

SCOTT A. VERHINES, P.E. STATE ENGINEER

5550 San Antonio NE Albuquerque, NM 87109 (505) 383-4000

November 7, 2014

FILE: NO OSE NUMBER (Wingate 89, 90, and 91)

U.S. Army 5338 Montgomery NE, Suite 300/400 Albuquerque, NM 87109

Greetings:

Enclosed is the Well Plugging Plan of Operations which has been approved subject to the Conditions of Approval, attached hereto.

Sincerely,

Jennifer M. Allred

Water Resource Specialist

JMA:jma

Enclosures as stated

CC: ZAPATA Incorporated, Contact: Steven E. Morrissette, 4312 S. 198th Street, Omaha, NE 68135



DISTRICT 6 SCOTT A. VERHINES, P.E. NEW MEXICO STATE ENGINEER

Materials submitted by David Henry / US Army Corps of Engineers (USACOE) and Steven Morrissette / Zapata, Inc., on behalf the USACOE of the identify three defunct potentiometric monitor wells to be plugged at the Fort Wingate Depot site. Geomechanics Southwest, Inc. (WD-1522) is scheduled to plug the wells.

Permittee: US Army

Location: Fort Wingate, McKinley County, New Mexico

Approximate coordinates:

Applicant well	NMOSE File	Latitude	Longitude	Depth	Reported static	Casing
Applicant well	No.	(NAD 83)	(NAD 83)	Deptil	water level bgl	diameter
Wingate 89	Unknown	35° 31' 36.5052"	-108° 35' 35.9952"	100'	13.5'	12"
Wingate 90	Unknown	35° 31' 40.5156"	-108° 35' 51.8568"	98'	11.7'	8"
Wingate 91	Unknown	35° 31' 44.0292"	-108° 36' 01.4040"	112'	12.4	12"

Specific Plugging Conditions of Approval for tabulated Fort Wingate Project Monitor Wells

- Water well drilling and well drilling activities, including well plugging, are regulated under 19.27.4 NMAC, which requires any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the New Mexico Office of the State Engineer (NMOSE). Therefore, the firm of a New Mexico licensed Well Driller shall perform the well plugging.
- 2. Theoretical volumes of sealant required for abandonment of 8" and 12" ID casings are approximately 2.6 and 5.9 gallons per foot respectively; if casing is extracted, more sealant will be necessary.

The Well Plugging Plans of Operation submitted request use of 3% - 5% bentonite-enriched cement grout. Pure bentonite powder ("90 barrel yield") is allowed as a cement additive under NMOSE / AWWA guidelines, and neither granular bentonite nor extended-yield bentonite should be mixed with cement for the purpose of these pluggings. When supplementing a cement slurry with bentonite powder as requested, water demand for the mix increases at a rate of approximately 0.65 gallons of water for each 1% increment of bentonite bdwc (by dry weight cement) above fundamental water demand of 5.2 gallons water per 94-lb. sack of cement. A 3% bentonite/cement slurry may therefore contain up to 7.2 gallons of water total per 94-lb. sack of cement / approximate 3-lb. bentonite increment, when appropriately mixed; a 5% bentonite/cement slurry may therefore contain up to 8.5 gallons of water total per 94-lb. sack of cement / approximate 5-lb. bentonite increment, when appropriately mixed.

The bentonite shall be hydrated separately with its required increment of water before being mixed into the neat cement slurry. If water is otherwise added to the combination of dry ingredients or the dry bentonite blended into wet cement, the hardness and alkalinity imparted to the mix water by the

cement will restrict yield of the bentonite powder, resulting in excess free water in the slurry and enhanced cement shrinkage upon curing.

- 3. Placement of the grout slurry within the wells shall be by pumping through a tremie pipe extended to near well bottom and kept below top of the slurry column as the well is plugged from bottom-upwards in a manner that displaces any standing water column upwards from below (note Condition 5, below). Tremie pipe may be pulled as necessary to retain minimal submergence in the advancing column of sealant.
- 4. Any open annulus encountered at the wellhead shall also be sealed by the placement of the approved cement grout mix. Submitted plugging plans note that should a gravel-filled annulus be found for any of these wells, the upper 20' of annular space will be retroactively grouted. Subsequent information filed by 10/22/2014 e-mail from Steven Morrissette / Zapata, Inc., notes that would be effected following gravel displacement by compressed air. Prior to, or upon completion of plugging, the well casing may be cut-off below grade as necessary to allow redevelopment of the site, provided a minimum 6-inch thickness of abandonment grout or concrete completely encapsulates the top of the cut-off casing. More stringent local building codes may apply.
- 5. Should the New Mexico Environment Department, US Environmental Protection Agency, or another regulatory agency sharing jurisdiction of the project authorize, or by regulation require a more stringent well plugging procedure than herein acknowledged, the more-stringent procedure should be followed. This, in part, includes provisions regarding pre-authorization to proceed, contaminant remediation, inspection, pulling/perforating of casing, or prohibition of free discharge of any fluid from the borehole during or related to the plugging process.
- 6. NMOSE witnessing of the plugging of non-artesian wells is not required, but shall be facilitated if a NMOSE observer is onsite. NMOSE witnessing may be requested during normal work hours by calling the District 6 NMOSE Office at 505-383-4000, at least 48-hours in advance. NMOSE inspection will occur dependant on personnel availability.
- 7. A NMOSE Plugging Record (available at: http://www.ose.state.nm.us/PDF/WellDrillers/WD-11.pdf) itemizing actual abandonment process and materials used shall be filed with the State Engineer (NMOSE, 5550 San Antonio Drive NE, Albuquerque, NM 87 09-4127), within 20 days after completion of well plugging. Please attach a copy of these plugging conditions.

The NMOSE Well Plugging Plans of Operation, as annotated, are here by approved with the aforesaid conditions applied.

Witness my hand and seat this 6th day of November, 2014

Jennifer M. Afred

Water Resource Specialist

NMOSE District 1

GINEE/5



WELL PLUGGING PLAN OF OPERATIONS



							
NOTE:	A Well Plugging Plan of to plugging.	Operations shall	be filed with ar	id accepted	l by the Office of t	he State Engineer	prior
. FIL	NG FEE: There is no filin	g fee for t <mark>h</mark> is form	1.				
I. GE	NERAL / WELL OWNER	RSHIP:					
Existing	g Office of the State Engine	er POD N <mark>u</mark> mber (Well Number) fo	or well to be	e plugged: Wingate	90	
Name o	of well owner: U.S. Army						
Mailing	g address: 5338 Montgomer	y NE Suite 300/4	00				
City: <u>A</u>	Ibuquerque		State: NM			Zip code: <u>87109</u>	
hone r	number: 505-342-3139		E-ma	iil: <u>David.</u> V	W.Henry@usace.ar	my.mil	
n. w	ELL DRILLER INFORM	ATION:					
Well D	riller contracted to provide p	olugging s <mark>e</mark> rvices:	Geomechanics	Southwest,	Inc.		
New M	exico Well Driller License	No.: <u>WD-15</u>	22		Expiration Date:	April 30, 20)15
V. W	ELL INFORMATION:						
Note: 1	A copy of the existing Well	Record fo <mark>r</mark> the we	ell to be plugged	should be a	ttached to this plan	I.	
						(3)	
)	GPS Well Location:	Latitude: Longitude:				sec, NAD 83	
		Benghade.	100		,	555, 11, 12 63	
2)	Reason(s) for plugging we	ell: Well is	located in FWD	A parcel 10	B, was installed in	1963, and is used on	ily for
	water level measurement.	The well is no lo	nger needed for	any of the I	WDA programs.	=======================================	
						-77	
						्र इ	
3)	Was well used for any typ what hydrogeologic parameter, authorization from Does the well tap brackish	meters were mon the New Mexico I n, saline, or otherv	itored. If the w Environment De vise poor quality	vell was us partment m	ed to monitor con ay be required prio No If yes, p	taminated or poor or to plugging.	quality tail,
	including analytical result						
7	Static water level:	117 feet below	land curface / fe	et above la	nd surface (circle	ana)	

6)	Depth of the well: feet
7)	Inside diameter of innermost casing: 8.0 inches.
8)	Casing material: steel
9)	The well was constructed with:
	an open-hole production interval, state the open interval:
	X a well screen or perforated pipe, state the screened interval(s): Yes, but interval unknown
10)	What annular interval surrounding the artesian casing of this well is cement-grouted? NA
11)	Was the well built with surface casing?Yes If yes, is the annulus surrounding the surface casing grouted
	or otherwise sealed? <u>Unknown</u> If yes, please describe: <u>Steel above-ground protective casing with</u>
	Portland cement plug and pad. Presence of a seal is unknown.
12)	Has all pumping equipment and associated piping been removed from the well? If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.
v. DE	SCRIPTION OF PLANNED WELL PLUGGING:
pipe, a	If this plan proposes to plug an artes <mark>i</mark> an well in a way other than with cement grout, placed bottom to top with a tremie detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional al information, such as geophysical logs, that are necessary to adequately describe the proposal.
1)	Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology
	proposed for the well: The well will be plugged in accordance with 19.2 7.4.30 C NMAC using a neat cement
	slurry. The well will be filled from the bottom upwards to land surface using a tremie pipe. If no annular seal is
	present, the upper 20 feet of annul <mark>u</mark> s will be grouted.
2)	Will well head be cut-off below land surface after plugging? Yes
VI. PI	LUGGING AND SEALING MATERIALS:
Note:	The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant
1)	For plugging intervals that employ cement grout, complete and attach Table A.
2)	For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
3)	Theoretical volume of grout required to plug the well to land surface: 255.9 gal. (34.2 ft³)
4)	Type of Cement proposed: Portland Type I/II
5)	Proposed cement grout mix: 7.4 gallons of water per 94 pound sack of Portland cement.
6)	Will the grout be: batch-mixed and delivered to the site
	X mixed on site

7)	Grout additives requested, and percent by dry weight relative to cement:	3-5% bentonite
,		
•		
8)	Additional notes and calculations:	
3.71T A	ADDITIONAL INFORMATION: List additional information below, or on sep	arata shaat(a).
#3: Th	ne well was installed in 1963 in parcel 10B for reasons unknown. There are no v	vell logs for this well.
VIII	SIGNATURE:	
		Normand the forestine Well Diversity
I, Plan o	<u>David Henry</u> , say that I have carefu , say that I have carefu f Operations and any attachments, which are a part hereof; that I am familiar with	ny read the foregoing well Plugging the the State
Engine	eer pertaining to the plugging of wells and will comply with them, and that each	and all of the statements in the Well
Pluggi	ng Plan of Operations and attachments are true to the best of my knowledge and	belief.
	(held	9/10/14
	Signature of Applicant	Date
	, organical of Applicant	Date
IX. A	CTION OF THE STATE ENGINEER:	
This W	/ell Plugging Plan of Operations is:	
	Approved subject to the attached conditions.	123
	Not approved for the reasons provided on the attached letter.	76
	7th Novem	1 - 2014
	Witness my hand and official seal this day of / Voven	2017
	Scott A. Verhines, State	Engineer / /
	The state of the s	
	By /	12
		4)

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

Interval 1 – deepest	Interval 2	Interval 3 – most shallow
		Note: if the well is non-artesian and breaches only one aquifer, use only this column.
		0
		98.0
		255.9 gal. (34.2 ft ³)
		MAX 7.2 GALS/SK TOTAL AA 3:/ Binstoniti BOWL 7.4 MAX 8.5 GALS/SK TOTAL FAM 5:/ BINTONILI DOWL
		Mixed on-site
		Bentonite
		3-5%
		n/a
		n/a
	Interval 1 – deepest	Interval 1 – deepest Interval 2

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interva <mark>l</mark> 1 – deepest	Interval 2	Interval 3 - most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			n/a
Bottom of proposed sealant of grout placement (ft bgl)			n/a
Theoretical volume of sealant required per interval (gallons)			n/a
Proposed abandonment sealant (manufacturer and trade name)			n/a

WHET 26 TH 1:36



WELL PLUGGING PLAN OF OPERATIONS



	LING FEE: There is no filing fee for	this form.		
	ENERAL / WELL OWNERSHIP:			_
	ng Office of the State Engineer POD N	lumber (Well Number) for well to be	plugged: Wingale 89	,
	of well owner: <u>U.S. Army</u>			
	ng address: 5338 Montgomery NE Sui	te 300/400		-
	Albuquerque			p code: <u>87109</u>
Phone	number: 505-342-3139	E-mail: <u>David.W</u>	.Henry@usace.army.	mil
<u> 111. V</u>	VELL DRILLER INFORMATION:			
Well I	Driller contracted to provide plugging s	services: <u>Geomechanics Southwest, I</u>	nc.	
New 1	Mexico Well Driller License No.:	WD-1522	Expiration Date:	April 30, 2015
				207 8 B
ΙV. <u>V</u>	VELL INFORMATION:			및 성
Note:	A copy of the existing Well Record for	or the well to be plugged should be att	to also al to this also	
		are wen to be plugged shound be dit	tached to this plan.	*
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	of the went to be plugged should be all	tached to this plan.	
1)	GPS Well Location: Latitude:	:35deg,311	min, 36.5052 sec	
	GPS Well Location: Latitude:	:35deg,311		
	GPS Well Location: Latitude: Longitude	:35deg,311	min, 36.5052 sec min, 35.9952 sec,	NAD 83
1)	GPS Well Location: Latitude: Longitude Reason(s) for plugging well:	: 35 deg, 31 lee: 108 deg, 35 lee: 108 d	min, 36.5052 sec min, 35.9952 sec, 8, was installed in 196	NAD 83
1)	GPS Well Location: Latitude: Longitude Reason(s) for plugging well:	: 35 deg, 31 nde: 108 deg, 35 nde: 108 deg, 35 nde: 108 deg, 35 ndes 108	min, 36.5052 sec min, 35.9952 sec, 8, was installed in 196	NAD 83
1)	GPS Well Location: Latitude: Longitude Reason(s) for plugging well:	: 35 deg, 31 nde: 108 deg, 35 nde: 108 deg, 35 nde: 108 deg, 35 ndes 108	min, 36.5052 sec min, 35.9952 sec, 8, was installed in 196	NAD 83
1)	GPS Well Location: Latitude: Longitude Reason(s) for plugging well: water level measurement. The well	de: 35 deg, 31 deg. 35 deg. 36	min, 36.5052 sec min, 35.9952 sec, 3, was installed in 196. WDA programs.	NAD 83
1)	GPS Well Location: Latitude: Longitude Reason(s) for plugging well: water level measurement. The well Was well used for any type of moni	de: 35 deg, 31 deg, 35 deg, 36	min, 36.5052 sec, 35.9952 sec, 36.8, was installed in 196. WDA programs.	NAD 83 3, and is used only for
2)	GPS Well Location: Latitude: Longitud Reason(s) for plugging well: water level measurement. The well Was well used for any type of moni what hydrogeologic parameters we	de: 35 deg, 31 deg. 35	min, 36.5052 sec, 35.9952 sec, s, was installed in 196. WDA programs.	NAD 83 3, and is used only for l of this form to detail inated or poor quality
2)	GPS Well Location: Latitude: Longitud Reason(s) for plugging well: water level measurement. The well Was well used for any type of moni what hydrogeologic parameters we water, authorization from the New March 1985.	de: 35 deg, 31 deg. 35	min, 36.5052 sec, 35.9952 sec, 36, was installed in 196. WDA programs.	NAD 83 3, and is used only for of this form to detail inated or poor quality plugging.
2)	GPS Well Location: Reason(s) for plugging well: water level measurement. The well Was well used for any type of moni what hydrogeologic parameters we water, authorization from the New I Does the well tap brackish, saline, or	de: 35 deg, 31 deg. 35	min, 36.5052 sec, 35.9952 sec, 36, was installed in 196. WDA programs.	NAD 83 3, and is used only for l of this form to detail inated or poor quality
2)	GPS Well Location: Latitude: Longitud Reason(s) for plugging well: water level measurement. The well Was well used for any type of moni what hydrogeologic parameters we water, authorization from the New March 1985.	de: 35 deg, 31 deg. 35	min, 36.5052 sec, 35.9952 sec, 36, was installed in 196. WDA programs.	NAD 83 3, and is used only for of this form to detail inated or poor quality plugging.

6)	Depth of the well: feet
7)	Inside diameter of innermost casing: 12.0 inches.
8)	Casing material: steel
9)	The well was constructed with:
	an open-hole production interval, state the open interval:
	X a well screen or perforated pipe, state the screened interval(s): Yes, but interval unknown
10)	What annular interval surrounding the artesian casing of this well is cement-grouted?NA
11)	Was the well built with surface casing? Yes If yes, is the annulus surrounding the surface casing grouted
	or otherwise sealed? <u>Unknown</u> If yes, please describe: <u>Steet above-ground protective casing with</u>
	Portland cement plug and pad. Presence of a seal is unknown.
12)	Has all pumping equipment and associated piping been removed from the well? yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.
V. DES	SCRIPTION OF PLANNED WELL PLUGGING:
pipe, a	f this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional al information, such as geophysical logs, that are necessary to adequately describe the proposal.
1)	Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology
	proposed for the well: The well will be plugged in accordance with 19.27.4.30 C NMAC using a neat cement
	slurry. The well will be filled from the bottom upwards to land surface using a tremie pipe. If no annular seal is
	present, the upper 20 feet of annulus will be grouted.
2)	Will well head be cut-off below land surface after plugging? Yes
VI DI	UGGING AND SEALING MATERIALS:
	The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant
1)	For plugging intervals that employ cement grout, complete and attach Table A.
2)	For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
3)	Theoretical volume of grout required to plug the well to land surface: 587.5 gal. (78.5 ft ³)
4)	Type of Cement proposed: Portland Type I/II
5)	Proposed cement grout mix: 7.4 gallons of water per 94 pound sack of Portland cement.
6)	Will the grout be: batch-mixed and delivered to the site
	X mixed on site

7)	Grout additives requested, and percent by dry weight relative to cement:	3-5% bentonite
8)	Additional notes and calculations:	
0)	Additional notes and calculations.	
X / Y I	DOUTIONAL INFORMATIONS List additional information below as a second	
<u>VII. A</u>	ADDITIONAL INFORMATION: List additional information below, or on sep	arate sneet(s):
#3: TI	ne well was installed in 1963 in parcel 10B for reasons unknown. There are no w	ell logs for this well.
	CICNIATURE	
	SIGNATURE: David Henry , say that I have carefu	ly read the foregoing Well Plygging
Plan o	f Operations and any attachments, which are a part hereof; that I am familiar wit	the rules and regulations of the State
	eer pertaining to the plugging of wells and will comply with them, and that each in the plugging of wells and will comply with them, and that each ing Plan of Operations and attachments are true to the best of my knowledge and	
, 10551		Jenet.
	Callette	9/10/2014
	US samy confe of ENGINERA	Date
IX. A	CTION OF THE STATE ENGINEER:	
This W	ell Plugging Plan of Operations is:	
11113 1		2
	Approved subject to the attached conditions. Not approved for the reasons provided on the attached letter.	74
	THE 10	1 - 00.11
	Witness my hand and official seal this day of _/Vovcou	ber , 2014
	Scott A. Verhines, State	Engineer, / / =:
		1 4161 =
		1500 G

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			0
Bottom of proposed interval of grout placement (ft bgl)			100.0
Theoretical volume of grout required per interval (gallons)			587.5 gal. (78.5 ft³)
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			MAY 7.2 GAS/SK TOTAL FAL 3% BINTONITE BDWC 7.4 MAX 8.5 GAS/SK TOTAL FOR 6% BINTONITE BDWC
Mixed on-site or batch- mixed and delivered?			Mixed on-site
Grout additive I requested			Bentonite
Additive 1 percent by dry weight relative to cement			3-5%
Grout additive 2 requested			n/a
Additive 2 percent by dry weight relative to cement			n/a

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			n/a
Bottom of proposed sealant of grout placement (ft bgl)			n/a
Theoretical volume of sealant required per interval (gallons)			n/a
Proposed abandonment sealant (manufacturer and trade name)			n/a

28 to 26 to 1:35



WELL PLUGGING PLAN OF OPERATIONS



					_		
NOT	E: A Well Plugging Plan to plugging.	of Operatio <mark>n</mark> s sh	all be filed with	and accept	ed by the O	ffice of the S	tate Engineer prior
<u>I. FI</u>	LING FEE: There is no fi	iling fee for t <mark>h</mark> is fo	orm.				
II. G	ENERAL / WELL OWN	ERSHIP:					
Existi	ing Office of the State Engi	ineer POD N <mark>u</mark> mbe	r (Well Number)) for well to	be plugged:	Wingate 91	
Name	of well owner: U.S. Arm	<u>y</u>					
Maili	ng address: 5338 Montgor	nery NE Suite 300)/400				
City:	Albuquerque		State: NM			Zip	code: <u>8710</u> 9
Phone	e number: 505-342-3139		E-				nil
III. <u>V</u>	WELL DRILLER INFOR	RMATION:					
Well	Driller contracted to provid	le plugging s <mark>e</mark> rvice	es: <u>Geomechani</u>	cs Southwes	st, Inc.		
New]	Mexico Well Driller Licens	se No.: WD-	1522		Expiratio	n Date:	April 30, 2015
IV. V	WELL INFORMATION:						
Note:	A copy of the existing We	ell Record for the	well to be plugge	ed should be	attached to t	his plan.	
							7.3
1)	GPS Well Location:	Latitude:	35 deg, 108 deg,	31	min, 4	4.0292 sec	NAD 03
		Longitude	ueg,	30	IIIIII, 0	1.4040 sec, 1	NAD 83
2)	Reason(s) for plugging	well: Well	is located in FW	DA parcel I	0B, was inst	alled in 1963	, and is used only for
	water level measuremen	nt. The well is no	longer needed for	or any of the	FWDA pros	grams.	7.
				32			# <u></u>
3)	Was well used for any t what hydrogeologic pa						
	water, authorization fro	m the New Mexic	o Environment [Department	may be requi	red prior to p	lugging.
4)	Does the well tap brack	ich saline or othe	erwise poor quali	ty water?	No	If was provid	e additional datail
*)	including analytical res						•
	including analytical les	uits and or radorat	ory report(s).				-
							GV.
			_				
5)	Static water level:	12.4 feet belo	ow land surface /	feet above	land surface	(circle one)	

6)	Depth of the well: feet
7)	Inside diameter of innermost casing: 12.0 inches.
8)	Casing material:steel
9)	The well was constructed with:
	an open-hole production interval, state the open interval:
	a well screen or perforated pipe, state the screened interval(s): Yes, but interval unknown.
10)	What annular interval surrounding the artesian casing of this well is cement-grouted?NA
11)	Was the well built with surface casing?Yes If yes, is the annulus surrounding the surface casing grouted
	or otherwise sealed? <u>unknown</u> If yes, please describe: <u>Steel above-ground protective casing with</u>
	Portland cement plug and pad. Presence of a seal is unknown.
12)	Has all pumping equipment and associated piping been removed from the well?yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.
v. Di	ESCRIPTION OF PLANNED WELL PLUGGING:
pipe, a	If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional cal information, such as geophysical logs, that are necessary to adequately describe the proposal.
1)	Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology
	proposed for the well: The well will be plugged in accordance with 19.27.4.30 C NMAC using a neat cement
	slurry. The well will be filled from the bottom upwards to land surface using a tremie pipe. If no annular seal is
	present, the upper 20 feet of annulus will be grouted.
2)	Will well head be cut-off below land surface after plugging? Yes
VI. P	LUGGING AND SEALING MATERIALS:
Note:	The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant
1)	For plugging intervals that employ cement grout, complete and attach Table A.
2)	For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
3)	Theoretical volume of grout required to plug the well to land surface: 658.24 gal. (88 ft ³)
4)	Type of Cement proposed: Portland Type I/II
	Sit TAbri A
5)	
6)	Will the grout be: batch-mixed and delivered to the site
	X mixed on site

7)	Grout additives requested, and percent by dry weight relative to cement:	3-5% bentonite
,		
8)	Additional notes and calculations:	
0)	Additional notes and calculations.	
VII. A	DDITIONAL INFORMATION: List additional information below, or on sep	parate sheet(s):
#3: Tł	ne well was installed in 1963 in parcel 10B for reasons unknown. There are no	well logs for this well.
Engine	David Henry , say that I have careful for Operations and any attachments, which are a part hereof; that I am familiar with the plugging of wells and will comply with them, and that each ang Plan of Operations and attachments are true to the best of my knowledge and the plugging of wells and will comply with them, and that each are true to the best of my knowledge and the plugging of Applicant signature of Applicant	and all of the statements in the Well belief.
IX. A	CTION OF THE STATE ENGINEER:	123
This W	ell Plugging Plan of Operations is:	c 71
	Approved subject to the attached conditions. Not approved for the reasons provided on the attached letter.	8
	Witness my hand and official seal this	ber , 2014
	Scott A. Verhines, State	Engineer
	20 1/28	

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			0
Bottom of proposed interval of grout placement (ft bgl)			112.0 ft.
Theoretical volume of grout required per interval (gallons)			658.24 gal. (88 ft ³)
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			MAX 7.2 4A ISAGE TOTA FOR 31. BENTONITE BOWN 7.4 MAX 8.5 CAL ISAGE TOTAL FOR
Mixed on-site or batch- mixed and delivered?			Mixed on-site
Grout additive I requested			Bentonite
Additive 1 percent by dry weight relative to cement			3-5%
Grout additive 2 requested			n/a
Additive 2 percent by dry weight relative to cement			n/a

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval I – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			n/a
Bottom of proposed sealant of grout placement (ft bgl)			n/a
Theoretical volume of sealant required per interval (gallons)			n/a
Proposed abandonment sealant (manufacturer and trade name)			n/a

2014 CT 26 PH to 36

