



April 17, 2013

Ms. Charlene Fitch, P.E.
Solid Waste Management Program
P.O. Box 176
Jefferson City, Missouri 65102-0176

Subject: Bridgeton Landfill (County Permit # 418, and MoDNR Permit #0118912)
Leachate Tank and Transport Disposal
CEC Project 130-484

Dear Ms. Fitch:

Pursuant to your request in our conversation, I have attached a flow chart that outlines the existing leachate management structure as well as the "drawdown" procedure for the existing liquids currently stored on site once the proposed 316,000 gallon tank is in full operation. The attached flow chart shows the various disposal options for these liquids. As you know, the ultimate goal for the Bridgeton Landfill is to regain the option for direct discharge disposal to the Metropolitan St. Louis Sewer District (MSD) lift station adjacent to the site.

The process depicted within the dashed lines on the proposed plan sheet E-2 is considered to be temporary until such time as the volume currently stored on site is processed and disposed and the liquid generated can be managed utilizing the buffer tank farm and the 316,000 tank. Eventually, as noted, Bridgeton Landfill will pursue the direct discharge to MSD utilizing the 96,000 gallon tank already onsite to equalize and regulate discharge flows.

Bridgeton Landfill is conducting ongoing TCLP analysis of landfill liquids (condensate and comingled condensate/leachate) to determine whether these liquids are characteristically hazardous. Ed Galbraith with Barr Engineering has been retained by Bridgeton Landfill as the consultant on these matters. As of April 16, 2013, preliminary TCLP results indicate that liquids are not hazardous; however, efforts to complete/validate the results are ongoing. Not considering this pending outcome, Bridgeton Landfill has incorporated the following conservative design measures so that the proposed aeration and storage tank will comply with 40 CFR Subpart J requirements for hazardous waste generator tanks should that be needed:

Civil & Environmental Consultants, Inc.

St. Louis	4848 Park 370 Blvd. Suite F Hazelwood, Missouri Ph: 314/656-4566 / Fx: 314/656-4595 Toll Free: 866/250-3679 stlouis@cecinc.com www.cecinc.com	Austin	855/365-2324	Cleveland	866/507-2324	Nashville	800/763-2326
		Boston	866/312-2024	Columbus	888/598-6808	North Central PA	877/321-2324
		Charlotte	855/859-9932	Detroit	866/380-2324	Phoenix	866/250-3679
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		Cincinnati	800/759-5614	Indianapolis	877/746-0749	Toledo	888/598-6808



- *Spill prevention controls:* Spill prevention controls such as check valves, tank ball floats, and secondary containment alarms, will monitor and alert operators to any faults immediately. Furthermore, the tank floor has a triple liner system. The glass liner steel floor with a 60 mil HDPE sub-liner and 6" reinforced concrete floor under the liner.
- *Overfill prevention controls:* All discharge valves and inlet valves have automatic actuators to shut down flows upon any fault signals. The tank also has a pressure transducer for control of levels with a high, high tank ball float that is a secondary shut down system built into the control panel. The ball float in the tank containment is used to detect any leaks and shut down valves and pumps automatically.
- *Waste or treatment method is compatible with tank:* The glass-lined tank used a special 732 Dow Corning Multi-purpose sealant recommended by the tank manufacturer based on the leachate analysis. This 100% silicone mixture is pliable and has long weather resistance and a large temperature range for usability. The roof sealant is by Pecora Corporation number 864 NST sealant
- *Secondary containment system is provided for tanks and equipment:* The tank is surrounded by a concrete secondary containment of 110% capacity larger than the 316, 000 gallon tank and has over 1" of freeboard for storm water considerations. The secondary containment sump can handle a 1" immediate rainfall in less than 100 minutes and is pumped back into the tank. All piping has a concrete containment surface with a collection sump associated with its routing. The collection manhole in the load out area is HDPE lined and is discharged via dual contained piped.
- *Secondary containment lining:* Secondary containment system is constructed of and lined with waste compatible material of sufficient strength and thickness. As mentioned above, the tank has a 60 mil HDPE liner under the glass coated steel sheets and above the concrete support. All concrete is 6" or thicker and is reinforced and has vinyl water stops at all construction joints and control joints. Additionally, the concrete secondary containment walls and floor will be coated with CreteDefender. (Details and specifications for this product can be found at <http://cretedefender.com/details/>)
- *Structural Support:* Containment system and tank is supported by base capable of preventing failure due to settlement, compression or uplift. The structural fill meets or



exceeded the manufacturer recommendations for 2000 PSF. All concrete is high strength and is reinforced with deformed rebar per design specifications. A total of 16,000 pounds of steel is embedded in the concrete foundations and containment.

- *Containment system leak detection:* The ball float system in the secondary containment will shut down all incoming lines, stop all discharge pumps and valves, and notify the operator of a malfunction/leak immediately upon activation.
- *Secondary containment drainage:* The containment system is designed to drain and remove liquids. Both the secondary containment for the tank and the load out pad have dual-walled containment sumps that remove any rainwater or leakage to the tank upon automatic activation of the level sensor system in these sumps. Furthermore, stormwater run-on is prevented to enter the containment system by the four foot walls surrounding containment structure. The load out pad at the entrance and exit is sloped away to stop any additional storm water from entering the containment system area.
- *Secondary containment capacity:* The containment system is capable of containing 110% of the containerized waste volume. The tank is a 316,000 nominal tank and the secondary containment has the storage capability 347,600. Over 1" of free board is also available. The load out pad will contain up to a 9,874 gallon tank leak. This volume is in excess of the largest tanker disposal truck contemplated for use.
- *The containment system is free of cracks or gaps:* In addition to all control joints and expansion joints have vinyl water stop incorporated into the system. The coating and lining mentioned above also help to prevent cracks and gaps in the system.
- *Cathodic protection:* The tank has installed cathodic protection that can be monitored at any time for serviceability. The monitoring can be done from the outside of the tank with a simple milliamp meter.
- *Professional engineering construction assurance.* The tank construction will be assessed and certified by a qualified Professional Engineer attesting that the system is installed and constructed within substantial compliance with the design plans and specifications inclusive of the items and components outlined above.

Bridgeton Landfill is also in the process of evaluating additional onsite liquid management including additional storage tanks and a potential pre-treatment plant that will allow for



resuming the direct discharge to MSD. These improvements and modifications will be submitted, as available, for your review, comment, and approval.

We look forward for your final approval of this proposed tank. Please do not hesitate to contact us for additional information needed to provide that approval.

Sincerely,
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

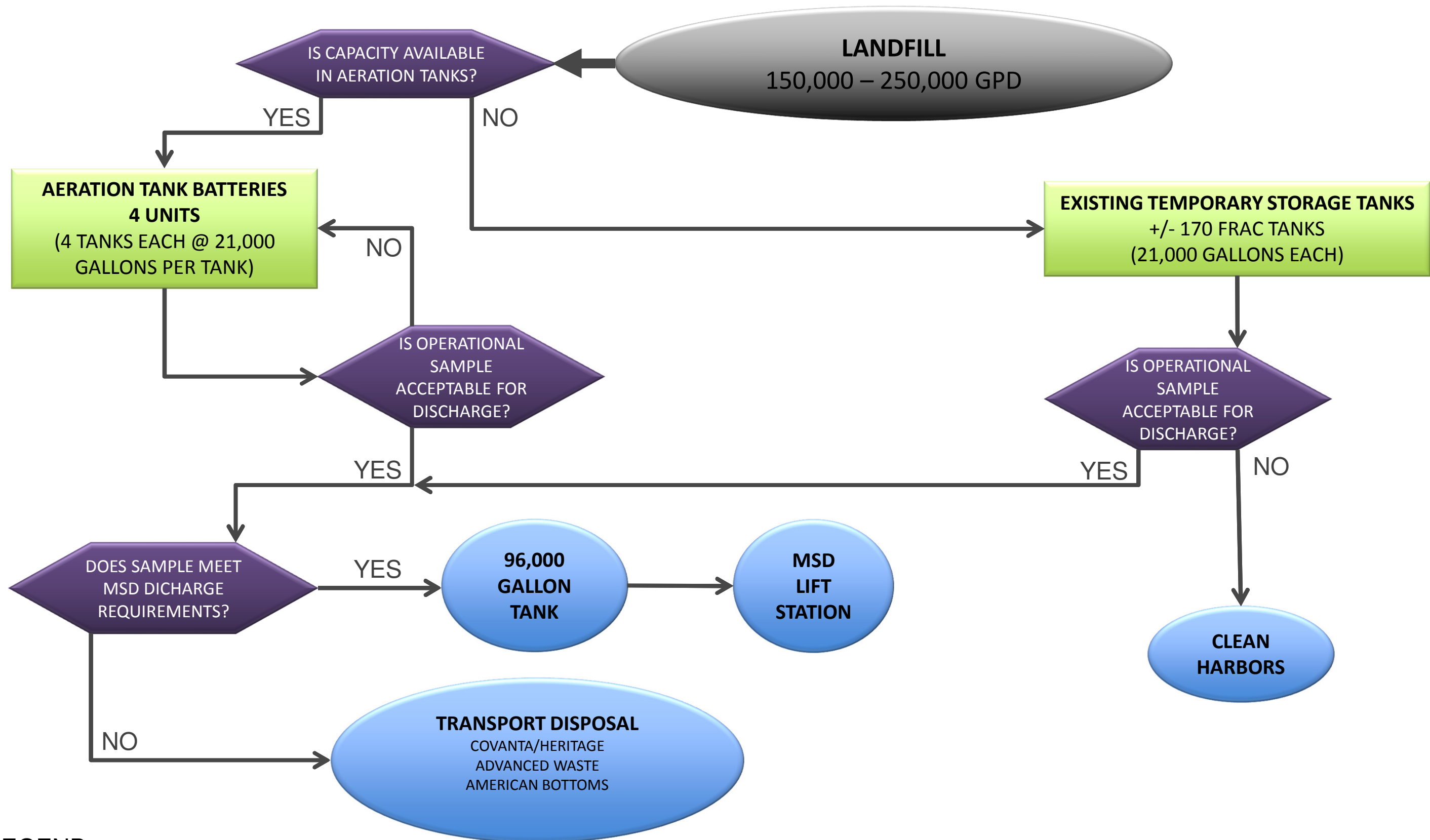
A handwritten signature in blue ink, appearing to read "K. Kamp", is positioned above the printed name of the sender.

Kevin T. Kamp, P.E. - Missouri PE#2006019670
Senior Project Manager

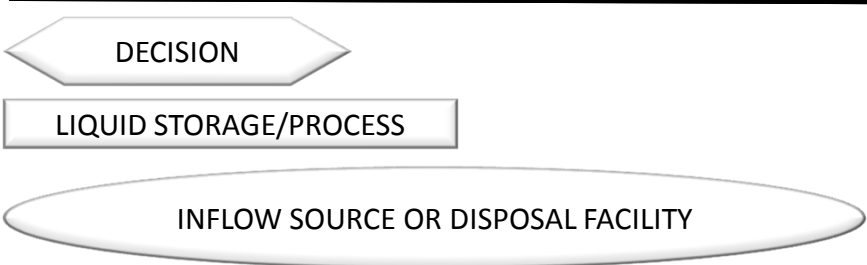


Attachments: Exhibit 1 – Existing Flow Chart
Exhibit 2 – Proposed Flow Chart


cc: Ms. Laura Yates, St. Louis County Department of Health
Craig Almanza, Bridgeton Landfill, LLC

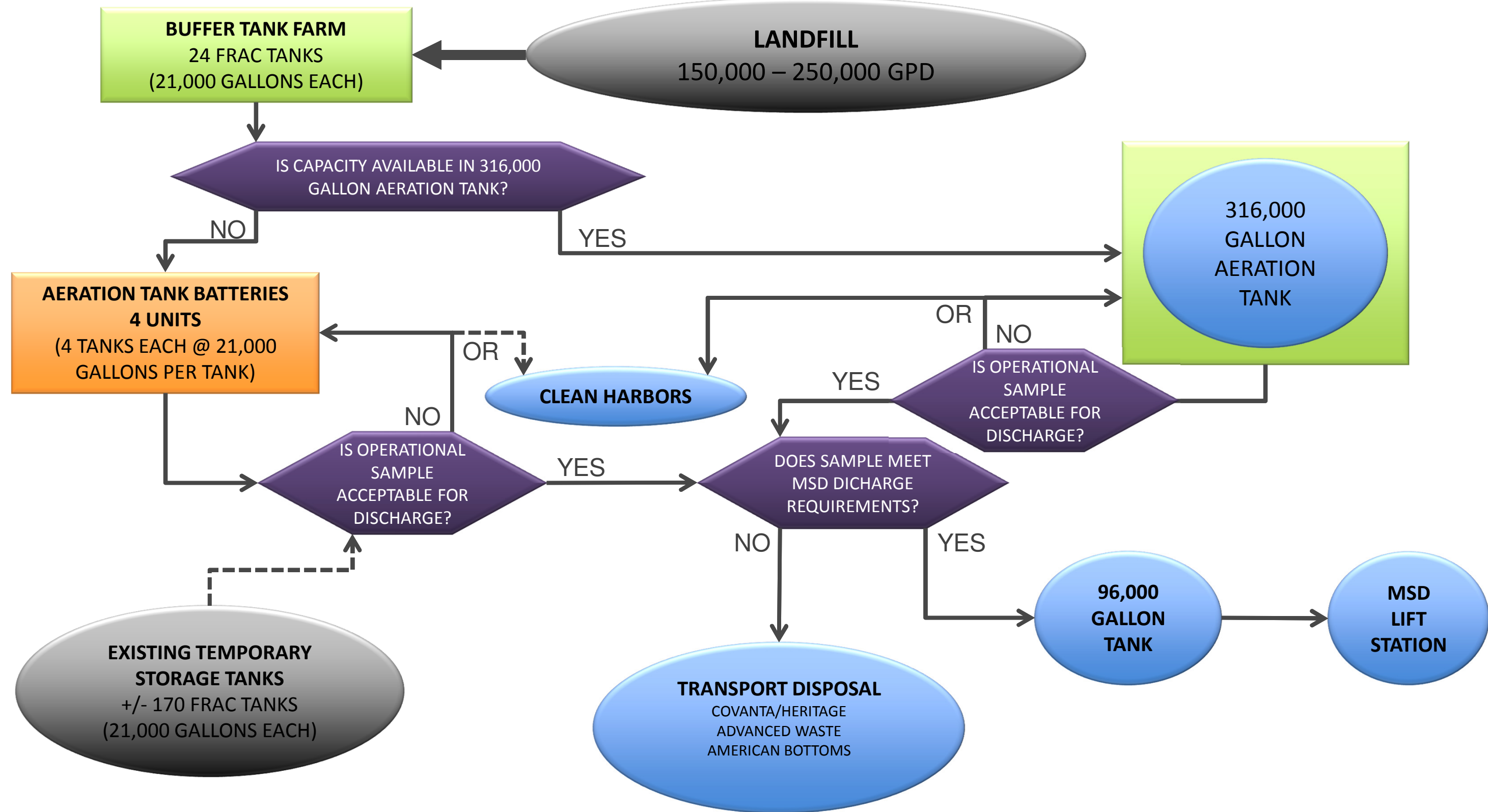


LEGEND

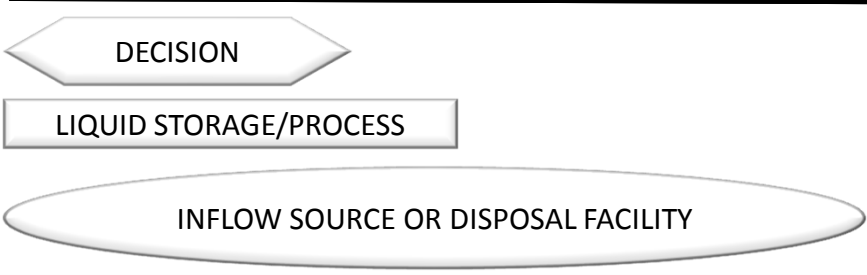


*HAND SIGNATURE ON FILE

<div> Civil & Environmental Consultants, Inc. 4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042 314-656-4566 • 866-250-3679 www.cedinc.com</div>	BRIDGETON LANDFILL LLC BRIDGETON, MISSOURI						
	EXISTING LEACHATE MANAGEMENT						
DRAWN BY:	KTK	CHECKED BY:	RFB	APPROVED BY:	*KTK	ATTACHMENT:	E-1
DATE:	APRIL 2013	DWG SCALE:	(NONE)	PROJECT NO:	130-484		



LEGEND



*HAND SIGNATURE ON FILE

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		PROPOSED LEACHATE MANAGEMENT					
DRAWN BY:	KTK	CHECKED BY:	RFB	APPROVED BY:	*KTK	ATTACHMENT:	E-2
DATE:	APRIL 2013	DWG SCALE:	(NONE)	PROJECT NO:	130-484		