APPLICATION TO OPERATE A FACILITY

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS RESOURCES MANAGEMENT
2045 MORSE ROAD, BUILDING F-2
COLUMBUS, OHIO 43229-6693
(614) 265-6922

1. Name of Applicant: Liquid Waste Solidification LLC Phone #: 330-502-4454
Address: 2337 Watson Marshall Rd. McDonald, OH 44437
Date: 03/16/2014 eMail Address: John@LiquidWasteSolidificationllc.com
For an Order or a Permit to Operate: ☒ Existing Facility ☐ New Facility

2. **PURPOSE OF FACILITY:** ☒ Storage ☐ Recycling ☐ Treatment
(Check all that Apply) ☒ Processing ☐ Disposal

3. **TYPE OF MATERIAL:**
☐ Brine ☒ Drill Cuttings
☒ Drilling Mud ☒ Other Waste Substance (explain) **Dirty Drilling Waters with light, medium, & heavy solids**

4. **If a Business Entity, list the statutory agent and include a certified copy of their appointment:**
Name: N/A
Address:

5. **Engineer of Record:**
Name: N/A
Address:
Ohio Professional Engineering License Number:

6. **Address of Facility:**
Address: 440 South 3rd St. Steubenville, OH 43952
County: Jefferson
Township: N/A
Municipal Corporation: Steubenville
Latitude: 40 21'4.50"N
Longitude: 80 37'3.39"W

7. **Write a brief description of the facility and operations:** Liquid Waste Solidification LLC ("LWS") currently operates pursuant to ODNR Order No. 2014-15 issued January 3, 2014. This Application to Operate relates to additional storage processes not encompassed in LWS's December 26, 2013 application.

LWS is a Pre Frac Non-Hazardous solidification facility. LWS tests all incoming materials to ensure that material are not flow back. LWS also ensures that no two sites materials coming to the facility are ever mixed together. LWS manifests and tracks all material from the point of origin rig site, to the hauler, to its disposition at LWS, and to the final disposal site as described below.

Third party licensed transporters deliver to LWS's facility pre-frac, non-hazardous material which fall into two categories: (1) heavy solids liquids and (2) light to medium solid liquids. Heavy solids liquids are placed directly into half rounds where LWS mixes the material with sawdust and quick lime to solidify the material to meet landfill requirements and to pass the paint filter test. All operations are conducted indoors; the LWS facility is constructed with a 36" thick concrete floor with absolutely no floor drains anywhere at the building. Once the material is solidified , it is hauled by a licensed transporter (currently RMH Services) to a landfill (currently APEX) for final disposal.

Light to medium solids liquids are delivered by third party licensed transporters to the facility and are placed in 500 barrel capacity frac tanks located in the facility building LWS allows the material to sit in the tank for 12- 24 hours during which time the solids settle to the tank bottom and the top water becomes clear. Using LWS's 50 parts per million filter pod system, an LWS subcontractor (currently Nuverra Environmental Services) arrives at the LWS facility, hooks the truck up to the filter system and extracts about 300 barrels of the cleanest water from the tank. The subcontractor disposes of that water off-site. (Nuverra currently disposes of this filtered water at its injection well facility called Goff.) The subcontractor separately removes approximately 100 barrels of the remaining 200 barrels of materials in the tank and disposes of this light dirty water at a permitted

treatment facility. (Nuverra currently uses either its Pander treatment facility or its AWS treatment facility.) LWS transfers the remaining 100 barrels of the material that now contains heavy solids to the half rounds where LWS adds sawdust and quick lime to solidify the material to meet landfill requirements and the paint filter test. A licensed transporter (currently RMH Services) then hauls the solidified material to an off-site, permitted landfill for disposal (currently APEX). .

LWS is requesting a revision to its current ODNR authorization to operate to cover up to twenty (20) 500 -barrel capacity frac tanks with total capacity of up to 10,000 barrels. All tanks will be located within the building on the concrete floor having no floor drains. LWS currently leases half of the building and will exercise the option to lease the remainder of the building upon receipt of ODNR's authorization. The frac tanks are constructed of gauge welded steel plate. In the unlikely event of a frac tank rupture or liquid release while filling or emptying the tanks, the building itself will act as a containment area for up to -------- gallons of liquid. Additional response actions are described in LWS's Operational Plan included with this application.

8. Include all information as set forth in the "*Guidelines for Application for Chief's Order*". Attach Additional Documents

I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge.

I certify that the facility will comply with or is currently in compliance with all provisions of Chapter 1509 ORC, Chapter 1501 OAC, and all terms and conditions of orders and permits issued by the Chief, Division of Oil and Gas Resources Management.

Signature of Authorized Agent _____

Name (Type or Print) John Ackworth Title VP

Sworn to and subscribed before me this the 31st day of March, 2014.

_____ (Notary Public)

NOTARY PUBLIC STATE OF OHIO

AMY J. HURTON
Notary Public, State of Ohio
My Commission Expires April 19, 2014

April 19, 2014 (Date Commission Expires)

Liquid Waste Solidification LLC (LWS)
Operational Plan for
Ohio Department of Natural Resources (ODNR)

LWS is a solidification company serving the oil and gas industry. LWS only accepts PRE FRAC NON HAZARDOUS material. LWS's operation is located at 440 South 3rd Street in Steubenville, Ohio 43952. The facility consists of an old steel mill building which is now a 58,000 sf warehouse. LWS currently leases half of the building and has the option to lease the remaining half. The warehouse is a steel building sitting on 36" thick concrete flooring. There is no plumbing in the building currently and it will remain that way. LWS provides portable restroom facilities for employees. LWS operates in compliance with all federal, state, and local laws and regulations, including all necessary permitting and licensing from the local governing agencies. LWS uses a process to ensure that all material disposal meets and/or exceeds all government requirements mandated by the state of Ohio and other governing bodies.

Material Process:

1. Initial Handling

Material is transported by truck to the LWS facility by companies hired by the rig sites.

Upon arriving at LWS, the driver comes into the office and provides the following login information:

1. Site of material origination;
2. Type and amount of material;
3. Transporting trucking companies information;
4. Truckers name, truck number, manifest #, truck type; and
5. Time / date in

(Truck drivers must be authorized to sign in for the hauling company that employs them and the rig site company, and must personally certify that all information provided is true and accurate.)

Each trucker is then assigned a bin number or frac tank number to take his material to and is given a material ticket to give to the LWS employee who assists in the unloading to verify material amounts and type.

Upon arriving at the assigned bin or frac tank, a containment catch container will be placed under the rear of the truck to catch any and all material that may leak out during transfer of material.

Once a frac tank is full, it will be left to sit and settle for a period of 12-24 hours allowing solid sediments to sink to the bottom of the tank.

After settling, LWS will attach a filter pod equipped with a 50 parts per million filter to the frac tank. (Filters to be changed as needed.) A contractor (currently Nuverra Environmental Solutions) will then come in with a water truck and extract water from the upper levels of the tank through the filter pod for placement into the truck. LWS continues this process until the water in the tank reaches a solids level where the water is too dirty to be filtered. The contractor will then haul the filtered water off-site for disposal. (Currently, the filtered water is hauled by Nuverra Environmental Solutions to an Nuverra Environmental Solutions injection well named Goff where it is disposed of. This well is shown on map attached to this packet.) The remaining material in the frac tank (usually around 200 bbls) is handled of as follows. After the cleanest water is filtered off, the contractor (currently Nuverra Environmental Solutions) then extracts the light solids dirty water out directly from the frac tank to a truck and takes it to a treatment facility. (Nuverra now utilizes either Pander treatment facility or AWS treatment facility for treatment and disposal. Both these facilities are shown on the map attached to this packet.) The remaining medium to heavy solids material in the bottom of frac tank is then transferred by LWS into one of its half round bins at the LWS facility.

2. Solidification

Once material is deposited in the half round bin, an LWS employee will evaluate the consistency of the material and choose which solidification material will be used (saw dust and/or quick lime) and the quantity necessary to achieve the level of solidification necessary to meet all landfill requirements as well as the EPA, ODNR, and ODH requirements. Attached are the MSDS sheets for LWS's solidification materials.

Material is then mixed by an LWS excavator.

Once the material solidifies to an acceptable level, LWS tests it with the paint strainer test.

Upon passing the paint strainer test, the material is then loaded by excavator into a lined dump truck/trailer for transport by a licensed third party to the landfill. Upon being loaded, the truck driver must login at the office with the following:

1. Transporting trucking companies information;

2. Truckers name, truck number, manifest #, truck type; and

3. Time out.

Trucker is then assigned a dump load ticket with all necessary information for the landfill.

Liquid Waste Solidification LLC (LWS)
Operational Plan for
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When the trucker returns from the landfill, he must turn in his ticket with material acceptance signature of the landfill as well as any and all information and papers issued by the landfill.

Half Round Bins:

LWS bins are 10' wide, 30' long, and 5'6" deep. They are equipped with two 4" fill couplings, two on each end. They are made with a 1/2" steel plating . Attached are the engineer's drawings of the bins.

(Add frac tank information.)

Nuisance Issues:

LWS works with local governing agencies to respond to any and all possible issues that might arise from traffic, dust, and noise. The location is zoned heavy industrial and local officials have given LWS their approval and support to operate at the chosen location.

Closure Plan:

Upon exiting the site, LWS will comply with lease and will leave the premises as it was at lease commencement, reasonable wear and tear excepted.

Spill Plan:

Because of LWS's centralized location, there are multiple clean up companies located within minutes of the plant that can be called at any given time to ensure the spill is cleaned up in a timely matter and to all applicable standards. LWS has absorbent boom snakes on hand and, within a moments notice, can reach to contain any spill. In addition, LWS has a Vac truck onsite and available at all times to respond to any spill.

Paper Trail:

LWS has devised and will implement a thorough and detailed paper trail for every load that comes through its doors from point of origin to point of disposal.

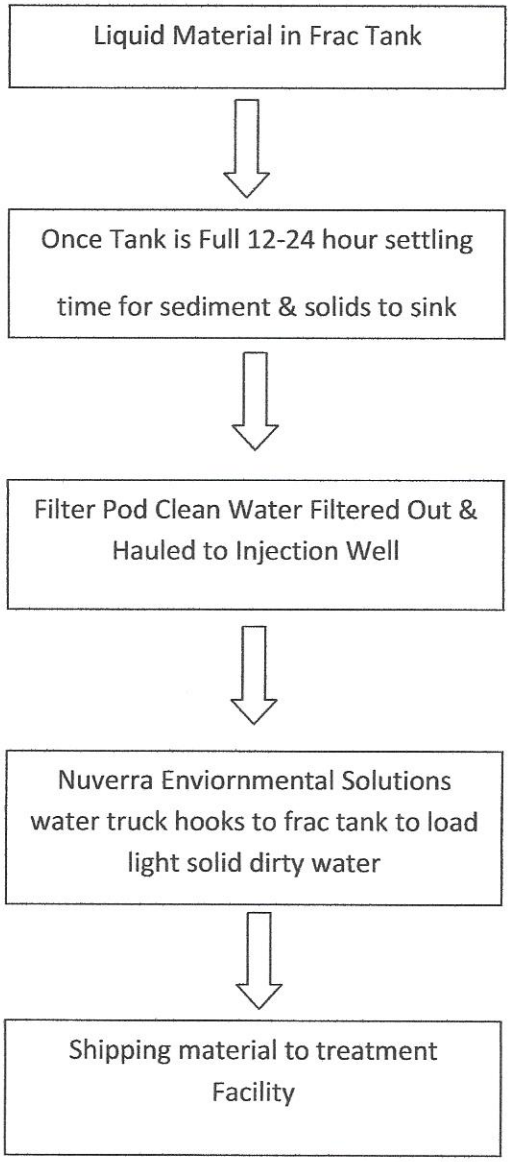
* * * * * * * *

LWS reserves the right to change this plan at any time consistent with applicable laws and approvals.

Liquid Waste Solidification LLC

Light Solid Dirty Water

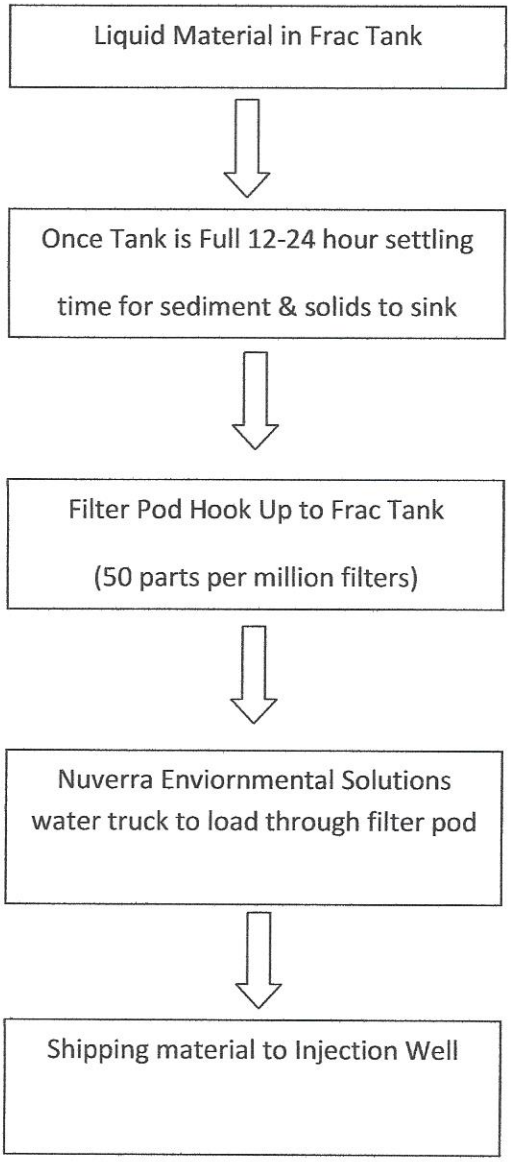
General Process Flow Schematic:



Liquid Waste Solidification LLC

Clean Water Settling & Filtering

General Process Flow Schematic:



View of Facility Building:

Blue Line High Lights facility building (Currently only occupying the half of the building highlighted) second half available for LWS to expand.

View of Truck Scale:

LWS has truck scale with radiation detectors available if needed.

View of Full Facility:

Red Line: High Lights road way to LWS Building

Blue Line High Lights facility building (Currently only occupying the half of the building highlighted) second half available for LWS to expand.