Permit No. CP0001776

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

Sapp Brothers Travel Center-Harrisonville, MO
Southwest of E. 275th Street & S. West Outer Road
Harrisonville, MO 64701

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

February 18, 2016
Effective Date

Sara Parker Pauley
Sara Parker Pauley, Director, Department of Natural Resources

February 17, 2018
Expiration Date

John Madras
John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Sapp Bros. is constructing a new travel center outside Harrisonville, MO. The travel center will provide a full service restaurant and convenience store. The wastewater treatment system will be a Smith & Loveless Addigest™ Sludge System package plant, with clarifier for settling, flow equalization, and ultraviolet disinfection. The flow equalization tank will have 12,000 gallon capacity. The Addigest system contains two aeration zones, with a capacity of 66,800 gallons. The sludge storage provides 21 days of storage with 2% solids of sludge (8,600 gallons). The ultraviolet disinfections system shall be a Trojan UV300PTP system. The design flow is 20,000 gpd.

As this is a development of a new site, a collection system of approximately 1,940 linear feet of new 8 inch PVC gravity sewer will be installed, along with 8 manholes and all the necessary appurtenances to make a complete and usable wastewater collection system. The project will also include general site work appropriate to the scope and purpose of the project.

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a "finding of affordability" on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publically-owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.

2. All construction shall be in accordance with the plans and specifications submitted by Thompson, Dressen, & Dorner Inc. on August 13, 2015 and November 12, 2015.

3. The department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).

4. State and federal law does not permit bypassing of raw wastewater; therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Kansas City Regional Office per 10 CSR 20-7.015(9)(E)2.

5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"

6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."

7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.

   A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.

   B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.

   C. Manholes shall be located with the top access at or above grade level.

   D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:

      a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or

      b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.

8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at www.dnr.mo.gov/env/wpp/epermit/help.htm. See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.

9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the department's Water Protection Program at 573-751-1300 for more information. See www.dnr.mo.gov/env/wpp/401/ for more information.

10. A full closure plan shall be submitted to the department's Kansas City Regional Office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO- 0123595. Closure shall not commence until the submitted closure plan is approved by the department. Form J – Request for Termination of a State Operating Permit, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.

11. Upon completion of construction;

    A. Sapp Brothers Travel Center will become the continuing authority for operation, maintenance, and modernization of these facilities;

    B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D); and

    C. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications.

IV. REVIEW SUMMARY

1. AMMONIA

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at http://dnr.mo.gov/pubs/pub2481.pdf .

The facility was informed prior to the Antidegradation Review and as a result, the selected alternative was designed to meet the proposed 2013 EPA Criteria. The draft operating permit was public noticed with a summer ammonia effluent limit of 0.6 mg/L.

2. CONSTRUCTION PURPOSE

The purpose of the Sapp Bros. wastewater treatment plant is to provide wastewater service to the new travel center being constructed outside of Harrisonville, MO. The new treatment plant will also remove an existing one cell lagoon operated by Harrisonville Fireworks. The facility underwent Antidegradation and the selected alternative was construction of an extended aeration treatment plant with ultraviolet disinfection.

3. FACILITY DESCRIPTION

Sapp Bros. is constructing a new travel center outside Harrisonville, MO. The travel center will provide a full service restaurant and convenience store. The facility will provide sixty truck parking stalls, along with lounge and showers. A truck service shop is planned as part of the long term development of the site. The proposed facility estimates that will proved 250,000 gallons of gasoline and 500,000 gallons of diesel fuel a month. Sapp Brothers is constructing an Smith & Loveless Addigest™ package plant with ultraviolet disinfection.

4. COMPLIANCE PARAMETERS

As a result of the Antidegradation review, the facility will be required to meet the following effluent limits. The facility will be required to collect samples monthly.

PARAMETER	Unit	Daily Maximum	Weekly Average	Monthly Average
Flow	MGD	*		*
BOD_5	mg/L		45	30
TSS	mg/L		45	30
Escherichia coli **	#/100mL	1030		206
Ammonia as N (Apr 1 –Sep 30)	mg/L	1.4		0.6
Ammonia as N (Oct 1 – Mar 31)	mg/L	2.9		2.1
Oil & Grease	mg/L	15		10
pH	SU	6.5-9.0		6.5-9.0

*-monitoring only

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The wastewater treatment system will be a Smith & Loveless Addigest™ Sludge System package plant, with clarifier for settling, flow equalization, and ultraviolet disinfection. As this is a development of a new site, a collection system of approximately 1,940 linear feet of new 8 inch PVC gravity sewer, 200 linear feet of 6 inch PVC lines will be installed, along with approximately 8 manholes.

At the treatment plant, wastewater will enter and flow through a bar screen. The inlet manually cleaned bar screen shall be constructed of 316 stainless steel with ½" openings. An electromagnetic flowmeter shall be installed with the treatment plant. A backup generator is provided.

The Addigest system includes a flow equalization tank, which will have 12,000 gallon capacity. The tank dimensions are 14 feet long by 12 feet wide, with a side-water depth of 10.5 feet. The Addigest system contains two aeration zones. The sizing of the aeration zones is based on 9.9 lbs BOD /day-1,000 cf, which is more protective than the minimum requirement in 10 CSR 20-8.020(13)(B)6A of 15 lbs BOD/day. The aeration tank will have a water depth of 10.5 ft with a width of 12 ft. The aeration zones have a capacity of 66,800 gallons, which provides more than the 24 hours of detention time required in 10 CSR 20-8.020(13)(B)6. Two 328 scfm blowers with 20-mhp motors are provided to supply air to the main treatment components with one operating in stand-by mode. A separate blower of 26 scfm with a 30-mhp motor will provide air for the flow equalization system.

The hopper type clarifier will have a surface area of 82 square feet. The volume of the clarifier is 3,340 gallons with an average overflow rate of 244 gpd/square foot. The hydraulic retention time is 4.0 hours which meets the minimum requirements of 10 CSR 20-8.020(13)(B)7. The clarifier has the dimensions of 12 feet wide by 7 feet long with a side-water depth of 10.5 feet. The detention capacity of the hopper, using only the top third (by height) per 10 CSR 20-8.020(13)(B)7 C is 2,200 gallons.

The ultraviolet disinfections system shall be a Trojan UV300PTP with two modules provided by Smith & Loveless. The UV system will have lamp age, UV intensity, bank status, low intensity, and lamp failure alarms. The UV system is designed for a peak flow of 37,000 gpd. The UV system is designed for 65% UV transmittance and to deliver a dosage of 30,400 $\mu Ws/cm^2$.

Sludge design production is 15.5 dry tons per year. The sludge storage provided is 1,150 cubic feet, which provides 21 days of storage with 2% solids of sludge (8,600 gallons). Sludge storage will be a holding tank with a contractor removing and hauling the sludge. The facility deviated from 10 CSR 20-8.020(13)B8 which requires a minimum of 45 days storage.

6. OPERATING PERMIT

Operating permit MO-0138215 will be issued following the completion of construction. The draft operating permit was public noticed January 8- February 8, 2016 with no comments received. The operating permit for Harrison Fireworks LP (MO-0123595) will be terminated following the construction of the new wastewater treatment plant, the submittal of the closure plan, and the removal of the existing system. Upon construction completion, submit the Statement of Work Completed with request to issue the operating permit.

Leasue Meyers, EI
Engineering Section
leasue.meyers@dnr.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITY

RECEIVED
AUG 13 2015
Water Protection Program

CP0001776

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED 4100.00	CHECK NO. 63763
DATE RECEIVED 8/13/15	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

1.1 Is this a Federal/State funded project? ☐ YES ☑ N/A Funding Agency: _____ Project #: _____

1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☑ YES Date of Approval: 3/15

1.3 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☐ NO ☑ N/A (If Not Applicable, complete No. 1.4.)

1.4 [Complete only if answered Not Applicable on No. 1.3.] Is a copy of the engineering report* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
☑ YES ☐ NO

1.5 Is a copy of the appropriate plans* and specifications* included with this application?
☑ YES Denote which form is submitted: ☑ Hard copy ☐ Electronic copy (See instructions.) ☐ NO

1.6 Is a summary of design* included with this application? ☑ YES ☐ NO

1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
☐ YES Date of submittal: _____
☑ Enclosed is the appropriate operating permit application submittal. Denote which form: ☐ A ☑ B ☐ B2
☐ N/A Please explain: _____

1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☑ NO

1.9 Is the appropriate fee included with this application? ☑ YES ☐ NO (See instructions for appropriate fee.)

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Sapp Bros Travel Center - Harrisonville, MO

2.2 PROJECT DESCRIPTION

Manufactured Wastewater Treatment Facility to serve 30 acres southwest of I-49 and E. 275th Street. The facilities served will be a Travel Center with full service restaurant and Truckers Showers, Truck Repair Facility, existing Harrisonville Fireworks Retail Store, future commercial site and future warehouse facility.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge disposal will be contracted with an approved commercial hauler.

2.4 DESIGN INFORMATION

A. Current population: _____; Design population: _____

B. Actual Flow: _____ gpd; Design Average Flow: 20,000 gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: 80,000 gpd; Design Wet Weather Event: _____

2.5 ADDITIONAL INFORMATION

A. Is a topographic map attached? ☑ YES ☐ NO

B. Is a process flow diagram attached? ☑ YES ☐ NO

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Sapp Bros Travel Center	(402) 895-7038	dquinn@sappbros.net

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
SW of E. 275th St and S. West Outer Road	Harrisonville	MO	64701	Cass

Wastewater Treatment Facility: Mo- (Outfall 1 Of 1)

3.1 Legal Description: E 1/2 ¼, NW ¼, NW ¼, Sec. 16, T 44 N, R 31 W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 382024 Northing (Y): 4274872
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Sapp Bros, Inc	(402) 895-7038	dquinn@sappbros.net

ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 45766	Omaha	NE	68145

5.0 CONTINUING AUTHORITY:

Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Sapp Bros, Inc.	(402) 895-7038	dquinn@sappbros.net

ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 45766	Omaha	NE	68145

5.1 A letter from the continuing authority, if different than the owner, is included with this application. ☐ YES ☐ NO ☑ N/A

5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.

A. Is a copy of the certificate of convenience and necessity included with this application? ☐ YES ☑ NO

5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.

A. Is a copy of the as-filed restrictions and covenants included with this application? ☐ YES ☐ NO

B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? ☐ YES ☐ NO

C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? ☐ YES ☐ NO

D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? ☐ YES ☐ NO

6.0 ENGINEER

ENGINEER NAME / COMPANY NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Douglas S. Dreessen / Thompson Dreessen Dorner, In	(402) 330-8860	dsdreessen@td2co.com

ADDRESS	CITY	STATE	ZIP CODE
10836 Old Mill Road	Omaha	NE	68154

7.0 PROJECT OWNER:

I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.

PROJECT OWNER SIGNATURE

Donald T Quinn

PRINTED NAME	DATE
Don Quinn	July 23, 2015

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Vice President, Sapp Bros, Inc.	(402) 895-7038	dquinn@sappbros.net

Mail completed copy to:
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
P.O. BOX 176
JEFFERSON CITY, MO 65102-0176

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.

PART B – LAND APPLICATION ONLY
(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: ☐ Domestic ☐ State/National Park ☐ Seasonal business
☐ Municipal ☐ Municipal with a pretreatment program or significant industrial users
☐ Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
☐ 12 months per year ☐ Part of the year (list months): _____

8.3 This system is designed for:
☐ No-discharge.
☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreational season, April – October, and discharge during November – March.
☐ Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than three basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen ☐ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.
Basin #1: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #3: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual _____ Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.6 Actual months used for irrigation (check all that apply):
☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.7 Land application rate is based on:
☐ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N&P) If N&P is selected, is the plan included? ☐ YES ☐ NO