



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.

REVISED

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

II. GENERAL / WELL OWNERSHIP:

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: E-7871-S

Name of well owner: Cypress, Inc.

Mailing address: c/o HydroGeologic Services, Inc. - Bill Whaley P.O. Box 94716

City: Albuquerque State: NM Zip code: 87199-4716

Phone number: [REDACTED] E-mail: [REDACTED]

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: HydroGeologic Services, Inc.

New Mexico Well Driller License No.: [REDACTED] Expiration Date: March 31, 2013

IV. WELL INFORMATION:

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

1) GPS Well Location: Latitude: 35 deg, 14 min, 5.9 sec
Longitude: 105 deg, 57 min, 45.8 sec, NAD 83

2) Reason(s) for plugging well: Drilled 12" borehole to 800 feet using mud rotary method
consultant declared borehole did not produce enough water therefore well casing
was never set.

3) Was well used for any type of monitoring program? No 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: N/A feet below land surface feet above land surface (circle one)

6) Depth of the well: 800 feet

2012 SEP 19 8:11:59 AM
STATE ENGINEER OFFICE
ALBUQUERQUE, NEW MEXICO



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Phone number: [REDACTED] E-mail: [REDACTED]

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: HydroGeologic Services, Inc.

New Mexico Well Driller License No.: WD-1472 Expiration Date: March 31, 2013

IV. WELL INFORMATION:

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

2012 AUG 27 PM 4:25
STATE ENGINEER OFFICE
ALBUQUERQUE, NEW MEXICO

1) GPS Well Location: Latitude: 35 deg, 14 min, 5.9 sec
Longitude: 105 deg, 57 min, 45.8 sec, NAD 83

2) Reason(s) for plugging well: Drilling a new and encountered a dry hole

3) Was well used for any type of monitoring program? No 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: N/A feet below land surface / feet above land surface (circle one)

6) Depth of the well: 800 feet

- 7) Inside diameter of innermost casing: N/A inches.
- 8) Casing material: _____
- 9) The well was constructed with:
 an open-hole production interval, state the open interval: Open hole 12" from 40' to 800'
 a well screen or perforated pipe, state the screened interval(s): _____
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? _____
- 11) Was the well built with surface casing? yes If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? yes If yes, please describe: 12" .188 wall steel casing x 40 feet with cement grout installed by tremie.
- 12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

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.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: Pump in cement w/tremie pipe
- 2) Will well head be cut-off below land surface after plugging? yes

STATE ENGINEER OFFICE
 ALBUQUERQUE, NEW MEXICO
 2012 SEP 17 AM 11:59

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

- 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: 628 ft³
- 4) Type of Cement proposed: Portland Type II
- 5) Proposed cement grout mix: 8.5 gallons of water per 94 pound sack of Portland cement.
- 6) Will the grout be: _____ batch-mixed and delivered to the site
 mixed on site

- 7) Inside diameter of innermost casing: 8 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): _____
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? _____
- 11) Was the well built with surface casing? yes If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe: _____
- 12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

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.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: Pump in cement w/tremie pipe
- 2) Will well head be cut-off below land surface after plugging? yes

STATE OF MISSISSIPPI
 MISSISSIPPI DEPARTMENT OF REVENUE
 2017 AUG 27 PM 4:25

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

- 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: _____ ft
- 4) Type of Cement proposed: Portland Type II
- 5) Proposed cement grout mix: 8.5 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

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)			800
Theoretical volume of grout required per interval (gallons)			4,710
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 Gal. H2O to 94 lb. cement
Mixed on-site or batch-mixed and delivered?			On Site
Grout additive 1 requested			5% Bentonite
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

STATE ENGINEER OF THE
 A PROPOSED, NEW WELL
 2012 SEP 17 11:12:00

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)			3
Bottom of proposed interval of grout placement (ft bgl)			800
Theoretical volume of grout required per interval (gallons)			2,460
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 Gal. H2O to 94 lb. cement
Mixed on-site or batch-mixed and delivered?			On Site
Grout additive 1 requested			5% Bentonite
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

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)			

2012 AUG 27 PM 4: 26

STATE OF TEXAS
 DEPARTMENT OF
 AGRICULTURE
 1100 EAST 17TH ST
 AUSTIN, TX 78762



DISTRICT 1
SCOTT A. VERHINES, P.E.
NEW MEXICO STATE ENGINEER

Materials submitted by HydroGeologic Services, Inc., on behalf of Cypress Inc., identify an 12"-borehole (E-7871-S) to be plugged. Plugging services will be provided by HydroGeologic Services, Inc. (WD-1472).

Permittee: Cypress Inc. - c/o HydroGeologic Services, Inc., Billy Whaley P.O. Box 94716, Albuquerque, NM, 87199-4716

Reason for Plugging: Drilled 12" borehole to 800 feet using mud rotary method; consultant declared borehole did not produce enough water therefore well casing was never set.

Approximate site coordinates: 35° 14' 5.9" N, 105° 57' 45.8" W - Latitude/Longitude, NAD 83

Permit No.: E-7871-S, approved Artesian Well Plan on July 6, 2012, at the location listed above.

Specific Plugging Conditions of Approval for a well E-7871-S, permitted by Cypress Inc., within the Estancia Underground Basin

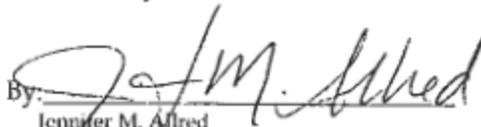
1. Water well drilling and well drilling activities, including well plugging, are regulated under 19.27.4 NMAC, which requires any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the New Mexico Office of the State Engineer (NMOSE). Therefore, the firm of a New Mexico licensed Well Driller shall perform the well plugging.
2. Theoretical volume of sealant required for abandonment of an 12"-borehole is approximately 5.88 gallons/foot. Total minimum volume of necessary sealant shall be calculated upon sounding the actual pluggable depth of the well.
3. The Well Plugging Plan of Operations submitted requests the use of 5% bentonite-enriched cement. When supplementing a cement slurry with bentonite 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 5% bentonite/cement slurry may therefore contain up to 8.45 gallons of water total per 94-lb. sack of cement / approximate 5-lb. bentonite increment when appropriately mixed.

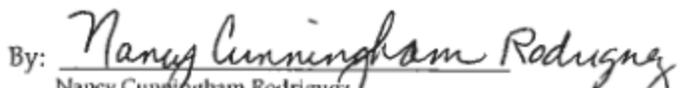
The bentonite should be hydrated separately with its required increment of water before being mixed into the cement slurry. If water is otherwise added to the combination of dry ingredients or the dry bentonite blended into wet cement, the alkalinity of the cement will restrict yield of the bentonite powder, resulting in excess free water in the slurry and enhanced cement shrinkage upon curing.

4. Placement of the sealant 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 the standing water column.
5. Any open annulus encountered surrounding the casing shall also be sealed by the placement of the approved cement grout mix. Prior to, or upon completion of plugging, the well casing may be cut-off below grade as necessary to allow approved redevelopment of the site, provided a minimum 6-inch thickness of reinforced abandonment grout or concrete completely covers the top of the cut-off casing. More stringent local building codes may apply.
6. Should the NMED, 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.
7. NMOSE witnessing of the plugging will not be required, but shall be facilitated if a NMOSE observer is onsite. NMOSE witnessing may be requested during normal work hours by calling the District 1 NMOSE Office at 505-383-4000, at least 48-hours in advance. NMOSE inspection will occur dependant on personnel availability.
8. 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 87109-4127), within 20 days after completion of well plugging. Please attach a copy of these plugging conditions.

The NMOSE Well Plugging Plan of Operations, as annotated, is hereby approved with the aforesaid conditions applied.

Witness my hand and seal this 18th day of September, 2012:

By: 
Jennifer M. Alfred
Water Resource Specialist
NMOSE District 1

By: 
Nancy Cunningham Rodriguez
Water Resource Supervisor
NMOSE District 1



STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

DISTRICT I

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

5550 San Antonio Drive, NE
Albuquerque, NM 87109 [REDACTED]

September 18, 2012

File: E-7871-S

Cypress Inc.
c/o HydroGeologic Services, Inc.
Billy Whaley
P.O. Box 94716
Albuquerque NM, 87199-4716

Re: **Well plugging Plan**

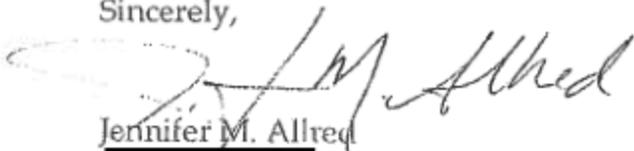
Greetings:

The Office of the State Engineer is in receipt of your plugging plan filed August 27 and resubmitted on September 17, 2012. The plans have been reviewed and are hereby approved, subject to the attached **Specific Plugging Conditions of Approval**.

Please deliver a copy of this plugging plan with attached conditions to the well driller contracted to provide plugging services.

If discussion is needed, please call us.

Sincerely,


Jennifer M. Allred
[REDACTED]

JMA:jma
enclosures as stated

EFTA00309251