APPENDIX V – OTHER TREATMENT AND DISPOSAL OPTIONS

Permit application requirements for other treatment and disposal options as defined in Section 547, if applicable (Section 525)

In addition to the information requested in §519.C, the following information required in this Section must be provided in duplicate in each application for approval of a commercial Facilities incorporating the use of treatment and/or disposal options other than land treatment and as defined in §547.

1.0 A detailed description of the site with relation to the following:

1. Past and present land use;
2. Geology/soil properties/hydrogeology;
3. Drainage and flood control;
4. Hydrologic balance; and
5. Highest seasonal groundwater level.

1.1 The entire site is approximately 13.22 acres, and the permitted site is approximately 6.2-acres located in the SW ¼ of Section 17, Township 16 North, Range 8 West, Bienville Parish, Louisiana. The Permitted Facility Boundary encompasses approximately 6.2-acres of the 13.22-acre tract and does include the access roads, aboveground storage tanks, and three (3) injection wells. The previous land use was a brick plant. The present land use is the abandoned brick plant.

1.2 The surface and near surface areas of Bienville Parish in the vicinity of the property are covered by sedimentary deposits. According to the *Geologic Map of Louisiana* (1984) prepared by the Louisiana Geologic Survey, the Property is on Quaternary Intermediate Terraces (Qti). This formation consists of light gray to orange-brown clay, sandy clay, and silt and may contain much sand and gravel locally.

The proposed Facility is primarily in Uplands. The underlying soil on these uplands is the Malbis fine sandy loam (MgB), 1-3 percent slopes and the Bellwood silt loam (BDE), 5-15 percent slopes, according to the U. S. Department of Agriculture Natural Resources Conservation Service website (http://websoilsurvey.nrcs.usda.gov/), access date August 26, 2024.

The Malbis fine sandy loam is moderately well drained, very gently sloping to gently sloping soil is on uplands. It is loamy throughout and has plinthite in the lower part of the subsoil. Runoff is medium, and water and air move moderately slowly through the soil. These are well-drained, loamy soils with a high potential for productivity.

The Bellwood silt loam is somewhat poorly drained, strongly sloping soil in uplands. It is clayey throughout, or it has a thin loamy surface layer and clayey subsoil. Runoff is rapid. Water and air move very slowly through this soil. A

seasonal high-water table is 2 to 4 feet below the surface. The soil is acid throughout and has low fertility. The subsoil has an extremely high shrink-swell potential.

Brickyard will only develop the uplands portion of the property.

1.3 Natural drainage is generally to the south and east in Bienville Parish. Local groundwater flow likely follows the predominant surface topography in the area, to the south and east.

According to the U. S. Geological Survey (USGS), Bienville Parish is located in the Mississippi Embayment aquifer system. The parish has an abundant supply of water resources, including surface water in ponds, lakes, streams, and rivers. The primary freshwater-bearing aquifer in the western portion of Bienville Parish is the Carrizo-Wilcox aquifer. The base of the fresh groundwater (water with a chloride concentration of 250 milligrams per liter (mg/L) or less) formations range from the surface to 500-ft below sea level. The primary source of groundwater recharge for the Carrizo-Wilcox aquifer is from precipitation in the western portion of Bienville Parish.

The Site is located on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Bienville Parish, Louisiana and Incorporated Areas, FIRM Panel No. 22013C0280C, Effective Date July 3, 2006. The entirety of the Site is designated as Zone D. Zone D would be described as areas with possible but undetermined flood hazards.

1.4 The development of the proposed commercial SWD facility will not adversely impact the hydrologic balance of the area. Best Management practices will be implemented for drainage of storm water or rainwater to prevent contact with hydrocarbon or produced E and P waste impacted surfaces. During construction activities, best management practices will be implemented to limit the run-off of silts and maintain the hydrologic balance of surrounding streams and tributaries. The main offloading area for E and P waste liquids has 6-inch sealed seamless concrete containment berms to prevent run-on or run-off of storm water. The loading area for oil or condensate is equipped with a 6.5-gallon poly loading valve containment with cover and lock. Minor spills of oil are immediately contained within the poly loading valve containment and can be transferred to the oil tanks. A 5-gallon bucket is available at the loading site to contain the minimal amount of oil between valves when unhooking from the truck. More significant spills are contained on the sealed seamless concrete berm unloading area that is equipped with a sealed seamless concrete sump and fluid actuated sump pump to prevent any accumulation of fluid on the sealed seamless concrete unloading pad and send fluids through the treatment process. Absorbent materials to contain a spill are kept on site and will be utilized to control and minimize any spills that might occur while loading oil. The tank containment area has a capacity of approximately 15,271-barrels. Erosion control measures are implemented around the site to prevent excess erosion before and after construction. The perimeter of the site will be seeded after construction and grass maintained to prevent erosion. Best Management

Practices will be developed and maintained before and after construction. Storm water or rain water will drain to unnamed tributaries to the south and ultimately to Black Lake Bayou.

1.5 A seasonal high-water table on the uplands portion of the property that will be developed is 2-4 feet below ground surface in the Bellwood silt loam. The base of the fresh groundwater (water with a chloride concentration of 250 milligrams per liter (mg/L) or less) formations range from the surface to 500-ft below sea level.

2.0 A detailed description of the Facility design including maps and drawings and a discussion of the following:

1. Site layout (see attached facility diagram and maps)
2. Proposed waste application technique;
3. Drainage control;
4. Proposed waste treatment rates; and
5. Expected Facility life.

2.1 Vacuum trucks transporting approved Exploration & Production Waste (E&P wastes) for disposal enter the Brickyard facility (The Facility) from LA Highway 792. The surface storage facility comprises approximately 6.2 acres. The facility will be surrounded by a 6-foot chain linked fence. The saltwater will have solids removed prior to being pumped to the permitted injection well. The trucks transporting liquid E&P wastes will enter The Facility during the allowable hours. E&P waste fluids collected in the covered, lined concrete container area is sent via centrifugal pumps through filter pots to the initial treatment tanks. A sample of the fluid being offloading will be collected and analyzed for certain parameters prior to the truck offloading. Trucks will continue through the driveway to the exit gate and return to LA Highway 792. The laboratory will be located adjacent to the off-loading area to direct incoming trucks to the offloading area and streamline completion of manifests and tickets upon off-load completion. The employee parking area will be located outside of the northwestern portion of the permitted facility boundary. Two (2) of the proposed injection wells will be located within the northern portion of the facility boundary and one (1) of the proposed injection wells will be located with the southern portion of the facility boundary. Each injection well will be surrounded with posts and chain closures. Any access roads to the well will be restricted with locked gates and will remain locked at all times. The detailed Facility Diagram is attached.

2.2 This application includes an application for permits to drill three (3) commercial SWD wells and to construct the Facility that will be used to separate oil and solids from incoming E and P waste and dispose of E and P waste liquids, primarily produced saltwater, in the proposed commercial disposal wells. The E and P waste liquids will be pumped through a closed loop system from the truck through a strainer basket and centrifugal pump into the inlet manifold where it is directed through two (2) 700-barrel lined steel desanding/settling tanks. The fluids will then be sent through two (2) series of

four (4) 1,000-barrel lined steel tanks (8 Total) for solids separation and some minimal hydrocarbon separation. The fluids will then by transferred via centrifuge pumps to the two (2) lined steel 1,000-barrel gun barrels for separating hydrocarbons from the water. The separated hydrocarbons are skimmed from the tops of the lined steel 1000-barrel tanks and siphoned from the gun barrels and transferred to two (2) 400-barrel lined steel oil tanks. Fluid from the gun barrels is directed to two (2) 750-barrel lined steel suction tanks prior to being disposed of in the approved injection wells. Fluid from the two (2) 750-barrel lined steel suction tanks are then transferred by one of four (4) triplex pumps to the three (3) approved Commercial SWD wells. All tanks will be closed top tanks. The oil will be transferred from the two (2) 400-barrel lined steel oil tanks via the load out pipe on the west side of The Facility. Solids accumulate in the gun barrels and settling tanks from the gravity settling process and require periodic cleanouts. These solids will be cleaned out of the tanks and placed in a covered steel roll-off that is sealed to prevent leaks until the waste profile is approved for disposal at a nearby Facility approved by the State of Louisiana to accept such waste. The roll-off container will only be located at the Facility during temporary routine maintenance, such as cleaning tank bottoms from aboveground storage tanks. The solids contained in the sealed roll-off will be transported by a permitted transporter to an LDEQ or LDENR approved Facilities. The clean produced E and P waste fluid will be injected into the permitted wells at less than the Maximum Authorized Surface Injection Pressure (MASIP) issued for each saltwater disposal well. E and P waste fluid disposal by deep well injection is a common practice and is the primary technique employed for disposal of this type of waste.

2.3 The Brickyard Commercial SWD Facility will have a Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention Control and Countermeasures (SPCC) Plan, developed by a Professional Engineer to incorporate stormwater management for the containment areas of the proposed SWD facility. The main offloading area for E and P waste liquids has 6-inch sealed seamless concrete containment rollover berms and 6-inch sealed seamless concrete curbs to prevent run-on or run-off of storm water. Minor spills of oil are immediately addressed if a spill occurs while loading oil. The loading valve is fully contained by the 6.5-gallon poly containment at the unloading valve. Erosion control measures are implemented around the site to prevent excess erosion before and after construction. The perimeter of the site will be seeded after construction and grass maintained to prevent erosion. In non-containment areas, such as wellheads and flowlines, any detected small leakage from valves, glands, etc. will be repaired by Facility personnel. If a larger, more significant leak is found, the source will be shut off and mobilization for repair and cleanup will commence immediately. Containment of any spills in the tank battery area is protected by 4-foot-high sealed seamless concrete walls around the tank battery that provide for greater than 100% capacity of all the tanks. The tank sealed seamless concrete containment pad is slightly sloped towards a shallow sump trough that drains towards a catch sealed seamless concrete sump and automated sump pump actuated by a fluid level switch to prevent accumulation of any fluids within the tank containment area. Any fluids picked up by the

sump pump are transferred back to the gun barrel(s) where the fluids are sent back through the flow process.

Loading and off-loading operations will occur only during operational hours. Drivers are required to comply with warning signs and to remain on the off-loading area while operations are underway. Drivers will be assisted by trained Brickyard employees and will inspect truck and tank connections before, during and after loading operations. Warning signs are posted at the location and absorbent materials are located near the unloading pad for immediate use in the event a small leak or spill would occur. All non-compliant events will be reported to The Office of Conservation within 24 hours and will be followed by a written corrective action plan within 5 days, in accordance with LAC43; XIX.535.E.

2.4 The anticipated average volume of waste that will enter The Facility is 18,000 bbls per day at approximately 12.5 bbls per minute. The anticipated maximum daily rate of waste disposal is 24,000 bbls per day at approximately 16.7 bbls per minute.

2.5 It is Brickyard's expectation that the new injection wells will last 15 to 20 years per well.

3.0 An explanation of the proposed E and P Waste management and operations plan with reference to the following topics:

1. Sampling and testing of incoming waste (waste acceptance procedures);
2. Method of receiving waste;
3. Waste segregation;
4. Proposed waste treatment monitoring plan;
5. Reuse stockpile management plan (see §565.G); and
6. Air emissions (odor) reduction and monitoring plan that addresses such sources as:
   a. The volatilization of organic materials and/or hydrogen sulfide in the E and P Waste;
   b. Particulate matter (dust) carried by the wind;
   c. Periodic removal and subsequent handling of free oil; and
   d. Chemical reactions (e.g., production of hydrogen sulfide from sulfur-bearing E and P Wastes).

3.1 *Sampling and testing of incoming waste*: Before offloading at this commercial Facility, each shipment of E and P waste will have a sample collected, measured for percent solids, and analyzed by facility personnel for pH, conductivity, and chloride content. Records of these tests will be kept on file at The Facility for a period of three (3) years and will be available for review by an inspector employed by the Office of Conservation.

A minimum of one (1) eight-ounce sample will be collected from each load and will be labeled with the date, operator, and manifest number. These

samples will be retained at The Facility location for a minimum of thirty (30) days.

Exploration and Production (E and P) Waste Shipping Control Tickets (Form UIC-28) will be stored on-site for at least three (3) years for review by the Louisiana Department Energy and Natural Resources – Office of Conservation – Environmental Division.

Procedures for accepting the E and P Waste include: 1) The manifest must be completed with the correct information before accepting E and P Waste in accordance with LAC43:XIX.545.A and L, 2) The field analytical tests conducted including pH, conductivity and chlorides, must be recorded on the UIC-28 to ensure completeness of the form, 3) If the E and P Waste is from a non-Louisiana Operator, the Operator must have an offshore/out for state organization ID from Conservation in order to transport E& P waste to a Louisiana Commercial Facility via a UIC 28 manifest. A UIC 23 is only used, when necessary, if the generator of the E&P waste doesn't have an Office of Conservation approved Organization ID, and 4) A company representative or employee of Brickyard must meet the transporter at the offloading area for all acceptance of E and P Waste shipments.

3.2 *Method of receiving waste*: A concrete off-loading area will be constructed to prevent the release of E and P waste into the environment. The concrete off-loading area will have 6-inch sealed seamless concrete rollover berms on four sides to prevent run-off of E and P waste and run-on of rainwater. Any fluid spilled, or rainwater falling onto the sealed seamless concrete unloading pad is directed towards a sealed seamless concrete catch sump by the slight slopes built into the unloading pad towards the sealed seamless concrete catch sump. The sealed seamless concrete catch sump is equipped with an automated fluid level switch to pump any accumulated fluid from the sealed seamless concrete catch sump to the gun barrel(s) and/or desanding/settling tanks and back through the process flow.

The storage tanks at The Facility will be surrounded by a 4-ft sealed seamless concrete containment wall and a sealed seamless integrated concrete containment floor, which has a total spill containment capacity of 15,271-barrels **(13,700 barrels is 100%)**. The sealed seamless concrete tank containment area floor has a slight slope towards a central sump trough, seamlessly incorporated into the containment floor, which collects any fluid spilled in the containment area and/or rainwater and directs it towards a catch sump which is equipped with a fluid level actuated switch that automatically pumps any fluid from the catch sump back to the gun barrel(s) where the fluid goes through the process flow to prevent any accumulation of fluid in the tank containment.

The E and P waste, or primarily produced saltwater, will be pumped through a closed loop system from the truck off-loading area, through a strainer basket, to the inlet of manifold where it is directed through two (2) 700-barrel lined

steel desanding/settling tanks. The fluids will then be sent through two (2) series of four (4) 1,000-barrel lined steel tanks (8 Total) for solids separation and some minimal hydrocarbon separation. The fluids will then by transferred via centrifuge pumps to the two (2) lined steel 1,000-gun barrels for separating hydrocarbons from the water. The separated hydrocarbons are skimmed from the tops of the 1000-barrel lined steel tanks and siphoned from the gun barrels and transferred to two (2) 400-barrel lined steel oil tanks. Fluid from the gun barrels is directed to two (2) 750-barrel lined steel suction tanks prior to being disposed of in the approved injection wells. Fluid from the two (2) 750-barrel lined steel suction tanks are then transferred by one of four (4) triplex pumps to one (1) of the three (3) permitted disposal wells via the injection pumps.

3.3 *Waste segregation*: After taking a sample of the tank truck's contents, a 4-inch flexible hose is connected to the tail end of the tank truck to allow the contents to be pumped from the truck off-loading area, through a strainer basket, manifold where it is directed through two (2) 700-barrel lined steel settling tanks. The fluids will then be sent through two (2) series of four (4) 1,000-barrel lined steel tanks (8 Total) for solids separation and some minimal hydrocarbon separation. The fluids will then by transferred via centrifuge pumps to the two (2) lined steel 1,000-gun barrels for separating hydrocarbons from the water. The separated hydrocarbons are skimmed from the tops of the 1000-barrel lined steel tanks and siphoned from the lined steel gun barrels and transferred to two (2) 400-barrel lined steel oil tanks. Fluid from the gun barrels is directed to two (2) 750-barrel lined steel suction tanks prior to being disposed of in the approved injection wells. Fluid from the two (2) 750-barrel suction lined steel tanks are then transferred by one of four (4) triplex pumps to the three (3) approved SWD wells. Periodically, any of the storage tanks may need to be cleaned to remove solids from the bottom of the tank. The tank bottoms may be pumped off and transported to a permitted Facility, or the tank may be taken out of service, the liquids transferred to another tank within the permitted system, and the tank bottoms cleaned from the tank and placed in a lined covered seal-tight roll-off for profiling and disposal. The roll-off container will only be located at The Facility during temporary routine maintenance, such as cleaning tank bottoms from aboveground storage tanks. The solids will be transported by a licensed transporter to a permitted Facility that can accept E and P Waste.

The storage area will have a spill containment capacity of 15,271-barrels **(13,700 barrels is 100%).** A SPCC Plan will be developed by a Professional Engineer upon completion of The Facility and maintained on-site. The included Facility Diagram shows the layout of The Facility and the storage tanks.

Only approved E and P waste, such as produced saltwater, rain water from containment water and other E and P Waste previously defined in this application will be injected in the permitted injection well. Injection pressures and the casing/tubing annulus pressure will be monitored according to the permit.

Solids that are generated from the E and P waste handled at The Facility will be periodically cleaned from the lined steel tanks and placed in a lined steel container. These solids will be sampled, analyzed, and profiled for disposal at an approved facility. An authorized transporter will transport these solids to a permitted facility for proper disposal. There will be no storage of these solids onsite for any longer than is necessary to complete tank cleaning operations.

3.4 *Proposed waste treatment monitoring plan*: Monitoring for The Facility and reporting frequency are listed below:

Services	Frequency
Annulus Pressure	Recorded Daily, Reported Monthly
Report of Waste Receipts	Recorded Daily, Reported Monthly
Daily Monitoring Log	Recorded Daily, Reported Monthly
Waste Volume	Recorded Daily, Reported Monthly
Facilities Inspection	Performed Daily, Reported to DNR Upon Incident
Waste Refusal Notification	Immediately Upon Occurrence
Complete Water Analysis	Upon Request

3.5 *Reuse stockpile management plan*: This Facility will not accept solids. There will be no reuse stockpile.

3.6 *Air emissions (odor) reduction and monitoring plan*

1. *The volatilization of organic materials and/or hydrogen sulfide in the E and P Waste*: Emissions calculations based on the anticipated throughput of this facility indicate that emissions would not reach the threshold that requires an air permit; therefore, Brickyard is of the opinion that an air permit will not be required by LADEQ. An air permit application has been submitted to LADEQ, and Brickyard is waiting on a response from LADEQ. A copy of the air permit application is included in Appendix V. Brickyard will employ a third-party contractor to perform optical gas imaging twice a year to ensure compliance with the National Ambient Air Quality Standard (NAAQS). There may be situations where minor or insignificant amounts of chemicals may be required to treat skim oil or condensate for emulsions and/or to treat steel piping for prevention of corrosion. Any chemical evaluated for use will be tested for compatibility with the current operations at the site, and, if utilized, will be properly stored and labeled at the site according to State and Federal regulations. These chemicals, if used, will be brought to the site on an as needed basis and typically stored in a one (1) barrel drum within the tank containment. The drums will remain closed until product is required and will be of small enough quantities and for short, limited time periods so as to only negligible air emissions. The estimated amount of chemicals that might be required on a daily basis would be approximately twelve gallons of

Scale Inhibitor/Surfactant, seven gallons of Oxygen Scavenger, and/or six gallons of Iron Sulfide Chelator. This amounts to less than one percent of the daily throughput at The Facility and will be added in a closed loop system. Emissions will be calculated when The Facility begins operations to determine if the threshold requiring an air permit is surpassed considering actual throughput volumes. There are no compressors, line heaters, separators, dehydrators, or any other equipment that has the potential to emit. Facility personnel will be monitored for possible Hydrogen Sulfide (H2S) exposure, through H2S personnel monitors. It is not anticipated that H2S exposure will be a concern at this facility.

2. *Particulate matter (dust) carried by the wind*: The main access road to The Facility will be from LA Highway 792. LA Highway 792 is a paved road and will not require a water truck or other measures to reduce dust emissions related to truck traffic. Trees are located on the North, East, and South side of the proposed facility to limit the amount to dust exposure.

3. *Periodic removal and subsequent handling of free oil*: The periodic removal and subsequent handling of free oil occurs through a closed loop system. The hose from the oil tank load out to the truck is attached prior to opening valves from the tanks. The vacuum from the tanker is kept on vacuum after the loadout valve is closed and the hose removed at the end of the unloading process to suck remaining oil in the hose into the truck. The loading area is equipped with a 6.5- gallon poly loading valve containment with cover and lock. Minor spills of oil are immediately contained within the poly loading valve containment and can be transferred to the oil tanks. A 5-gallon bucket is available at the loading site to contain the minimal amount of oil between valves or left in the hose when unhooking from the truck. Absorbent materials to contain a spill are kept on site and will be utilized to control and minimize any spills that might occur while loading oil.

4. *Chemical reactions*: Facility personnel will be monitored for possible Hydrogen Sulfide (H_2S) exposure, through H_2S/hazardous gas personnel monitors. It is not anticipated that H_2S/hazardous gas exposure will be a concern at this facility.

4.0 The site will be closed according to LAC43: XIX.567. The Department of Energy and Natural Resources (LDENR) – Office of Conservation - Environmental Division will certify that the site is properly closed. Closure of the site will be performed under the LDENR's supervision. Detailed information concerning closure and post-closure activities and monitoring as follows:

1. Proposed Closure Procedures;
2. Post-closure maintenance; and
3. Closure and post-closure monitoring

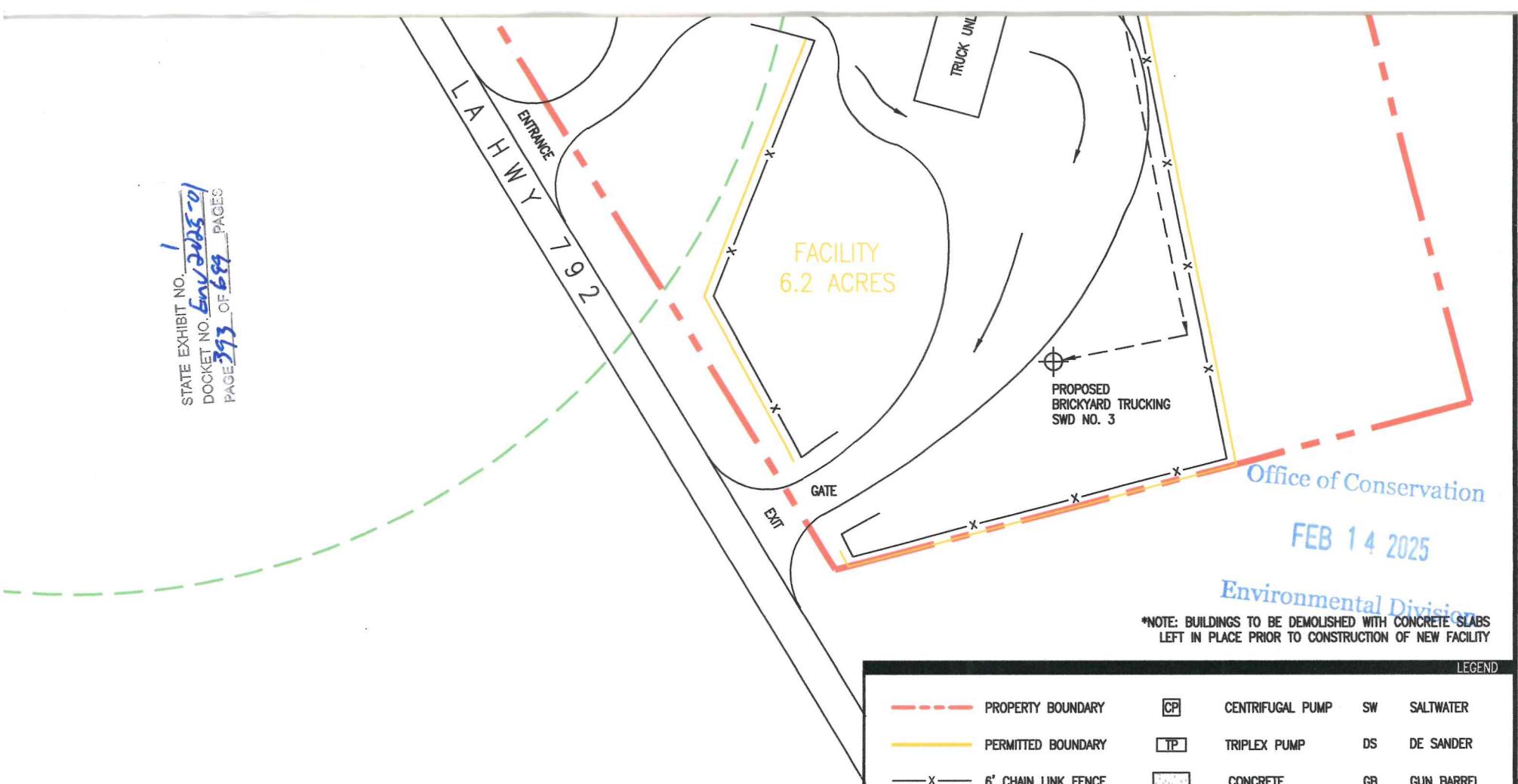
4.1 The proposed closure procedures for The Facility are as follows:

1. Brickyard personnel will take soil samples within The Facility boundary and one (1) background sample from outside The Facility boundary for a full LAC 29-B analysis. Analytical results will determine if any remediation activities are required.
2. Dispose of all E and P waste in tanks in order to drain tanks of their contents.
3. Take a background reading on location for Naturally Occurring Radioactive Material (NORM).
4. Clean tanks using freshwater vacuum trucks.
5. Sub-contract the removal of tank bottom contents to a certified NORM transport/disposal contractor if NORM readings are above background. Use same contractor to clean tanks inside and out.
6. Once clean, properly re-use, sell, and/or dispose of tanks.
7. Sub-contract the dismantling of tank battery, including all piping, tanks, vents, pumps, etc. All items are to be disposed of properly.
8. The concrete tank battery and any retaining walls will be demolished; all concrete will be removed from The Facility and built back to grade.
9. Plug and abandon the disposal well according to the procedures approved by LDENR – Office of Conservation – Injection and Mining Division.
10. Once the site is to grade, it will be seeded. The site will be returned as close to possible to its original state per LAC 43: XIX.519.14a.
11. Re-sample at original locations to determine compliance with LAC 29-B parameters.

All Facility closure activities will be supervised by Brickyard personnel. A Brickyard supervisor will be on site at all times. The Environmental Health and Safety coordinator will meet with all sub-contracting parties to review safety concerns.

4.2 No post-closure maintenance is necessary.

4.3 No post-closure monitoring is necessary.



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Office of Conservation
FEB 14 2025
Environmental Division

*NOTE: BUILDINGS TO BE DEMOLISHED WITH CONCRETE SLABS LEFT IN PLACE PRIOR TO CONSTRUCTION OF NEW FACILITY

LEGEND

PROPERTY BOUNDARY	CP	CENTRIFUGAL PUMP	SW	SALTWATER
PERMITTED BOUNDARY	TP	TRIPLEX PUMP	DS	DE SANDER
6' CHAIN LINK FENCE		CONCRETE	GB	GUN BARREL
UNDERGROUND FLOWLINE		BUILDING	TK	TANK
DRAINAGE DIRECTION		LEL MONITOR		

0 50'–0" 100'–0" 200'–0"
0 1/2" 1" 2"

Raines & Associates, LLC

TITLE
ATTACHMENT 3
FACILITY DIAGRAM

PROJECT NO.	SCALE
SA08539	AS SHOWN
PAGE	DRAWN BY
1	JKW
SHEET	REVISED DATE
C – 17" X 22"	02/11/25

LOCATION
BRICKYARD TRUCKING, LLC. (B1119)
PROPOSED COMMERCIAL SWD FACILITY
SECTION 17 T16N R8W
JAMESTOWN FIELD
BIENVILLE PARISH, LOUISIANA

REVISION 1