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

District II 811 S. First St., Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

1220 S. St. Francis

### State of New Mexico Energy, Minerals & Natural Resources

Submit one copy to appropriate District Office

Oil Conservation Division 1220 South St. Francis Dr.

AMENDED	DEDODT
 AWICKLICA	KEPUKI

Form C-104

Revised August 1, 2011

Dr., Santa Fe, NM 87505	Santa Fe, NM 87505	Ц
I DECLIEST FOR	ALLOWADIE AND AUTHODIZATION T	O TO A NO

1. 1	EQUEST FOR ALL		MEMILION	IO IIMEIDIONI	
<sup>1</sup> Operator name and Add	ress	HOBBS 0	COGRID Numb	er	
COG Operating LLC				229137	
2208 W Main Street		NOV <b>0 9</b> 201	<sup>3</sup> Reason for Fil	ing Code/ Effective Date	
Artesia, NM 88210		. 0 - 201	N	w	
<sup>4</sup> API Number	<sup>5</sup> Pool Name	RECEIVE	· F	<sup>6</sup> Pool Code	
30 - 025-44303	Bradley; Bone Spring	WINCE INE	U	7280	
<sup>7</sup> Property Code	8 Property Name			<sup>9</sup> Well Number	
320525		Tigercat Federal Com		2H	

II. 10 Surface Location

Ul or lot no	Section	Township	Range	Lot Idn	Feet from the	North/SouthLine	Feet from the	East/West line	County
В	8	26S	33E		355	North	1650	East	Lea

11 Bottom Hole Location

UL or lot no	Section	_	_	Lot Idn		North/South	line	Feet from the			County
О	17	26S	33E		419	South		1659	Ea	ıst	Lea
12 Lse Code		ing Method	14 Gas Connection Date		<sup>15</sup> C-129 Pern	C-129 Permit Number 16 C		<sup>16</sup> C-129 Effective Date		<sup>17</sup> C-12	9 Expiration Date
. <b>F</b>	,	Code F	Da  9/25								

III Oil and Cas Transporters

<sup>18</sup> Transporter OGRID	<sup>19</sup> Transporter Name and Address	<sup>20</sup> O/G/W
	Alpha Crude Connector Pipeline	O
298751	Energy Transfer 2001 Bryan Street Ste., 3700	G
	Dallas, TX 75201	
	; 	

IV. Well Completion Data

<sup>21</sup> Spud Date 1/21/18	<sup>22</sup> Ready Date 9/20/18	<sup>23</sup> TD 20302	<sup>24</sup> PBTD 20200	<sup>25</sup> Perforations 10,461-20,105	<sup>26</sup> DHC, MC		
<sup>27</sup> Hole Size	<sup>28</sup> Casing	& Tubing Size	<sup>29</sup> Depth Set		30 Sacks Cement		
17 1/2		13 3/8	905'		750		
12 1/4	12 1/4 9 5/8		4807'		1550		
8 3/4	:	5 1/2	19876		3150		
		2 7/8	9680				

V. Well Test Data

<sup>31</sup> Date New Oil 9/25/18			<sup>34</sup> Test Length 24 Hrs	35 Tbg. Pressure 800	<sup>36</sup> Csg. Pressure 1650			
<sup>37</sup> Choke Size 28/64	<sup>38</sup> Oil 60							
been complied with complete to the best Signature:  Printed name:	at the rules of the Oil Cons and that the information give of my knowledge and belief	ven above is true and ef.	Approved by:  Title:  OIL CONSERVATION DIVISION  Approved by:  Aren Sharp					
Amanda Avery Title: Regulatory Tech II E-mail Address: aavery@concho.com Date:	Phone:		Approval Date:	9-18				
11/05/18								

# Form 3160-5 (June 2015) UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY Do not use thi abandoned we		NMNM0160973  6. If Indian, Allottee or Tribe Name				
SUBMIT IN	TRIPLICATE - Other instruct	ions on page 2	7. If Unit or CA/A	greement, Name and/or No.		
Type of Well     ☐ Gas Well ☐ Oth	ner			8. Well Name and No. TIGERCAT FEDERAL COM 2H		
2. Name of Operator COG OPERATING LLC	·	ANDA AVERY	9. API Well No. 30-025-4430	<del></del> 3		
3a. Address 2208 W MAIN STREET ARTESIA, NM 88210		Phone No. (include area code): 575-748-6940		or Exploratory Area SONE SPRING		
4. Location of Well (Footage, Sec., T Sec 8 T26S R33E NWNE 355 32.064315 N Lat, 103.591101	FNL 1650FEL		11. County or Pari	·		
12. CHECK THE AF	PPROPRIATE BOX(ES) TO	INDICATE NATURE O	F NOTICE, REPORT, OR O	THER DATA		
TYPE OF SUBMISSION		ТҮРЕ ОР	ACTION			
■ Notice of Intent	☐ Acidize	□ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off		
_	☐ Alter Casing	☐ Hydraulic Fracturing	□ Reclamation	■ Well Integrity		
☐ Subsequent Report	Casing Repair	■ New Construction	☐ Recomplete	Other		
☐ Final Abandonment Notice	☐ Change Plans	□ Plug and Abandon	☐ Temporarily Abandon			
	☐ Convert to Injection	☐ Plug Back	■ Water Disposal			
Attach the Bond under which the wor following completion of the involved testing has been completed. Final Abdetermined that the site is ready for final of the completed of the complete	operations. If the operation results i pandonment Notices must be filed onlinal inspection.  O# Set CBP @ 19,800' and terestable and the set CBP @ 19,800'. Acdz w/1 out CFP's. Clean down to 19, tbg @ 9680 ' @ packer @ 96 & testing. Date of first productions.	n a multiple completion or recolly after all requirements, including st csg to 8542#. Good temperature of the first state of th	mpletion in a new interval, a Form ing reclamation, have been completed.  st.  1/18,767,400#	3160-4 must be filed once		
	Electronic Submission #4428: For COG OPE	38 verified by the BLM Wel RATING LLC, sent to the H	I Information System lobbs			
Name (Printed/Typed) AMANDA	AVERY	Title AUTHO	RIZED REPRESENTATIVE			
Signature (Electronic S	Submission)	Date 11/06/20	018			
	THIS SPACE FOR F	EDERAL OR STATE	OFFICE USE			
Approved By		Title		Date		
Conditions of approval, if any, are attache certify that the applicant holds legal or equivalent would entitle the applicant to conductive the	iitable title to those rights in the subje	varrant or		•		
Title 18 U.S.C. Section 1001 and Title 43 States any false, fictitious or fraudulent			willfully to make to any departmen	t or agency of the United		

Form 3160-4 (August 2007)

## UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB No. 1004-0137 Expires: July 31, 2010

### WELL COMPLETION OR RECOMPLETION REPORT AND LOG

	VVELL	JOIVIPL	ETION	K KEC		IION R	EPUR	I AND L	.00			MNM0160		
la. Type of b. Type of	Well  Completion	Oil Well	_	Well 🔲 Work (	•	Other Deepen	☐ Ph	ıg Back	☐ Diff.	Resvr.		<u> </u>		Tribe Name
	•	_	r								7. U	nit or CA A	greem	ent Name and No.
2. Name of COG O	Operator PERATING	LLC	. Е	-Mail: aav		t: AMANI cho.com	A AVER	Y			8. Le T	ase Name a	nd We FEDE	ell No. ERAL COM 2H
3. Address	2208 W M ARTESIA						. Phone N n: 575-74	No. (include 48-6940	e area cod	e)	9. A	PI Well No.		30-025-44303
		T26S R33	3E Mer NM	P			-	ts)*				ield and Po		
At surface NWNE 355FNL 1650FEL 32.064315 N Lat, 103.591101 W Lon Sec 8 T26S R33E Mer NMP										11. S	Sec., T., R., I	M., or 8 T2	Block and Survey 6S R33E Mer NMP	
At top prod interval reported below NWNE 355FNL 1650FEL 32.064315 N Lat, 103.591101 W Lon Sec 17 T26S R33E Mer NMP At total depth SESE 419FSL 1659FEL 32.037423 N Lat, 103.591136 W Lon									UII		County or Pa	ırish	13. State NM	
14. Date Sp 02/22/2	oudded		15. Da	ate T.D. Re /15/2018			16. Dat	te Complete	ed Ready to	Prod.	17. I		OF, KI 2 GL	3, RT, GL)*
18. Total D	epth:	MD TVD	19876 10341		. Plug Ba	ck T.D.:	MD TVD		601 341	20. Dep	th Bri	dge Plug Se		MD 19800 TVD 10341
21. Type El	lectric & Oth	er Mechar	nical Logs R	un (Submit	copy of e	ach)			Was	well cored DST run?	l? vev?	No [	🕽 Yes	(Submit analysis) (Submit analysis) (Submit analysis)
23. Casing an	d Liner Reco	ord (Repo	rt all strings	set in well)										(2 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Hole Size	Size/G	rade	Wt. (#/ft.)	Top (MD)	Botto (MI		e Cemente Depth		of Sks. & of Cement	Slurry (BB		Cement T	op*	Amount Pulled
17.500		375 J55	54.5			905 750						0		
12.250	<del> </del>	625 J55	40.0			4807 1550							0	
8.750	5.50	00 P110			15	876			315	50			0	
	<u> </u>													
24. Tubing		m)   n	1 7 4	(147)	<u>.                                     </u>	D 41.6.4	(A (D) T	n 1 n	.1. (1.472)	T 6:	T 5	4.6.00	<u> </u>	D 1 D 4 (4/D)
Size 2.875	Depth Set (N	1D) Pa	cker Depth	9664	Size	Depth Set	(MD)	Packer De	ptn (MD)	Size	De	pth Set (MI	"	Packer Depth (MD)
25. Produci		-				26. Perfo	ration Rec	cord		-1	•			
Fo	rmation		Тор	E	ottom		Perforate	d Interval		Size	1	lo. Holes		Perf. Status
<u>A)</u>	BONE SPI	RING	1	0438	19775	<u> </u>		10438 TC	19775			1620		
B)		-		-							-			
_D)								_						
	acture, Treat					•	·		•					
1	Depth Interva						I	Amount and	d Type of	Material				
	1034	8 TO 197	75 SEE AT	TACHED										
29 Producti	ion - Interval	٨												
Date First	Test	Hours	Test	Oil	Gas	Water	Oil	Gravity	Gas		Producti	ion Method		· · ·
Produced 09/25/2018	Date 09/25/2018	Tested 24	Production	BBL 60.0	мсғ 275.0	BBL	Corr	r. API	Grav	ity	1	EI ECTRIC I	DI IMED	SUB-SURFACE
Choke	Tbg. Press.	Csg.	24 Hr.	Oil	Gas	Water	Gas	:Oil	Well	Status		ELECTRIC	OWIF	30B-30KI ACE
Size 28/64		Press. 1650.0	Rate	BBL 60	мсғ 275	BBL 24	Rati	0		POW				
	tion - Interva						<u>L_</u>							<del> </del>
Date First	Test	Hours	Test	Oil	Gas	Water		Gravity	Gas		Product	on Method		
Produced ?	Date	Tested	Production	BBL	MCF	BBL	Corr	r. API	Grav	ity				
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas: Rati		Well	Status				

280. Produce  Date First  Produced  Choke	Test Date	Hours Tested	Test	Oil	Gas	Water	Oil Gravity			16 1 2 22 2		
Produced							Oll Graviiv	Gas		Production Method		
'hoke	i		Production	BBL	MCF	BBL	Corr. API	Grav		r roduction rection		
Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well	Status			
28c. Produc	ction - Inter	val D			1	!						
Date First	Test	Hours	Test	Oil	Gas	Water	Oil Gravity	Gas		Production Method		
Produced	Date	Tested	Production	BBL	MCF	BBL	Corr. API	Grav	rity			
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Weli	I Status			
29. Disposi SOLD	ition of Gas	Sold, used	for fuel, ven	ted, etc.)								
30. Summa	ry of Porou	s Zones (Ir	iclude Aquife	ers):					31. Fo	rmation (Log) Markers		
tests, in	ll important icluding dep overies.	zones of p th interval	orosity and c tested, cushi	ontents ther on used, tim	eof: Corec e tool ope	d intervals an n, flowing ar	d all drill-stem nd shut-in pressure	es				
F	Formation		Тор	Bottom		Descript	ions, Contents, et	c.		Name	To Meas. I	•
RSLR TOS BOS BOS BLCN FBSG	onal remarks	(include p	874 1201 4658 4896 4920 9962	edure):					TC BC LN BL	SLR DS DS MAR CN BSG	874 120 465 489 499 996	01 58 96 20
1. Elec		anical Log	s (1 full set reg	• /		2. Geolog 6. Core A	-		DST Re	eport 4.	Directional Survey	;y
34. I hereby	y certify tha	t the foreg	-	ronic Subn	nission #4	42834 Verifi	orrect as determined by the BLM VG LLC, sent to	Vell Infor	mation S	e records (see attached system.	instructions):	
Name (j	please print	) <u>AMAND</u>	A AVERY	_						PRESENTATIVE		
Signatu	ıre	(Electro	nic Submiss	ion)			Date <u>'</u>	11/06/201	8			
3												

Tigercat Federal	Com #3H
------------------	---------

<u>Perfs</u>	7 1/2% Acid (Gal)	<u>Sand (#)</u>	Fluid (Gal)		
1	22260	361983	633042.9		
2	2268	309404	403914		
3	2268	289693	304521.84		
4	2268	359815	408492		
5	3024	359600	427350		
6	3024	360140	443856		
7	3024	358473	457842		
8	3192	369503	431088		
9	3024	356998	440538		
10	3024	360133	488427.24		
11	16632	360031	492030		
12	3024	360930	433440		
13	4032	357670	444948		
14	3024	362274	440748		
15	3024	342006	430164		
16	3024	356640	408408		
17	3024	315068	415296		
18	3024	359473	453600		
19	3024	353255	391482		
20	3024	350226	510090		
21	3024	352990	596064		
22	2268	355990	480606		
23	3024	360082	428484		
24	3024	363015	560322		
25	3024	373712	522984		
Totals	106,596	8,809,104	10,814,695		

		Stage 1	Distance Between Perfs	Shots	Stage 2	Distance Between Perfs	Shots	Stage 3	Distance Between Perfs	Shots	Stage 4	Distance Between Perfs	Shots	Stage 5	Distance Between Perfs	Shots
		17,422	20	5	17,259	28	5	17,079	23	5	16,898	27	5	16,719	23	5
		17,402	20	5.	17,242	28	5	17,056	22	5	16,876	23	5	16,700	27	5
	From	17,382	20	4	17,214	22	1.4	17,034	- 23	4	16,853	22	4	16,673	25	4
	Bottom to	17,362	. 20	. 4	17,192	23	4	17,011	19	4	16,831	23	4	16,648	20	4.
: .	Тор	17,342	15	3 .	17,169	22	3	16,992		3	16,808	22	3	16,628	23	3
	,	17,327	25	3.	. 17,147	23	3	16,966	25	3 :	16,786	23	3	16,605	22	3
															23	3
		. 17,302	15	3	17,124	22	3	16,941	16	3	16,763	21	3	16,583	. 23	-
		17,287		. 3	17,102		3	16,925		3	16,742		3	16,560		3,
:	<u> </u>	Plug to Plu	68	30	Plug to Plug	75	30	lug to Plu	79	30	lug to Plu	84	30	Plug to Plug	79	30
:		Frac Plug	17,430	Total Shots	Frac Plug	17,267	Total Shots	Frac Plug	17,090	Total Shots	Frac Plug	16,915	Total Shots	Frac Plug	16,727	Total Sho
		Stage 6	Distance Between	Shots	Stage 7	Distance Between	Shots	Stage 8	Distance Between	Shots	Stage 9	Distance Between	Shots	Stage 10	Distance Between	Shots
1:			Perfs			Perfs			Perfs			Perfs			Perfs	
:: :-		16,537	23 :	. 5	16,357	26	. 5	16,176	28	5	15,996	23	: 5	15,805	33	:5
		16,515	. 23 : .	5	16,334	22 :	5	16,150	19***	5	15,973	21. : :	: 5	15,785	15	2257.1
	From	16,492	22	4.	16,312	23	4 .	16,131	22	4	15,952	. 24	4	15,770	27	4
	Bottom to	16,470	28	4.	16,289	22	4	16,109	23	4	.15,928	27	4 .	:15,743.	18	4
	Тор	16,442	17.	3	16,267	. 22	. 3	16,086	22	3	15,901	18	3	15,725	24	3
	[: :	16,425	25	3	16,245	23	: -3	16,064	23	3	15,883	23	3	15,701	21	3
: .	ľ	16,400	17	3	16,222	18	3	16,041	22	3	15,860	22	3	15,680	22	3
:	l · ·	3-7-2-7 E-10-11	11			10		A 9 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 .					3		- 22	4000
		16,383		3	16,204		3 -	16,019		3	15,838			15,658	<u> </u>	3
		Plug to Plug	75	30	Plug to Plug	84	30	Plug to Plu	69		lug to Plu	79	30	Plug to Plu	72	30
		Frac Plug	16,545	Total Shots	Frac Plug	16,373	Total Shots	Frac Plug	16,178	Total Shots	Frac Plug	16,007	Total Shots	Frac Plug	15,815	Total Sh
			·· · ·	-1.1												
. :		Stage 11	Distance Between	Shots	Stage 12	Distance Between	Shots	Stage 13	Distance Between	Shots	Stage 14	Distance Between	Shots	Stage 15	Distance Between	Shots
	1	15 605	Perfs	5	15,449	Perfs 28	5	:15,271	Perfs 26	5	15,093	Perfs	5 -	14,904	Perfs 32	5.
		15,635	23									23				****
	E	15,612	22	5	15,432	23	5	15,253	24	5	15,071	19	5	14,890	22	5
	From	15,590	23	4	15,409	22	4	15,229	25	4	15,052	26	. 4	14,868	23	. 4
	Bottom to	15,567	22													4
	ITam	,	22	- 4	15,387	23	. 4	15,204	20	. 4	15,026	26	4	14,845	22	
:	Тор	15,545	23	3	15,387 15,364	23	3	15,204 15,184	20 23	3	15,026 15,000	26 19	3	14,845 14,823	22 22	3
:	Тор															
:	Тор	15,545 15,522	23 21	3	15,364 15,342	22 23	3	15,184 15,161	23 22	3	15,000	19	3	14,823 14,801	22	3
	Тор	15,545 15,522 15,501	23	3 3 3	15,364 15,342 15,319	- 22	3 3. 3	15,184 15,161 15,139	23	3 3 3	15,000 14,981 14,957	19 24	3 3. 3	14,823 14,801 14,778	22 23	3 3 3
	Тор	15,545 15,522 15,501 15,477	23 21 24	3 3 3	15,364 15,342 15,319 15,297	22 23 22	3 3 3 3	15,184 15,161 15,139 15,116	23 22 23	3 3 3	15,000 14,981 14,957 14,936	19 24 21	3 3 3 3	14,823 14,801 14,778 14,761	22 23 17	3 3 3
	Тор	15,545 15,522 15,501 15,477 Plug to Plus	23 21 24 79	3 3 3 3	15,364 15,342 15,319 15,297 Plug to Plu	22 23 22 79	3 3 3 3 30	15,184 15,161 15,139 15,116 Plug to Plu	23 22 23 76	3 3 3 3	15,000 14,981 14,957 14,936 Plug to Plu	19 24 21 <b>79</b>	3 3 3 3	14,823 14,801 14,778 14,761 Plug to Plu	22 23 17 <b>67</b>	3 3 3 3
	Тор	15,545 15,522 15,501 15,477	23 21 24	3 3 3 3	15,364 15,342 15,319 15,297	22 23 22 79	3 3 3 3	15,184 15,161 15,139 15,116 Plug to Plu	23 22 23 76	3 3 3	15,000 14,981 14,957 14,936 Plug to Plu	19 24 21 <b>79</b>	3 3 3 3	14,823 14,801 14,778 14,761 Plug to Plu	22 23 17 <b>67</b>	3 3 3 3
	Тор	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug	23 21 24 	3 3 3 3 30 Total Shots	15,364 15,342 15,319 15,297 Vug to Plug Frac Plug	22 23 22 79 15,466	3 3 3 3 30 Total Shots	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug	23 22 23 76 15,280	3 3 3 30 Total Shots	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug	19 24 21 79 15,105	3 3 3 3 30 Total Shots	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug	22 23 17 67 14,912	3 3 3 3 30 Total Sh
	Top	15,545 15,522 15,501 15,477 Plug to Plus	23 21 24 79 15,646 Distance Between	3 3 3 3	15,364 15,342 15,319 15,297 Plug to Plu	22 23 22 79 15,466 :	3 3 3 3 30	15,184 15,161 15,139 15,116 Plug to Plu	23 22 23 76 15,280 Distance Between	3 3 3 3	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug	19 24 21 79 15,105	3 3 3 3	14,823 14,801 14,778 14,761 Plug to Plu	22 23 17 67 14,912 Distance Between	3 3 3 30 Total Sh
	Top	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug	23 21 24 79 15,646 Distance Between Perfs	3 3 3 3 7 30 Fotal Shots	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17	22 23 22 79 15,466 Distance Between Perfs	3 3 3 3 30 Total Shots	15,184 15,161 15,139 15,116 Plug to Plu Frac Plug Stage 18	23 22 23 76 15,280 Distance Between Perfs	3 3 3 30 Total Shots	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19	19 24 21 79 15,105 Distance Between Perfs	3 3 3 3 Total Shots	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20	22 23 17 67 14,912	3 3 3 30 Total Sh
	Top	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16	23 21 24 79 15,646 Distance Between Perfs 29	3 3 3 3 30 Total Shots	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552	22 23 22 79 15,466 Distance Between Perfs 23	3 3 3 3 Total Shots Shots	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18	23 22 23 76 15,280 Distance Between	3 3 3 3 30 Total Shots	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19	19 24 21 79 15,105  Distance Between Perfs 26	3 3 3 3 30 Total Shots	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20 14,010	22 23 17 67 14,912 Distance Between Perfs	3 3 3 30 Total Sh
	From	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709	23 21 24 79 15,646 Distance Between Perfs 29 22	3 3 3 30 Total Shots Shots	15,364 15,342 15,319 15,297 Yug to Plug Frac Plug Stage 17 14,552 14,529	22 23 22 79 15,466 Distance Between Perfs 23 22	3 3 3 3 30 Total Shots Shots	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349	23 22 23 76 15,280 Distance Between Perfs 24 23	3 3 3 30 Total Shots Shots 5 5	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168	19 24 21 79 15,105  Distance Between Perfs 26 22	3 3 3 3 30 Total Shots Shots	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20 14,010 13,988	22 23 17 67 14,912 Distance Between Perfs 23 23	3 3 3 3 30 Total Sh
		15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709	23 21 24 79 15,646 Distance Between Perfs 29 22 22	3 3 3 30 Fotal Shots Shots 5 5	15,364 15,342 15,319 15,297 Var to Plug Frac Plug Stage 17 14,552 14,529 14,507	22 23 22 79 15,466 Distance Between Perfs 23 22 23	3 3 3 30 Total Shots Shots 5 5	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326	23 22 23 76 15,280 Distance Between Perfs 24 23 22	3 3 3 3 30 Total Shots  Shots  5 5 4	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,146	19 24 21 79 15,105.  Distance Between Perfs 26 22 19	3 3 3 30 Total Shots Shots 5 5	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20 14,010 13,988 13,965	22 23 17 67 14,912 Distance Between Perfs 23 23 22	3 3 3 3 3 3 5 5 5 5 4
	From	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687	23 21 24 79 15,646 Distance Between Perfs 29 22 22 23	3 3 3 30 Fotal Shots Shots 5 5	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484	22 23 22 79 15,466 Distance Between Perfs 23 22 23 22	3 3 3 3 3 3 5 5 5 4 4 4	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,304	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23	3 3 3 3 30 Total Shots  Shots  5 5 4 4	15,000 14,981 14,936 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,146 14,127	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26	3 3 3 30 Total Shots Shots 5 5 4	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20 14,010 13,988 13,965 13,943	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23	3 3 3 3 3 3 5 5 5 5 4 4 4
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,683 14,665 14,642	23 21 24 79 15,646 Distance Between Perfs 29 22 22 23 22	3 3 3 3 3 3 5 Fotal Shots Shots 5 4 4 4 3	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484 14,462	22 23 22 79 15,466 Distance Between Perfs 23 22 23 22 23 22 23	3 3 3 3 30 Total Shots Shots 5 5 4 4	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,304 14,281	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 22	3 3 3 3 3 30 Total Shots  Shots 5 5 4 4 4 3 3	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,146 14,127 14,101	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26	3 3 3 3 30 Total Shots Shots 5 5 4 4 3	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20 14,010 13,988 13,985 13,943 13,920	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22	3 3 3 3 30 Total Sh Shots 5 5 4 4 4 3
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,685 14,665 14,642 14,620	23 21 24 79 15,646 Distance Between Perfs 29 22 22 22 23 22 23	3 3 3 3 30 Total Shots Shots 5 5 4 4 3	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484 14,462 14,439	22 23 22 79 15;466 Distance Between Perfs 23 22 23 22 23 19	3 3 3 3 3 3 7 Total Shots Shots 5 5 4 4 3	15,184 15,161 15,139 15,119 Hug to Plug Frac Plug Stage 18 14,370 14,349 14,324 14,324 14,259	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 22 23 22 23	3 3 3 3 30 Total Shots Shots 5 5 4 4 3	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,168 14,127 14,101 14,075	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26 19	3 3 3 3 30 Total Shots Shots 5 5 4 4 3	14,823 14,801 14,778 14,761 14,761 19ug to Plug Frac Plug Stage 20 14,010 13,988 13,983 13,943 13,920 13,898	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 23 22 23	3 3 3 3 30 Total Sh Shots 5 5 4 4 4 3
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,662 14,620 14,597	23 21 24 79 15,646 Distance Between Perfs 29 22 22 23 22	3 3 3 3 30 Total Shots Shots 5 5 4 4 4 4 3 3	15,364 15,342 15,319 15,239 119 to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484 14,482 14,439	22 23 22 79 15,466 Distance Between Perfs 23 22 23 22 23 22 23	3 3 3 3 3 30 Total Shots Shots 5 5 4 4 4 4 3 3 3	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,306 14,261 14,261 14,259 14,236	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 22	3 3 3 3 30 Total Shots Shots 5 5 4 4 4 3 3	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,148 14,127 14,101 14,075	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26	3 3 3 3 30 Total Shots Shots 5 5 5 4 4 4 3 3	14,823 14,801 14,778 14,761 14,761 19lug to Plug Frac Plug Stage 20 14,010 13,988 13,965 13,943 13,920 13,898 13,875	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22	3 3 3 30 Total Sh Shots 5 5 4 4 4 3 3
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,665 14,622 14,597 14,575	23 21 24 79 15,646 Distance Between Perfs 29 22 22 22 23 22 23 22	3 3 3 3 30 Fotal Shots Shots 5 5 4 4 4 3 3 3 3	15,364 15,342 15,319 15,279 Plug to Plug Frac Plug Stage 17 14,552 14,507 14,484 14,489 14,439 14,439	22 23 22 79 15,466 Distance Between Perfs 23 22 23 22 23 29 29 29	3 3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,304 14,281 14,299 14,236 14,214	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 22 23 22 23 22 23 22	3 3 3 3 3 3 5 5 5 4 4 4 4 3 3 3 3 3 3 3	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,146 14,127 14,101 14,075 14,056 14,033	19 24 21 79 15,105. Distance Between Perfs 26 22 19 26 26 19 23	3 3 3 3 3 7 Total Shots 5 5 4 4 4 3 3 3 3	14,823 14,801 14,778 14,761 14,778 14,761 14,010 13,988 13,965 13,943 13,923 13,829 13,875 13,853	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 23 22 23 22	3 3 3 30 Total Sh 5 5 4 4 3 3 3
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,665 14,642 14,620 14,597 14,575 Plug to Plug	23 21 24 79 15,646 Distance Between Perfs 29 22 22 23 22 23 22 79	3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3 3 3	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,507 14,484 14,462 14,439 14,4394 Plug to Plug	22 23 22 79 15,466 Distance Between Perfs 23 22 23 22 23 19 26	3 3 3 3 3 30 Fotal Shots Shots 5 5 4 4 4 3 3 3 3 3	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,304 14,281 14,256 14,236 14,214 Plug to Plu	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 22 23 22 23 22 23	3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3 3	15,000 14,981 14,957 14,958 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,146 14,127 14,071 14,075 14,056 14,033 Plug to Plu	19 24 21 79 15,105. Distance Between Perfs 26 22 19 26 26 19 23 69 69	3 3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3 3	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20 14,010 13,988 13,965 13,943 13,920 13,895 13,875 13,875	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 23 22 23 22 23 22 23	3 3 3 30 Total Sh 5 5 4 4 4 3 3 3 3 3 3 3
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,665 14,622 14,597 14,575	23 21 24 79 15,646 Distance Between Perfs 29 22 22 23 22 23 22 79	3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3 3 3	15,364 15,342 15,319 15,279 Plug to Plug Frac Plug Stage 17 14,552 14,507 14,484 14,489 14,439 14,439	22 23 22 79 15,466 Distance Between Perfs 23 22 23 22 23 19 26	3 3 3 3 3 30 Fotal Shots Shots 5 5 4 4 4 3 3 3 3 3	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,304 14,281 14,256 14,236 14,214 Plug to Plu	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 22 23 22 23 22 23	3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3 3	15,000 14,981 14,957 14,958 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,146 14,127 14,071 14,075 14,056 14,033 Plug to Plu	19 24 21 79 15,105. Distance Between Perfs 26 22 19 26 26 19 23 69 69	3 3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3 3	14,823 14,801 14,778 14,761 14,778 14,761 14,010 13,988 13,965 13,943 13,923 13,829 13,875 13,853	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 23 22 23 22 23 22 23	3 3 3 30 Total Sh 5 5 4 4 4 3 3 3 3 3 3 3
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,662 14,620 14,597 14,575 Plug to Plug Frac Plug	23 21 24 79 15,646 Distance Between Perfs 29 22 22 23 22 79 14,744 Distance Distance Distance	3 3 3 3 30 Total Shots 5 5 4 4 4 4 3 3 3 3 3 7 7 7 7	15,364 15,342 15,319 15,239 119 to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484 14,482 14,439 14,420 14,394 Plug to Plug Frac Plug	22 23 22 79 15;466 Distance Between Perfs 23 22 23 22 23 19 26 79 14,563	3 3 3 3 3 3 0 Total Shots 5 5 4 4 4 4 3 3 3 3 3 0 Total Shots	15,184 15,161 15,139 15,115 19 lug to Plu Frac Plug Stage 18 14,370 14,349 14,326 14,304 14,261 14,261 14,261 14,214 Plug to Plug Frac Plug	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 22 23 22 23 22 23 22 23 20 Distance Perfs 24 25 26 27 27 28 28 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 30 Total Shots 5 5 4 4 3 3 3 3 3 3 7 5 5	15,000 14,981 14,957 14,936 14,936 Plug to Pluy Frac Plug Stage 19 14,188 14,168 14,146 14,127 14,101 14,075 14,056 14,033 Plug to Pluy Frac Plug	19 24 21 79 15,105. Distance Between Perfs 26 22 19 26 19 23 69 14,196	3 3 3 3 30 Total Shots 5 5 4 4 4 3 3 3 3 3 7 Total Shots	14,823 14,801 14,778 14,761 14,761 19ug to Pluy Frac Plug Stage 20 14,010 13,988 13,965 13,943 13,920 13,898 13,875 13,853 Plug to Pluy Frac Plug	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 24 25 26 27 27 27 27 27 27 27 27 27 27 27 27 27	3 3 3 3 30 Total St 5 5 4 4 4 3 3 3 3 3 0 Total St
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,732 14,685 14,642 14,620 14,597 14,59	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 3 22 14,744 Distance Between Perfs	3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 3 3 3 7 Total Shots	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,529 14,402 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,420 14,439 14,43	22 23 22 79 15;466  Distance Between Perfs 23 22 23 19 26 79 14,563  Distance Between Perfs	3 3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 3 3 7 Total Shots 5 5 4 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,259 15,259 15,25	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 21 21 31 14,385  Distance Between Perfs	3 3 3 3 7 30 Fotal Shots  5 5 4 4 3 3 3 3 Total Shots  Shots  Shots	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,168 14,127 14,101 14,075 14,056 14,03	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26 19 23 69 14,196 Distance Between Perfs	3 3 3 3 3 3 7 Total Shots Shots 5 5 4 4 3 3 3 3 3 3 7 Total Shots	14,823 14,801 14,778 14,761 Plug to Plug Frac Plug Stage 20 14,010 13,988 13,965 13,953 13,875 14,875 15,875 16,875 17,87	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 23 22 23 22 Distance Between Perfs	3 3 3 3 3 3 5 5 5 4 4 3 3 3 3 3 3 3 3 3
	From Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,685 14,685 14,642 14,620 14,597 14,575 Plug to Plug Frac Plug	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 Distance Perfs 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 5 5 5 4 4 3 3 3 3 3 3 5 7 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484 14,482 14,439 14,420 14,394 Plug to Plug Frac Plug	22 23 22 79 15;466 Distance Between Perfs 23 22 23 29 29 19 26 79 14,563 Distance Between Perfs 30	3 3 3 3 3 5 Total Shots 5 5 4 4 3 3 3 3 3 7 Total Shots	15,184 15,161 15,139 15,115 19 pt plu Frac Plug Stage 18 14,370 14,349 14,326 14,214 14,259 14,236 14,214 Plug to Plu Frac Plug	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 23 22 Distance Between Perfs 24 23 22 24 24 24 24 24 24 24 24 24 24 24	3 3 3 3 7 30 Total Shots 5 5 4 4 3 3 3 3 Total Shots 5 5 4 5 5 5 4 5 5 5 5 4 5 5 5 5 5 5 5	15,000 14,981 14,957 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,188 14,148 14,142 14,101 14,075 14,033 Plug to Plug Stage 24 13,282	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26 19 23 69 14,196 Distance Between Perfs 29	3 3 3 3 3 3 Total Shots 5 5 5 4 4 3 3 3 3 3 7 Total Shots	14,823 14,801 14,778 14,761 14,761 14,761 14,010 13,988 13,963 13,963 13,952 13,875 13,853 Plug to Plug Frac Plug Stage 25 13,101	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 79 14,022 Distance Between Perfs 30	3 3 3 3 3 3 3 5 5 5 5 4 4 4 3 3 3 3 3 3
	From Bottom to Top	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,662 14,620 14,597 14,575 Plug to Plug Stage 21 13,833 13,807	23 21 24 79 15,646 Distance Between Perfs 29 22 22 23 22 23 22 Distance Between Perfs 29 20 20 21 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 5 5 5 4 4 4 4 3 3 3 3 3 5 7 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	15,364 15,342 15,319 15,239 15,239 14g to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484 14,482 14,439 14,420 14,394 Plug to Plug Frac Plug Stage 22 13,642 13,642 13,642	22 23 22 79 15;466 Distance Between Perfs 23 22 23 19 26 79 14,563 Distance Between Perfs 23 22 23 22 23 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 3 7 5 5 5 4 4 4 3 3 3 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8	15,184 15,161 15,139 15,116 19 Ing to Pluy Frac Plug Stage 18 14,370 14,349 14,326 14,306 14,214 14,259 14,236 14,214 Plug to Pluy Frac Plug Stage 23	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 23 22 3 Distance Between Perfs 24 22 23 22 22	3 3 3 3 3 7 5 5 5 4 4 3 3 3 3 7 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	15,000 14,981 14,937 14,936 14,936 Plug to Plug Frac Plug 14,188 14,188 14,186 14,146 14,127 14,101 14,075 14,056 14,033 Plug to Plug Frac Plug Stage 24	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 19 23 69 14,196 Distance Between Perfs 26 27 29 26	3 3 3 3 3 5 5 5 4 4 4 4 4 3 3 3 3 3 3 5 7 5 5 5 5 5 5 5 5 5 5 5 5	14,823 14,801 14,778 14,761 14,761 19ug to Pluy Frac Plug Stage 20 14,010 13,988 13,965 13,943 13,920 13,898 13,875 13,853 19ug to Pluy Frac Plug Stage 25 13,101 13,085	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 23 22 23 22 Distance Between Perfs 30 22	3 3 3 3 3 3 5 5 4 4 4 4 3 3 3 3 3 3 3 5 5 5 5
	From Bottom to Top	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,665 14,620 14,597 14,575 Plug to Plug Frac Plug Stage 21 13,833 13,807 13,781	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 Distance Between Perfs 29 14,744	3 3 3 3 3 7 Total Shots  5 5 4 4 4 3 3 3 7 Total Shots  Shots  5 4 4 4 4 5 5 5 4 4 4 4 4 7 7 8 7 8 7 8 8 8 8 8 8 8 8 8	15,364 15,342 15,349 15,239 119 to Plug Frac Plug Stage 17 14,552 14,507 14,482 14,439 14,420 14,394 Plug to Plug Frac Plug Stage 22 13,642 13,627 13,604	22 23 22 79 15,466 Distance Between Perfs 23 22 23 19 26 79 14,563 Distance Between Perfs 30 23 21	3 3 3 3 3 3 5 5 5 4 4 4 4 3 3 3 3 3 0 Total Shots  Shots  Shots  Shots  5 5 4 5 5 4 4 4 5 5 5 5 5 5 5 5 5 5 5	15,184 15,161 15,139 15,116 19 to Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,304 14,286 14,214 Plug to Plug Frac Plug Stage 23 14,346 13,446 13,446 13,424	23 22 23 76 15,280 Distance Between Perfs 24 23 22 23 23	3 3 3 3 3 7 5 10 10 10 10 10 10 10 10 10 10 10 10 10	15,000 14,981 14,957 14,957 14,958 Plug to Plug Frac Plug 14,188 14,168 14,146 14,127 14,101 14,075 14,056 14,033 Plug to Plug Frac Plug Stage 24 13,262 13,266 13,240	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26 19 23  69 14,196 Distance Between Perfs 29	3 3 3 3 3 30 Total Shots 5 5 5 4 4 4 3 3 3 3 3 3 5 Total Shots	14,823 14,801 14,778 14,761 14,761 14,761 14,761 14,761 13,988 13,995 13,943 13,995 13,898 13,875 13,853 Plug to Plu Frac Plug  Stage 25 13,101 13,085 13,085 13,085	22 23 17 67 14,912 Distance Between Perfs 23 23 22 21	3 3 3 3 3 3 0 Total St Shote 5 5 4 4 4 3 3 3 3 3 0 7 5 5 5 5 5 5 5 5 5 5 7 7 8 7 8 7 8 7 8
	From  From  Bottom to	15,545 15,522 15,501 15,772 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,665 14,620 14,597 14,575 Plug to Plug Frac Plug Stage 21 13,833 13,807 13,781 13,762	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 23 22 20 79 14,744 Distance Between Perfs 20 26 19 22	3 3 3 3 3 3 5 5 5 4 4 4 3 3 3 3 3 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,552 14,507 14,484 14,462 14,439 14,420 14,439 14,420 14,39 Plug to Plug Frac Plug Stage 22 13,642 13,642 13,642 13,642 13,642 13,642	22 23 22 79 15,466 Distance Between Perfs 23 22 23 22 23 19 26 79 14,563 Distance Between Perfs 30 23 21 24	3 3 3 3 3 3 0 Total Shots 5 4 4 4 3 3 3 3 3 3 0 Total Shots	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,304 14,281 14,295 14,236 14,214 Plug to Plu Frac Plug Stage 23 13,469 13,424 13,461	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23	3 3 3 3 3 7 5 10 10 10 10 10 10 10 10 10 10 10 10 10	15,000 14,981 14,957 14,958 Plug to Plug Frac Plug 14,188 14,168 14,146 14,127 14,101 14,075 14,056 14,033 Plug to Plug Frac Plug Stage 24 13,282 13,266 13,240 13,221	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26 19 23 69 14,196 Distance Between Perfs 29 26 19 20 20 21 21 22 23 24 25 26 26 27 29 28 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 3 7 Total Shots 5 5 4 4 4 3 3 3 3 3 3 7 Total Shots	14,823 14,801 14,778 14,778 14,778 14,761 14,010 13,988 13,965 13,943 13,925 13,853 Plug to Plu Frac Plug  Stage 25 13,101 13,065 13,063 13,042	22 23 17 67 14,912 Distance Between Perfs 23 22 24 24 24 24	3 3 3 3 3 3 3 3 3 5 5 5 4 4 4 3 3 3 3 3
	From Bottom to Top	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,732 14,685 14,642 14,620 14,597 14,577 14,575 Plug to Plug Frac Plug Stage 21 13,833 13,807 13,782 13,782	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 23 22 23 22 30 22 30 22 31 4,744 Distance Between Perfs 20 26 26 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 7 Total Shots  5 5 4 4 3 3 3 3 Total Shots  5 4 4 4 3 4 4 4 4 3	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,529 14,420 14,439 14,420 14,439 14,420 14,394 Plug to Plug Frac Plug Stage 22 13,627 13,627 13,663 13,559	22 23 22 79 15;466  Distance Between Perfs 23 22 23 19 26 79 14,563  Distance Between Perfs 30 23 21 24 27	3 3 3 3 3 7 30 Fotal Shots 5 5 4 3 3 3 3 Total Shots 5 5 4 4 3 4 4 4 3	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,259 14,259 14,256 14,210 14,259 14,259 14,259 14,259 14,259 14,259 14,259 14,259 14,246 13,446 14,44	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 3 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23	3 3 3 3 3 7 30 Fotal Shots 5 5 4 4 3 3 3 3 Total Shots 5 5 4 4 3 4 3 4 3 4 3 4 4 3 4 3 3 5 5 5 6 4 4 4 3 3 3 6 6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	15,000 14,981 14,937 14,936 Plug to Plug Frac Plug Stage 19 14,188 14,168 14,168 14,127 14,101 14,075 14,056 14,035 14,03	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26 19 23 69 14,196 Distance Between Perfs 29 26 26 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 3 3 3 7 Total Shots 5 5 4 4 4 3 3 3 3 5 5 5 4 4 4 4 3 3 3 4 4 4 5 5 5 5	14,823 14,801 14,778 14,761 140 pto Plug Frac Plug Frac Plug 14,010 13,988 13,965 13,953 13,875 13,855 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,875 13,042 13,042 13,042	22 23 17 67 14,912  Distance Between Perfs 23 23 22 23 22 23 22 23 32 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 24 19	3 3 3 3 3 3 0 Total Sh 5 5 5 4 4 4 3 3 3 3 3 3 3 5 5 5 5 5 5 5
	From  From  Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,685 14,665 14,642 14,620 14,597 14,575 Plug to Plug Frac Plug Stage 21 13,833 13,807 13,782 13,762 13,774	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 Distance Between Perfs 20 26 19 22 23 22	3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 7 Total Shots 5 4 4 3 3 3 4 4 4 4 3 3 3 3 3 3 7 Shots	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,529 14,420 14,439 14,420 14,439 14,420 14,394 Plug to Plug Frac Plug Stage 22 13,627 13,664 13,569 13,535 13,535 13,532	22 23 22 79 15;466 Distance Between Perfs 23 22 23 19 26 79 14,563 Distance Between Porfs 30 23 21 24 27 18	3 3 3 3 3 7 30 Fotal Shots 5 5 4 4 3 3 3 7 7 Total Shots 5 4 4 3 3 3 3 7 3 4 4 4 4 4 4 4 4 4 4 4 4	15,184 15,161 15,139 15,116 19 to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,259 14,236 14,214 Plug to Plug Frac Plug Stage 23 13,469 13,448 13,448 13,448 13,424 13,439 13,379	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 23 22  Distance Between Perfs 24 23 22 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22	3 3 3 3 3 7 Total Shots  5 5 4 4 3 3 3 3 Total Shots  Shots  5 4 4 3 3 3 3 4 4 4 3 3 3 3 7 Total Shots	15,000 14,981 14,937 14,936 14,936 19lug to Pluy Frac Plug 14,188 14,188 14,188 14,127 14,101 14,075 14,033 Plug to Pluy Frac Plug Stage 24 13,282 13,240 13,240 13,198 13,178	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 29 14,196 Distance Between Perfs 26 29 20 19 20 20 21 20 22 20	3 3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 3 3 7 Total Shots 5 5 5 4 4 3 3 3 5 5 5 4 4 4 3 3 5 5 5 5	14,823 14,801 14,778 14,761 14,778 14,761 19ug to Plug Frac Plug Stage 20 14,010 13,988 13,983 13,920 13,898 13,875 13,853 Plug to Plug Frac Plug Stage 25 13,101 13,085 13,063 13,043 13,043 13,043	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 79 14,022 Distance Between Perfs 30 22 21 24 19 26	3 3 3 3 3 3 0 Total Sh 5 5 4 4 4 3 3 3 3 3 7 5 5 5 5 5 5 5 5 5 5 5 5 7 7 7 7
	From  From  Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,732 14,685 14,642 14,620 14,597 14,577 14,575 Plug to Plug Frac Plug Stage 21 13,833 13,807 13,782 13,782	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 23 22 23 22 30 22 30 22 31 4,744 Distance Between Perfs 20 26 26 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 7 Total Shots  5 5 4 4 3 3 3 3 Total Shots  5 4 4 4 3 4 4 4 4 3	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,529 14,420 14,439 14,420 14,439 14,420 14,394 Plug to Plug Frac Plug Stage 22 13,627 13,627 13,663 13,559	22 23 22 79 15;466  Distance Between Perfs 23 22 23 19 26 79 14,563  Distance Between Perfs 30 23 21 24 27	3 3 3 3 3 7 30 Fotal Shots 5 5 4 3 3 3 3 Total Shots 5 5 4 4 3 4 4 4 3	15,184 15,161 15,139 15,116 Plug to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,259 14,259 14,256 14,210 14,259 14,259 14,259 14,259 14,259 14,259 14,259 14,259 14,246 13,446 14,44	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 3 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23	3 3 3 3 3 7 5 5 5 4 4 3 3 3 7 5 5 5 4 4 4 4 3 3 3 3 3 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8	15,000 14,981 14,987 14,936 14,936 19lug to Pluy Frac Plug Stage 19 14,188 14,168 14,146 14,127 14,101 14,075 14,056 14,033 Plug to Pluy Frac Plug Stage 24 13,282 13,286 13,240 13,221 13,198 13,176 13,153	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 26 19 23 69 14,196 Distance Between Perfs 29 26 26 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 3 7 5 5 5 4 4 3 3 3 3 3 7 7 5 5 5 4 4 4 3 3 3 3 5 5 5 5 4 4 4 4 4 4	14,823 14,801 14,778 14,761 14,761 14,761 19ug to Pluy Frac Plug  Stage 20 14,010 13,988 13,965 13,945 13,945 13,853 13,920 13,898 13,875 13,853 19ug to Pluy Frac Plug  Stage 25 13,101 13,085 13,003 13,042 13,042 13,042 13,042 13,042 13,042 13,042 13,042 13,042	22 23 17 67 14,912  Distance Between Perfs 23 23 22 23 22 23 22 23 32 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 24 19	3 3 3 3 3 3 0 Total Sh 5 5 4 4 4 3 3 3 3 3 5 5 5 5 5 5 5 5 5 5
	From  From  Bottom to	15,545 15,522 15,501 15,477 Plug to Plug Frac Plug Stage 16 14,732 14,709 14,685 14,665 14,642 14,620 14,597 14,575 Plug to Plug Frac Plug Stage 21 13,833 13,807 13,782 13,762 13,774	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 Distance Between Perfs 20 26 19 22 23 22	3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 7 Total Shots 5 4 4 3 3 3 4 4 4 4 3 3 3 3 3 3 7 Shots	15,364 15,342 15,319 15,297 Plug to Plug Frac Plug Stage 17 14,552 14,529 14,529 14,420 14,439 14,420 14,439 14,420 14,394 Plug to Plug Frac Plug Stage 22 13,627 13,664 13,569 13,535 13,535 13,532	22 23 22 79 15;466 Distance Between Perfs 23 22 23 19 26 79 14,563 Distance Between Porfs 30 23 21 24 27 18	3 3 3 3 3 7 30 Fotal Shots 5 5 4 4 3 3 3 7 7 Total Shots 5 4 4 3 3 3 3 7 3 4 4 4 4 4 4 4 4 4 4 4 4	15,184 15,161 15,139 15,116 19 to Plug Frac Plug Stage 18 14,370 14,349 14,326 14,259 14,236 14,214 Plug to Plug Frac Plug Stage 23 13,469 13,448 13,448 13,448 13,424 13,439 13,379	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 23 22  Distance Between Perfs 24 23 22 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22	3 3 3 3 3 7 Total Shots  5 5 4 4 3 3 3 3 Total Shots  Shots  5 4 4 3 3 3 3 4 4 4 3 3 3 3 7 Total Shots	15,000 14,981 14,937 14,936 14,936 19lug to Pluy Frac Plug 14,188 14,188 14,188 14,127 14,101 14,075 14,033 Plug to Pluy Frac Plug Stage 24 13,282 13,240 13,240 13,198 13,178	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 29 14,196 Distance Between Perfs 26 29 20 19 20 20 21 20 22 20	3 3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 3 3 7 Total Shots 5 5 5 4 4 3 3 3 5 5 5 4 4 4 3 3 5 5 5 5	14,823 14,801 14,778 14,761 14,778 14,761 19ug to Plug Frac Plug Stage 20 14,010 13,988 13,983 13,920 13,898 13,875 13,853 Plug to Plug Frac Plug Stage 25 13,101 13,085 13,063 13,043 13,043 13,043	22 23 17 67 14,912 Distance Between Perfs 23 23 22 23 22 79 14,022 Distance Between Perfs 30 22 21 24 19 26	3 3 3 3 3 3 0 Total Sh 5 5 4 4 4 3 3 3 3 3 7 5 5 5 5 5 5 5 5 5 5 5 5 7 7 7 7
	From  From  Bottom to	15,545 15,522 15,501 15,477 Hug to Plug Frac Plug Stage 16 14,732 14,709 14,687 14,687 14,662 14,597 .14,575 Plug to Plug Frac Plug Stage 21 .13,833 .13,807 .13,781 13,762 13,772 13,762	23 21 24 79 15,646 Distance Between Perfs 29 22 23 22 23 22 Distance Between Perfs 20 26 19 22 23 22	3 3 3 3 3 3 7 Total Shots 5 5 4 4 3 3 3 7 Total Shots 5 4 4 4 3 3 3 3 3 4 5 5 5 4 4 4 3 3 3 3	15,364 15,342 15,319 15,319 115,319 115,319 119 to Plug Frac Plug Stage 17 14,552 14,529 14,507 14,484 14,482 14,439 14,420 14,394 14,420 14,394 14,420 14,394 14,627 13,664 13,663 13,563 13,552 13,514	22 23 22 79 15;466 Distance Between Perfs 23 22 23 19 26 79 14,563 Distance Between Porfs 30 23 21 24 27 18	3 3 3 3 3 3 7 5 5 5 4 4 4 3 3 3 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8	15,184 15,161 15,139 15,115 19 pt plu Frac Plug Stage 18 14,370 14,349 14,326 14,236 14,214 14,269 14,236 14,214 14,269 14,236 14,214 14,269 14,236 14,24 13,469 13,424 13,469 13,424 13,469 13,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14,426 14	23 22 23 76 15,280  Distance Between Perfs 24 23 22 23 22 23 22  Distance Between Perfs 24 23 22 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22 23 22	3 3 3 3 3 7 5 5 5 4 4 3 3 3 7 5 5 5 4 4 4 4 3 3 3 3 3 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8	15,000 14,981 14,987 14,936 14,936 19lug to Pluy Frac Plug Stage 19 14,188 14,168 14,146 14,127 14,101 14,075 14,056 14,033 Plug to Pluy Frac Plug Stage 24 13,282 13,286 13,240 13,221 13,198 13,176 13,153	19 24 21 79 15,105 Distance Between Perfs 26 22 19 26 29 14,196 Distance Between Perfs 26 29 20 19 20 20 21 20 22 20	3 3 3 3 3 3 7 5 5 5 4 4 3 3 3 3 3 7 7 5 5 5 4 4 4 3 3 3 3 5 5 5 5 4 4 4 4 4 4	14,823 14,801 14,778 14,761 14,761 14,761 19ug to Pluy Frac Plug  Stage 20 14,010 13,988 13,965 13,945 13,945 13,853 13,920 13,898 13,875 13,853 19ug to Pluy Frac Plug  Stage 25 13,101 13,085 13,003 13,042 13,042 13,042 13,042 13,042 13,042 13,042 13,042 13,042	22 23 17 67 14,912 Distance Between Perfs 23 22 23 24 29 26 27 28 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3