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By Mike Buchanan at 4:39 pm, Apr 22, 2024

**STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER**

AZTEC

Mike A. Hamman, P.E.  
State Engineer100 Gossett Drive, Suite A  
Aztec, New Mexico 87410

January 11, 2024

Harvest Four Corners, LLC  
Attn: K. Kaufman  
1111 Travis Street  
Houston, TX 77002Accepted for the  
record.**RE: Well Plugging Plan of Operations for one unpermitted Monitoring Well (MW-2), Harvest Four Corners Oshea 1M Site, No OSE File Number**


Greetings:

On December 21, 2023, the New Mexico Office of the State Engineer (OSE) received a Well Plugging Plan of Operations submitted by Ensolum on behalf of Harvest Four Corners. The plugging plan proposes the plugging of one monitoring well (MW-2) associated with the site investigation of Oshea 1M as approved by NMOCD. NMOSE approves the proposed Well Plugging Plan of Operations with the attached Specific Plugging Conditions (enclosed).

Within 30 days after completion of well plugging, please submit a completed well Plugging Record (OSE Form WD-11) describing the actual abandonment process and itemizing the materials used. The plugging record should be sent to the NMOSE District V, 100 Gossett Drive, Suite A, Aztec, NM, 87410.

If you have any questions regarding this correspondence, please feel free to contact me at (505) 383-4571.

Sincerely,

  
Miles Juett  
Watermaster  
Water Rights Division – District V

Enclosures

cc: Aztec Reading (w/o enclosures)  
Aztec P&A File



# WELL PLUGGING PLAN OF OPERATIONS



NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology [geoinfo.nmt.edu/resources/water/cgmn/](http://geoinfo.nmt.edu/resources/water/cgmn/) if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email [nmbg-waterlevels@nmt.edu](mailto:nmbg-waterlevels@nmt.edu), prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

**I. FILING FEE:** There is no filing fee for this form.

**II. GENERAL / WELL OWNERSHIP:** ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: N/A (MW-2 at Oshea 001M)

Name of well owner: Harvest Four Corners

Mailing address: 1111 Travis Street

County: \_\_\_\_\_

City: Houston

State: \_\_\_\_\_

Texas

Zip code: 77002

Phone number: 713-209-2400

E-mail: kkaufman@hilcorp.com

## III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: MW Electric Inc.

New Mexico Well Driller License No.: WD-1842

Expiration Date: 5/4/2024

**IV. WELL INFORMATION:** ☒ Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 36 N deg, 55 min, 57.07 sec  
Longitude: -108 W deg, 11 min, 36.29 sec, NAD 83

2) Reason(s) for plugging well(s):

Environmental monitoring well MW-2 at the O'Shea #001M site (Well API: 30-045-23618), Incident # NAUTOFAB000433 is no longer necessary and the site is due for release, all constituent concentrations are below NMWQCC standards, well P&A approved by the NMOCD.

3) Was well used for any type of monitoring program? Yes If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? No If yes, provide additional detail, including analytical results and/or laboratory report(s): \_\_\_\_\_

5) Static water level: 9-13 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 15 feet

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- 7) Inside diameter of innermost casing: 4 inches.
- 8) Casing material: SCH 40 4-inch PVC
- 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): 10 ft each well
- 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? No If yes, please describe:
- 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. DESCRIPTION OF PLANNED WELL PLUGGING:** ☐ If plugging method differs between multiple wells on same site, a separate form must be completed for each method.

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:  

Plugging will be accomplished by filling them with a neat cement slurry from bottom up with a tremie pipe. 5.2-6.0 gallons of water per 94 lb sack of type I/II Portland cement will be used
- 2) Will well head be cut-off below land surface after plugging? yes

**VI. PLUGGING 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. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

- 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: 0.1632 gallons/foot
- 4) Type of Cement proposed: Type I/II portland cement
- 5) Proposed cement grout mix: 5.2-6.0 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

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7) Grout additives requested, and percent by dry weight relative to cement:

NA

8) Additional notes and calculations:

NA

**VII. ADDITIONAL INFORMATION:** List additional information below, or on separate sheet(s):

NA

**VIII. SIGNATURE:**

I, Wesley Weichert, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Wesley Weichert  
Signature of Applicant

12/21/2023  
Date

**IX. ACTION OF THE STATE ENGINEER:**

This Well Plugging Plan of Operations is:

☒ Approved subject to the attached conditions.  
☐ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 11 day of January, 2024

Mike A. Hannan, PE., New Mexico State Engineer

By: [Signature]

Miles Tuett, Watermaster

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**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)			
Bottom of proposed sealant or grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

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**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)	15		
Theoretical volume of grout required per interval (gallons)	32		
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			
Mixed on-site or batch-mixed and delivered?	onsite		
Grout additive 1 requested	None		
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

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**DISTRICT V**  
**Mike A. Hamman, P.E.**  
**NEW MEXICO STATE ENGINEER**

On December 21, 2023, the New Mexico Office of the State Engineer (NMOSE) received a Well Plugging Plan of Operations for one well (MW-2) previously used for monitoring groundwater conditions. The plugging plan was submitted by Ensolum, LLC, for Harvest Four Corners, LLC. The existing and unpermitted monitoring well (*no OSE File numbers*), as listed below, shall be plugged and abandoned in accordance with 19.27.4 NMAC. The well to be plugged is associated with the Harvest Four Corners Oshea 1M site. The well is no longer required for site monitoring. Plugging will be performed by MW Electric Inc., under well driller license WD-1842. Depth-to-water in the well ranges from 9-13 feet below land surface, with a total well depth of approximately 15.

Location: Harvest Four Corners, Oshea 1M well site location, NE/4 NW/4 SE/4 NW/4 of Section 3, T31N, R13W, San Juan County, New Mexico. Approximate coordinates for each monitoring well to be abandoned are listed below (Lat/Long, DMS, WGS84).

<u>Well Name</u>	<u>Casing - Inside Diameter (inches)</u>	<u>Latitude North</u>	<u>Longitude West</u>
MW-2	4-inch PVC	36° 55' 57.07"	108° 11' 36.29"

**Specific Plugging Conditions of Approval, Monitoring Well MW-1, Harvest Four Corners Oshea 1M Site Investigation:**

1. Water well drilling and other 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 NMOSE. Thus, well plugging shall be performed by a New Mexico licensed Well Driller.
2. Obstructions in the well/borehole shall be identified and removed if possible. If an obstruction cannot be removed, the method used to grout below and around the obstruction shall be described in detail in the plugging record.
3. The theoretical volume of sealant required for abandonment of a two-inch well casing is approximately 0.17 gallons per linear foot of casing. The theoretical volume of sealant required for abandonment of each well casing shall be determined prior to plugging. The total minimum volume of sealant shall be calculated based on the actual measured pluggable depth of the well and the volume factor for the casing diameter. The volume of sealing material placed in the well shall be compared with the theoretical volume to verify the actual volume of sealant is equal to or exceeds the theoretical volume.
4. The Well Plugging Plan of Operations submitted proposes the use of Portland Type I/II Cement as the plugging sealant. The water mixed with the cement to create the plugging sealant shall be potable water or of similar quality. Portland cement has a fundamental water demand of 5.2



gallons of water per 94-lb sack of cement. Up to a maximum of 6.0 gallons per 94-lb sack is acceptable to allow for greater pumpability.

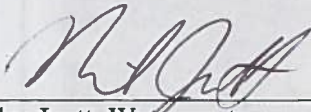
This plugging plan also proposes the addition of 6% bentonite powder to the Portland cement slurry. Pure bentonite powder ("90 barrel yield") is allowed as a cement additive by NMOSE and American Water Works Association (AWWA) guidelines. Neither granular bentonite nor extended-yield bentonite shall be mixed with cement for the purpose of this plugging activity. When supplementing a cement slurry with bentonite powder, water demand for the mix increases at a rate of approximately 0.65 gallon of water for each 1% increment of bentonite bdwc (by dry weight cement) above the stated base water demand of six gallons of water per 94-lb sack of cement for neat cement. Bentonite powder must be hydrated separately with its required increment of water before being mixed into the wet neat cement. If water is otherwise added to the combination of dry ingredients or the dry bentonite is blended into wet cement, the alkalinity of the cement will restrict the yield of the bentonite powder, resulting in excess free water in the slurry and excessive cement shrinkage upon curing.

5. Placement of the sealant within the well(s) shall be by pumping through a tremie pipe extended to near the bottom of the well and kept below the top of the slurry column (i.e., immersed in the slurry) as the well is plugged from bottom upwards in a manner that displaces the standing water column.
6. Prior to, or upon completion of plugging, the well casing may be cut-off below grade as necessary to allow for approved construction onsite, provided a minimum six-inch thickness of reinforced abandonment plugging sealant or concrete completely covers the top of the cut-off casing. Any remaining void to the surface maybe filled with native soil, concrete, or asphalt as needed to match the surrounding surface material and blended with the surface topography to prevent ponding.
7. Should NMED or another regulatory agency sharing jurisdiction of the project authorize or by regulation require a more stringent well plugging procedure than herein described, the more stringent procedure shall 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.
8. Witnessing of the plugging work by NMOSE will not be required, but shall be facilitated if an NMOSE observer is onsite. NMOSE witnessing may be requested during normal work hours by calling the NMOSE - District V Office at (505) 334-4571, at least 48 hours in advance. NMOSE inspection will occur depending on personnel availability.
9. **Within 30 days after completion of well plugging, a complete well Plugging Record shall be filed with the State Engineer** in accordance with Paragraph (3) of Subsection C of 19.27.4.30 NMAC for each well plugged. The Well Plugging Record(s) shall be filed with the State Engineer at the NMOSE District V Office, 100 Gossett Drive, Suite A, Aztec, NM 87410. The well plugging record form (WD-11) can be downloaded from this website: <http://www.ose.state.nm.us/WR/forms.php>.
10. While documentation may or may not have been provided with this Well Plugging Plan of Operations indicating that access has been granted for any aforementioned well(s) located on



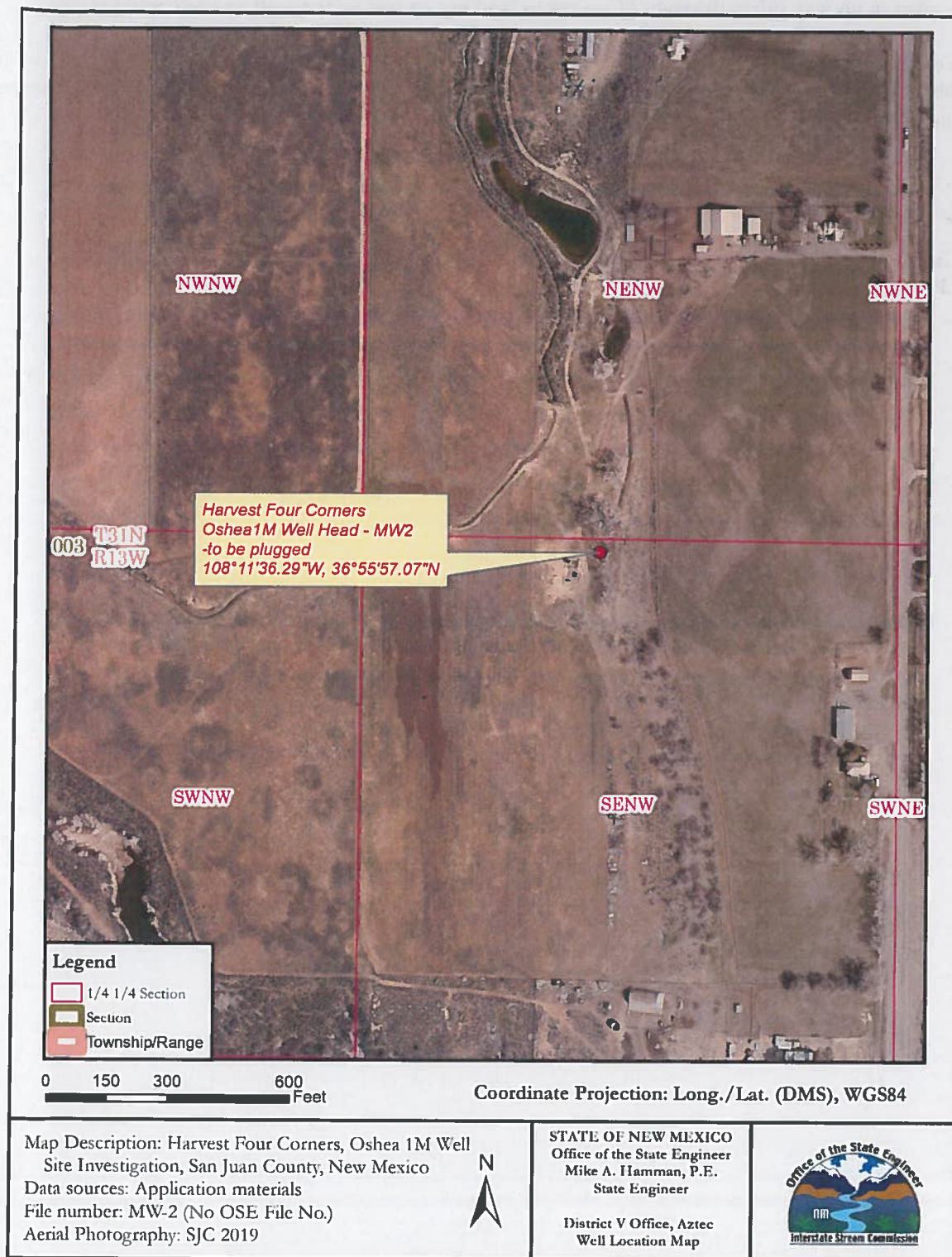
property owned by someone other than the well owner/applicant, OSE approval of this plugging plan in no way infers the right of access to land not owned by the well owner/applicant.

The Well Plugging Plan of Operations received December 21, 2023 , with NMOSE annotations (if applicable) is hereby approved with the aforesaid conditions applied, when signed by an authorized designee of the State Engineer:



Miles Juett, Watermaster  
Water Rights Division District V

Date: January 11, 2024



**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  
  
Action 315290

CONDITIONS

Operator: Harvest Four Corners, LLC 1755 Arroyo Dr Bloomfield, NM 87413	OGRID: 373888
	Action Number: 315290
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Well Plugging Plan for Oshea 1M (MW-2), submitted by Harvest Four Corners has been accepted for the record.	4/22/2024