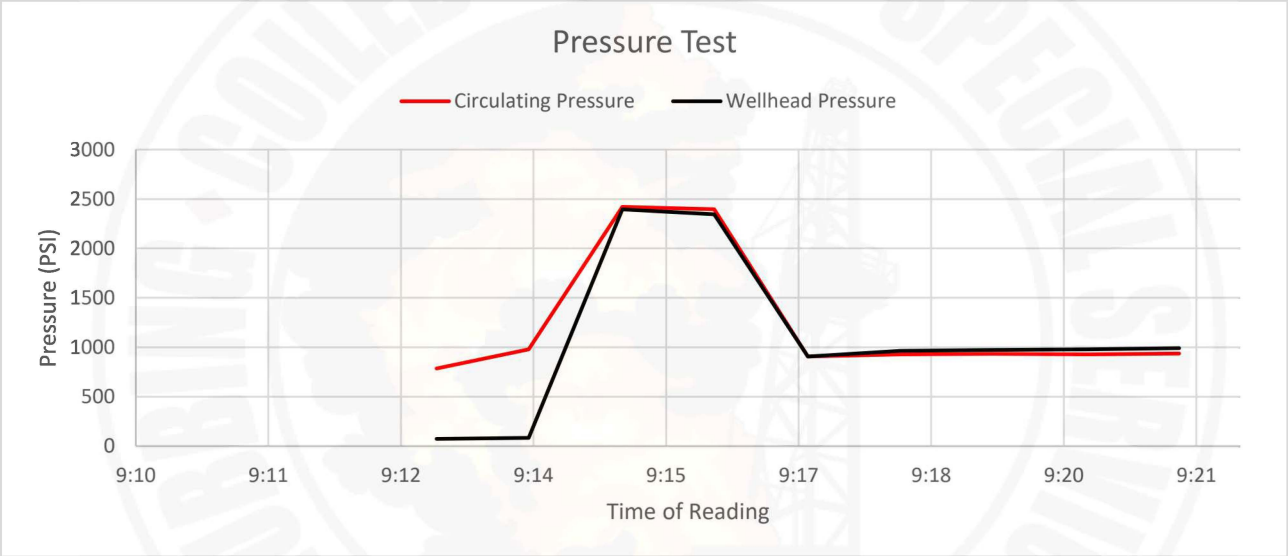
Pressure Test

Start / Finish based on JDR time record

From 9:10
To 9:22

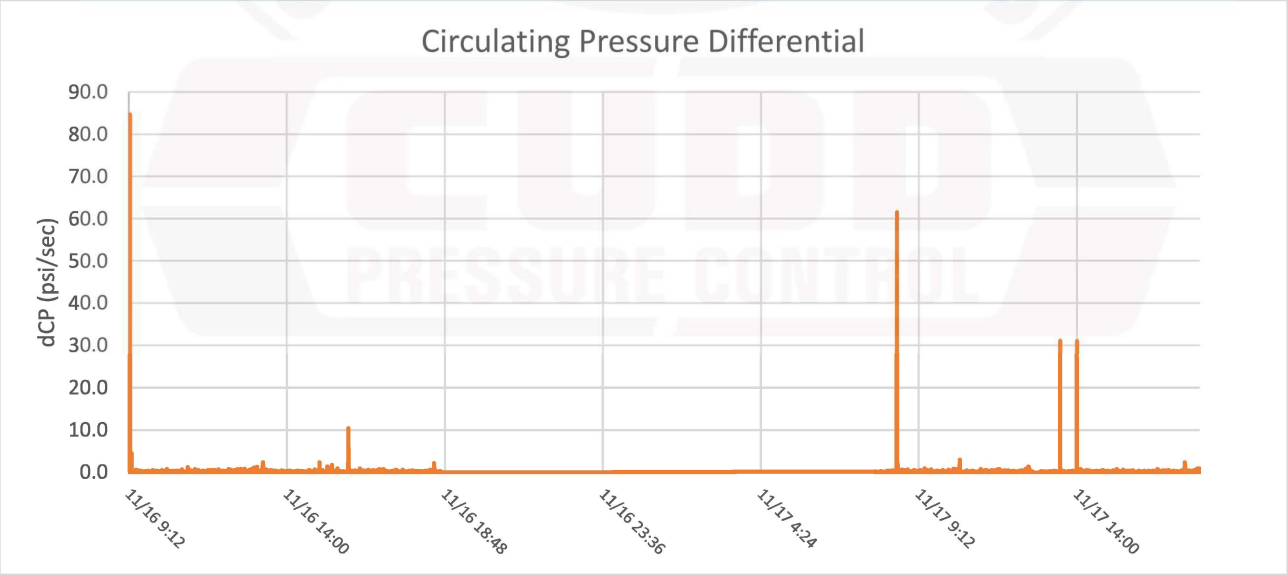
Tested To 2420 PSI

Stress Duration
Over 1000 PSI for 2 Minutes
Over 2000 PSI for 2 Minutes

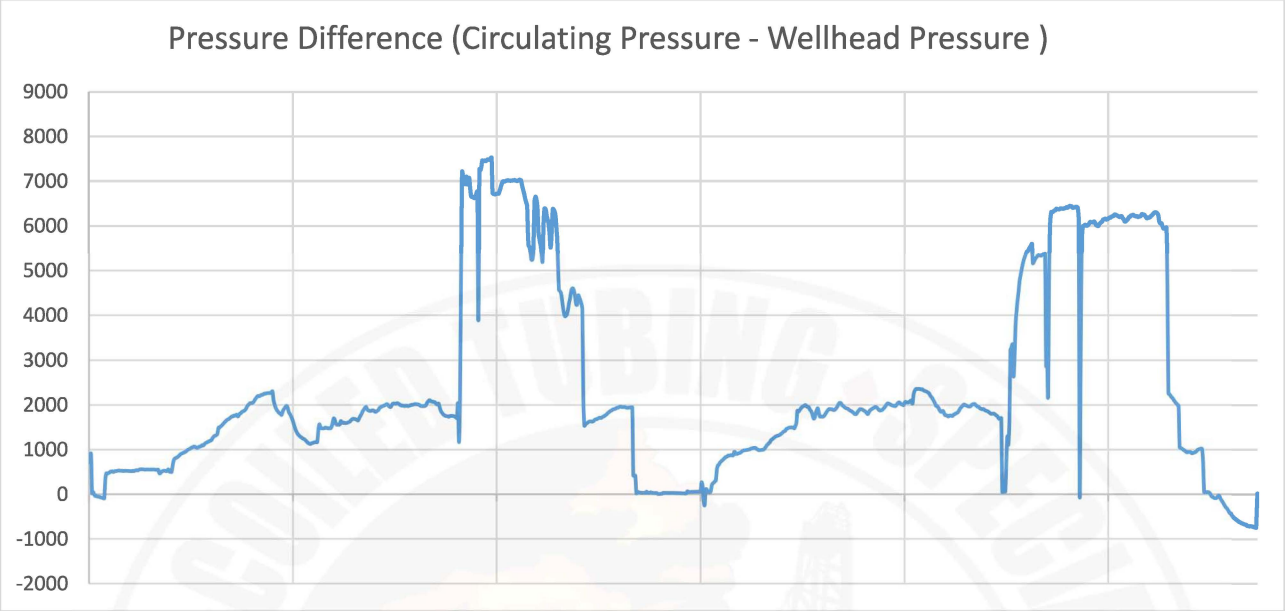


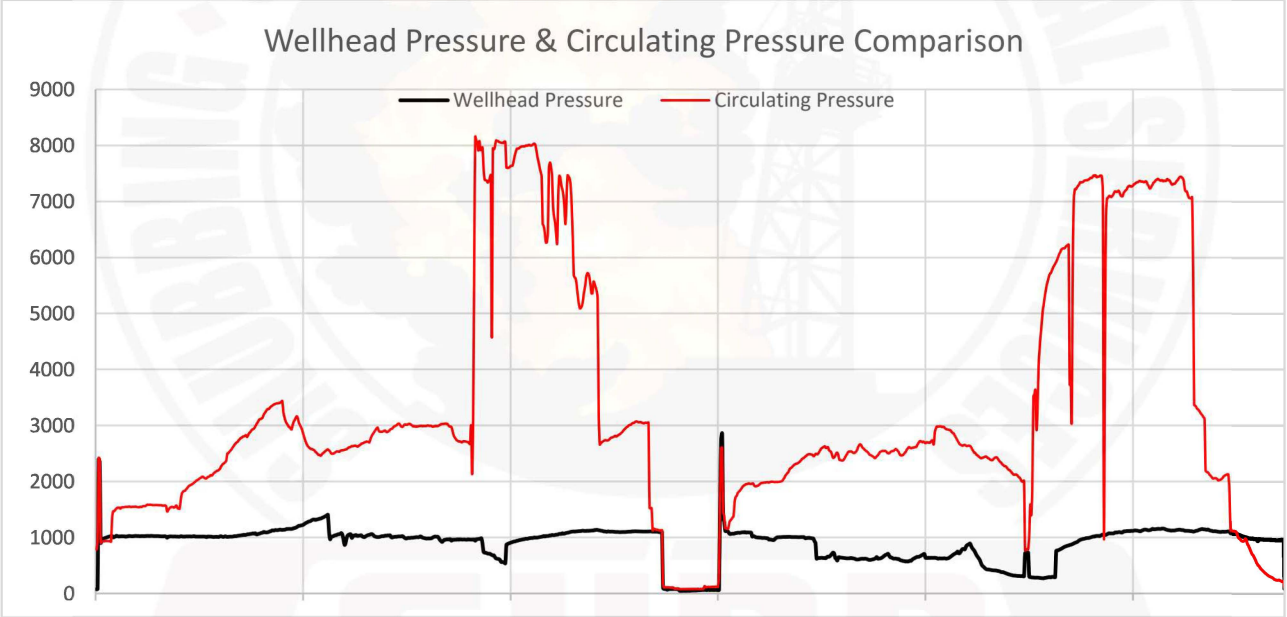
Circulating Pressure Differential

The circulating pressure varies over the course of normal operations; For the purposes of this report the Pressure Differential is defined as the rate of change in pressure at any given point in the recorded data. Larger values indicate rapid (or sudden) changes in pressure.



Pressure Difference (CP - WHP)





Minimum Pressure Difference	-742 psi
Maximum Pressure Difference	7527 psi
Average Pressure Difference	2392 psi

Negative values imply WHP > CP

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 297764

COMMENTS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 297764
	Action Type: [C-103] Sub. Workover (C-103R)

COMMENTS

Created By	Comment	Comment Date
cchavez	Post Well Stimulation Report	1/3/2024

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CONDITIONS

Action 297764

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CONDITIONS

Created By	Condition	Condition Date
cchavez	None	1/3/2024