RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

January 3, 2013

ATTN LUKE PENT
A TO Z MUD CO INC
307 W 7TH ST STE 905
FORT WORTH TX 76102

Re: Permit No. MR-0010
Authorization to Treat Fresh Oil Base Drilling Mud and Cuttings for Re-Use
State of Texas
Districts 1, 2, 3, 4, 5, 6, 7B, 7C, 8, 8A, 09, and 10

In response to your October 23, 2012 request to amend the referenced permit, the enclosed amended permit constitutes the authority of A to Z Mud Company, Inc. to operate statewide the above referenced mobile recycling facility in accordance with the conditions of the permit.

You may contact Rob Conti at (512) 463-4056 or me at (512) 463-5405 should you have any questions.

Michael Sims

Michael Sims, P.E., Manager
Environmental Permits and Support
Technical Permitting

cc: All RRC Districts

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

A TO Z MUD CO INC
307 W 7TH ST STE 905
FORT WORTH, TX 76102

Re: Permit No. MR-0010
Authorization to Treat Fresh Oil-Base Drilling Mud and Cuttings for Re-Use
State of Texas
Districts 1, 2, 3, 4, 5, 6, 7B, 7C, 8, 8A, 09, and 10

This permit supersedes the permit initially issued to A to Z Mud Company, Inc. on May 25, 2011and amended on December 19, 2012. Based on information contained in your original application received January 11, 2011, and subsequent information received to date, including a request to amend your permit received on October 29, 2012, you are hereby authorized to store, handle, treat and re-use fresh-water-base and oil-base drilling mud and cuttings generated in the referenced Commission Oil and Gas Districts for re-use for the following load-bearing structures in the referenced Commission Oil and Gas Districts: lease roads, drilling pads, tank batteries, compressor station pads, and county roads. This authority is subject to the following minimum conditions:

I. GENERAL PERMIT CONDITIONS

A. The effective date of this permit is January 3, 2013.

B. The authority granted by this permit expires on May 24, 2016 .

C. The Commission may consider this permit for administrative renewal upon review.

D. Any request for renewal should be received at least 60 days prior to the permit expiration date. The Commission may consider administrative renewal of the permit upon review.

E. This permit is not transferable without the consent of the Commission. Any request for transfer of this permit should be filed with Technical Permitting in Austin at least 60 days before the permittee wishes the transfer to take place.

F. This permit does not authorize the discharge from the treatment sites of any oil and gas waste, including contaminated stormwater.

G. The treated oil and gas waste must be mixed, stored, handled and applied in such a manner that the ~~tr~~eated waste will not migrate off the site or enter any drainage ditch, dry creek, flowing creek, river or any other body of surface water.

H. Material Safety Data Sheets must be submitted to the Austin Office and the appropriate District Office for any chemical proposed to be used in the treatment of waste. Use of the chemical is contingent upon Commission approval.

I. Any soil, media, or other debris contaminated by a spill of waste or any other materials at the treatment sites shall be promptly cleaned up and processed through the treatment cycle or disposed of in an authorized manner.

J. The permittee shall make all records required by this permit available for review and/or copying during normal business hours upon request of Commission personnel.

K. Failure to comply with any provision of this permit shall be cause for modification, suspension or termination of this permit. This permit may be canceled if Technical Permitting determines that the permittee is in violation of the conditions of this permit or if permittee's operations pursuant to the permit are causing or allowing pollution of surface or subsurface water.

L. An independent laboratory neither owned nor operated by the permittee must conduct any analysis of sampling required by this permit.

II. TRIAL RUN

The permittee must demonstrate the ability to successfully process a one thousand cubic yard batch of oil-base drilling mud and cuttings.

A. Technical Permitting in Austin and the appropriate District Office must be notified in writing at least 48 hours before waste processing begins.

B. Samples of the processed waste must be collected and analyzed as required by Condition III.D.2.

C. Samples shall be collected from every 200 cubic yards of a 1000 cubic yard batch and analyzed for wetting and drying durability by ASTM D 559-96, modified to provide that samples are compacted and molded from finished processed material. Total weight loss after 12 cycles may not exceed 15%.

D. A written report of the Trial Run must be submitted to Technical Permitting in Austin and the appropriate District Office within 60 days of receipt of the analyses required in Condition III.D.2. The following information must be included:

1. The actual volume of waste material processed.
2. The volume of stabilization material used.
3. Copies of all lab analyses required by Conditions III.D.2.

E. The final processed material must meet the limitations of Conditions III.D.2.

III. SITING, CONSTRUCTION, OPERATION AND PROCESS CONTROL

A. SITING

1. The storage cells at the drill sites and the location at the receiving sites may not be located:

   a. Within a 100 year floodplain.

b. In a streambed.
c. In a sensitive area.

2. The storage cells at the drill sites and the location at the receiving sites must be located:

   a. Above the top of the seasonal high water table.
   b. At least 100 feet from surface water.
   c. At least 150 feet from water wells.

B. CONSTRUCTION

1. The storage cells located at the drill sites shall be designed to prevent stormwater runoff from entering the area.
2. The storage cells located at the drill sites shall be surrounded by berms with a minimum width at base of 3 times the height.
3. If the treatment cell/areas located at the receiving sites are constructed with a berm, the height, slope, and construction material of such berms shall be such that they are structurally sound and do not allow seepage.

C. OPERATION

1. The appropriate District Office must be notified in writing at least 48 hours prior to treatment at any site outside of a tank or reserve pit. Notification must include the location of the site including when assigned the Lease Number or Gas I.D. Number and Well Number, API Number or county road number.
2. Oil-base mud from no more than a few wells may be treated at any one site.
3. Treatment and re-use may only occur on the surface of oil and gas leases owned by the same operator who generated the mud and cuttings or on county roads. Partially treated material may be placed on impermeable liners and roller compacted into a running surface on lease roads or pads under the control of the original waste generator. Once the material matrix has cured, the material must be sampled and submitted for testing for environmental standards specified in Condition III.D.2. If said partially treated material meets or surpasses standards specified in Condition III.D.2., the compacted material may remain on impermeable liners indefinitely. If said partially treated material fails to meet standards specified in Condition III.D.2., the material shall be removed and reprocessed or disposed of in an authorized manner.
4. The permittee must notify the surface owner prior to placing the oil-base mud and cuttings on the surface for treatment and/or re-use. Cuttings may be stored on impermeable plastic liners with a minimum thickness of 30 mil for a maximum time of two weeks during the duration of the drilling. The cuttings must be treated immediately after the drill rig and associated equipment has left the drill site.
5. The permittee must obtain written permission from the county commissioners prior to re-using the treated waste on county roads.
6. Prior to stabilizing, all untreated cuttings may be subjected to washing with water, provided that all resulting waste water generated by the washing process is stored in

frac tanks or other authorized impermeable above-ground containers until disposal via permitted salt-water disposal wells or other state-authorized landfills. Oil-base mud and cuttings shall be mixed with and stabilized at the drill site with appropriate amounts or mixtures of Portland cement, lime, sand, limestone, fly ash and/or aggregate. Mixing shall be done mechanically with a trackhoe, dozer, pug mill, and/or comparable machinery.

7. After stabilizing the mud and cuttings, the waste shall be removed and stored in a storage cell at the drill site.
8. The waste in all storage cells at the drill site shall be tested for salinity, metals and hydrocarbons.
9. Excess rainwater collected within a bermed area shall be removed and disposed of in an authorized manner.
10. The recycled material in the storage cell at the drill site shall be moved to the receiving site, spread using a dozer, and compacted. Appropriate amounts of cement kiln dust, fly ash, lime kiln dust, Portland cement or lime shall then be applied over the compacted waste and mixed with a rototiller. The waste shall then be watered, compacted and bladed. Free standing wastewater from a storage cell at the drill site may be used to supply all or part of the required water.
11. A mobile recycling unit may operate at a single location for no longer than 60 days. Within the following 60 days: all processing equipment and partially treated or recycled material must be reused or removed; final grading and site restoration must be completed; and any waste water that is generated from washing recycling equipment on an as-needed basis must be disposed via injection in permitted salt-water disposal wells or by other state-authorized methods.
12. Appropriate measures shall be taken to control dust at all times.

D. PROCESS CONTROL

1. Bench scale tests shall be performed as needed to determine optimum mixing design.
2. A sample of the final treated material at each receiving site shall be tested by a third-party laboratory for the parameters listed below for every 800 tons of material produced. Each 800-ton sample shall be tested for compressive strength. For the SPLP and 7-Day Leachate Test, each 800-ton lot sample shall be composed of four (4) sub-samples obtained at 200-ton intervals. The samples shall be analyzed for the following parameters:

PARAMETER	LIMITATION
Compressive Strength by Method Tex-113-E, Tex-241-F, Tex-226-F, or Tex-117-E	35 psi minimum
SPLP by EPA Method 1312	
Metals	
Arsenic	<5.00 mg/l

Barium	<100.00
Cadmium	<1.00
Chromium	<5.00
Lead	<5.00
Mercury	<0.20
Selenium	<1.00
Silver	<5.00
Benzene	<0.50

PARAMETER (cont.)	LIMITATION (cont.)
1:4 Solid: Solution 7-Day Leachate Test (LAC 43:XIX.Subpart 1)	
Chlorides	<700.00
TPH	<100.00
pH (Standard Units)	6 – 12.49

3. Any material not meeting the limitations in Condition III.D.2. shall be returned to the mixing cycle and reprocessed.
4. Processed material meeting or exceeding process control parameters listed in Condition III.D.2. is suitable for use on lease roads, drilling pads, tank batteries, compressor station pads, and county roads.

IV. RECORDKEEPING AND REPORTING REQUIREMENTS

A. RECORDKEEPING

1. Records must be kept of all waste treated for a period of three (3) years from the date of treatment. These records must include the following:
   a. Name of the generator.
   b. Source of the waste (Lease Number or Gas I.D. Number and Well Number, or API Number).
   c. Date the waste is treated at the drill site.
   d. Volume of the waste treated at the drill site.
   e. Date waste is removed to the storage cell at the drill site.
   f. Salinity and TPH of the treated waste and free standing wastewater in the storage cells at the drill site.
   g. Date treated waste is removed to the receiving site.
   h. Volume of treated waste removed to the receiving site.
   i. Date free standing wastewater is removed to the receiving site.
   j. Volume of free standing wastewater removed to the receiving site.
   k. Name of the carrier.
   l. Identification of the receiving site including the Lease Number or Gas I.D. Number and Well Number, API Number, or County Road Number.
   m. Documentation that the landowner of the receiving location has been notified of the use of the processed material on the landowner's property if used on private land.

n. Documentation that the Lease operator has approved the recycling operation on their lease and assumes responsibility for the use of the recycled material in a matter consistent with its authorized use or its disposal in an authorized manner in the timeframe specified in Condition No. III.C.11.
o. Documentation that the county commissioners have approved the use of the processed material on the county roads if used on county roads.
p. Copies of analyses demonstrating that the final processed material has met the limitations in Condition No. III.D.2.
q. Documentation indicating the approximate location where processed material is used including a topographic map showing the location of the area.

B. REPORTING

1. A copy of the records required in Permit Condition No. IV.A. must be submitted to Technical Permitting in Austin as part of the Semiannual Report required in Condition No. IV.C. of this permit. If no waste was treated within a reporting period, a written statement indicating that no waste was treated must be submitted to Technical Permitting in Austin as part of the Semiannual Report required in Condition No. IV.C. of this permit. For compressive strength analyses, each test report shall contain an explanation of why a specific test method was selected for each sample of final treated material.

C. SEMI-ANNUAL REPORT

1. Beginning six (6) months from the date of the permit and every six (6) months thereafter, permittee shall submit a Semiannual Report containing applicable information as required in Conditions III.C.1., III.C.5. and IV.B. of this permit for the previous six (6) month period.

V. CLOSURE

A. All reserve pits must be closed as required by Rule 8.

B. All processed material must be applied and re-used for lease roads, drilling pads, tank batteries, compressor station pads, or county roads or shall be disposed of in compliance with Commission rules.

C. All unused free standing wastewater remaining in any storage cell at a drill site shall be disposed of in an authorized manner.

D. All equipment must be removed from each site and any dikes leveled or removed.

E. The contents of any vessels or other containers shall be disposed of in an authorized manner.

This permit differs from the amended permit issued on December 19, 2012 by changing the effective date from December 19, 2012 to January 9, 2013; by adding and/or modifying material treatment, management and testing processes as specified in Conditions III.C.3., III.C.4., III.C.6., III.C.8., III.C.11, and III.D.2. to better reflect A to Z Mud's operating procedures as represented in its October 23, 2012 letter, and other minor editing and formatting changes. The expiration date remains the same as in the permit issued on May 25, 2011.

Failure to comply with any provision of this permit shall be cause for modification, suspension or termination of this permit. This permit may be canceled if Technical Permitting determines that the permittee is in violation of the conditions of this permit or if the permittee's operations pursuant to the permit are causing or allowing pollution of surface or subsurface water.

Michael Sims, P.E., Manager
Environmental Permits and Support
Technical Permitting

cc: All RRC Districts