STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law),

Permit No.	MO-0118117
Owner:	South St. Joseph Industrial Sewer District
Address:	1409 Lower Lake Road, St. Joseph, MO 64504
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	South St. Joseph Industrial Sewer District WWTP
Facility Address:	1409 Lower Lake Road, St. Joseph, MO 64504
Legal Description:	See Page 2 - 11
UTM Coordinates:	See Page 2 - 11
Receiving Stream:	See Page 2 - 11
First Classified Stream and ID:	See Page 2 - 11
USGS Basin & Sub-watershed No.:	See Page 2 - 11

is authorized to land apply sludge from the facility described herein, in accordance with the limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Industrial no-discharge, land application. Wastewater is discharged to City of St. Joseph POTW under Permit No. 101012. Sludge is land applied. SIC #4952, 2879, 2047, and 2075

This permit authorizes only land application of wastewater and sludge under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

January 1, 2020
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

June 30, 2023
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

This is a no discharge facility providing primary pre-treatment of industrial wastes from several industries. After primary treatment, wastewater is discharged to City of Saint Joseph POTW. Sludge is land applied.

Sludge lagoons #1 - #4 and grit lagoon #2 no longer receive sludge. The existing sludge contained in these lagoons is being land applied in preparation for closure of the lagoons. Sludge lagoons #2 and #4, and grit lagoon #1 have been cleaned. Two concrete sludge digesters with clay liner have been constructed inside grit lagoon #1. All new sludge is stored in the two concrete digesters and is land applied.

Permitted Feature #001 – Sludge lagoons #1 - #4, grit lagoon #2 and the northern portion of grit lagoon #1. Pending the evaluation and approval of the liner in the northern portion of grit lagoon #1, this area can be used as a flow equalization basin.

Legal Description:	S ½, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338445, Y = 4398697
Receiving Stream:	Tributary to Missouri River
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

Permitted Feature #002 – Monitoring Well #1

Legal Description:	SE ¼, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338736, Y = 4398568
Receiving Stream:	Groundwater
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

Permitted Feature #003 – Removed from permit.

Permitted Feature #004 – Monitoring Well #2

Legal Description:	SW ¼, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338411, Y = 4398566
Receiving Stream:	Groundwater
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

Permitted Feature #005 – Monitoring Well #3

Legal Description:	SW ¼, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338232, Y = 4398573
Receiving Stream:	Groundwater
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

Permitted Feature #006 – Monitoring Well #4

Legal Description:	NW ¼, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338248, Y = 4398775
Receiving Stream:	Groundwater
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

Permitted Feature #007 – Monitoring Well #5

Legal Description:	NE ¼, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338731, Y = 4398800
Receiving Stream:	Groundwater
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #008– Concrete Storage Digester #1(North)

Legal Description:	NE ¼, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338657, Y = 4398777
Receiving Stream:	Tributary to Missouri River
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

Total depth: 12 feet
Upper operating level: 10 feet
Lower operating level: 0 feet
Freeboard: 2 feet
Storage volume (upper to lower operating level) 4,328,490 gallons

Permitted Feature #009 – Concrete Storage Digester #2 (South)

Legal Description:	NE ¼, SE ¼, Sec. 25, T57N, R36W, Buchanan County
UTM Coordinates:	X = 338654, Y = 4398725
Receiving Stream:	Tributary to Missouri River
First Classified Stream and ID:	Missouri River (P) (0226) 303(d)
USGS Basin & Sub-watershed No.:	10240011-0106

Total depth: 12 feet
Upper operating level: 10 feet
Lower operating level: 0 feet
Freeboard: 2 feet
Storage volume (upper to lower operating level) 4,148,546 gallons

Permitted Feature #010 – Land Application Site SR #1, 160 acres

Legal Description:	W ½, Sec. 3, T56N, R36W, Buchanan County
UTM Coordinates:	X = 334264, Y = 4395947
Receiving Stream and ID:	Contrary Creek (C) (0269)
USGS Basin & Sub-watershed No.:	10240011-0106

Permitted Feature #011 – Land Application Site SR #2, 42 acres

Legal Description:	NE ¼, NE ¼, Sec. 14, T56N, R36W, Buchanan County
UTM Coordinates:	X = 336922, Y = 4393274
Receiving Stream:	Tributary to Old Mud Lake
First Classified Stream and ID:	100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.:	10240011-0107

Permitted Feature #012 – Land Application Site SR #3, 49 acres

Legal Description:	E ½, SW ¼, Sec. 9, T56N, R36W, Buchanan County
UTM Coordinates:	X = 333042, Y = 4394018
Receiving Stream:	Tributary to Old Mud Lake
First Classified Stream and ID:	100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.:	10240011-0107

Permitted Feature #013 – Land Application Site SR #4, 78 acres

Legal Description:	N ½, SE ¼, Sec. 20, T56N, R36W, Buchanan County
UTM Coordinates:	X = 331946, Y = 4391036
Receiving Stream:	Tributary to Old Mud Lake
First Classified Stream and ID:	Old Mud Lake (L3) (7065)
USGS Basin & Sub-watershed No.:	10240011-0107

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #014 – Land Application Site SR #5, 100 acres
Legal Description: N ½, NW ¼, Sec. 30, T56N, R36W, Buchanan County
UTM Coordinates: X = 329502, Y = 4390411
Receiving Stream: Tributary to Missouri River (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0107

Permitted Feature #015 – Land Application Site SR #6, 80 acres
Legal Description: SE ¼, Sec. 24, T56N, R37W, Buchanan County
UTM Coordinates: X = 328670, Y = 4390855
Receiving Stream: Tributary to Missouri River (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0107

Permitted Feature #016 – Land Application Site SR #7, 237 acres
Legal Description: S ½, Sec. 10, T55N, R37W, Buchanan County
UTM Coordinates: X = 324842, Y = 4384223
Receiving Stream: Tributary to Missouri River
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0301

Permitted Feature #017 – Land Application Site SR #8, 30 acres
Legal Description: NE ¼, NE ¼, Sec. 25, T55N, R37W, Buchanan County
UTM Coordinates: X = 328406, Y = 4380260
Receiving Stream: Sugar Creek (C)
First Classified Stream and ID: Sugar Creek (C) (0271)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #018 – Land Application Site SR #9, 80 acres
Legal Description: S ½, NW ¼, Sec. 13, T55N, R36W, Buchanan County
UTM Coordinates: X = 337226, Y = 4382780
Receiving Stream: Tributary to Contrary Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0106

Permitted Feature #019 – Land Application Site JS 1, 160 acres
Legal Description: W ½, W ½, Sec. 33, T60N, R31W, DeKalb County
UTM Coordinates: X = 381213, Y = 4425901
Receiving Stream: Tributary to Middle Fork Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0705

Permitted Feature #020 – Land Application Site JS 2, 115 acres
Legal Description: N ½, N ½, Sec. 14, T60N, R30W, DeKalb County
UTM Coordinates: X = 395023, Y = 4430655
Receiving Stream: Tributary to Muddy Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0808

Permitted Feature #021 – Land Application Site JS 3, 480 acres
Legal Description: E ½, Sec. 11, T60N, R30W, DeKalb County
UTM Coordinates: X = 395117, Y = 4431603
Receiving Stream: Tributary to Grand River (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #022 – Land Application Site JS 4, 240 acres
Legal Description: N ½, Sec. 9, T60N, R30W, DeKalb County
UTM Coordinates: X =391623, Y = 4432297
Receiving Stream: Tributary to Groomer Branch (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

Permitted Feature #023 – Land Application Site JS 4a, 40 acres
Legal Description: SW ¼, SE ¼, Sec. 9, T60N, R30W, DeKalb County
UTM Coordinates: X = 391803, Y = 4431316
Receiving Stream: Tributary to Muddy Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0808

Permitted Feature #024 – Land Application Site JS 5, 40 acres
Legal Description: NE ¼, NE ¼, Sec. 8, T60N, R30W, DeKalb County
UTM Coordinates: X = 390616, Y = 4432534
Receiving Stream: Groomer Branch (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

Permitted Feature #025 – Land Application Site JS 6, 195 acres
Legal Description: SW ¼, Sec. 17, T61N, R29W, Davies County
UTM Coordinates: X = 398263, Y = 4437550
Receiving Stream: Tributary to Grand River (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

Permitted Feature #026 – Land Application Site JS 7, 240 acres
Legal Description: W ½, Sec. 18, T61N, R29W, Davies County
UTM Coordinates: X = 396628, Y = 4437829
Receiving Stream: Tributary to Grand River (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

Permitted Feature #027 – Land Application Site JS 8, 320 acres
Legal Description: N ½, Sec. 20, T61N, R29W, Davies County
UTM Coordinates: X = 398551, Y = 4436472
Receiving Stream: Tributary to Grand River (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

Permitted Feature #028 – Land Application Site JS 9, 120 acres
Legal Description: S ½, S ½, Sec. 28, T61N, R30W, Gentry County
UTM Coordinates: X = 390651, Y = 4434493
Receiving Stream: Tributary to Wheeler Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

Permitted Feature #029– Land Application Site JS 10, 160 acres
Legal Description: SE ¼, Sec. 29, T61N, R30W, Gentry County
UTM Coordinates: X = 389256, Y = 4434801
Receiving Stream: Campbell Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0803

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #030 – Land Application Site JS 11, 120 acres
Legal Description: SW ¼, Sec. 36, T61N, R30W, Gentry County
UTM Coordinates: X = 394931, Y = 4432767
Receiving Stream: Groomer Branch (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0807

Permitted Feature #031 – Land Application Site JS 12, 200 acres
Legal Description: NW ¼, Sec. 5, T61N, R31W, Gentry County
UTM Coordinates: X = 378884, Y = 4442308
Receiving Stream: Stillhouse Branch (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0802

Permitted Feature #032 – Land Application Site JS 13, 160 acres
Legal Description: E ½, W ½, Sec. 4, T61N, R31W, Gentry County
UTM Coordinates: X = 380672, Y = 4442106
Receiving Stream: Tributary to Stillhouse Branch (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0802

Permitted Feature #033 - Land Application Site JS 14, 240 acres
Legal Description: N ½, N ½, Sec. 34, T61N, R31W, Gentry County
UTM Coordinates: X = 382477, Y = 4434485
Receiving Stream: Tributary to Hickory Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0801

Permitted Feature #034– Land Application Site JS 16, 240 acres
Legal Description: N ½, Sec. 31, T61N, R31W, Gentry County
UTM Coordinates: X = 377495, Y = 4434399
Receiving Stream: Tributary to King Lake (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0702

Permitted Feature #035 – Land Application Site JS 17, 240 acres
Legal Description: NW ¼, Sec. 27, T62N, R31W, Gentry County
UTM Coordinates: X = 382187, Y = 4445261
Receiving Stream: Stillhouse Branch (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0802

Permitted Feature #036 – Land Application Site JS 19, 80 acres
Legal Description: S ½, SE ¼, Sec. 32, T62N, R31W, Gentry County
UTM Coordinates: X = 379682, Y = 4442847
Receiving Stream: Tributary to Stillhouse Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0802

Permitted Feature #037 – Land Application Site JS 20, 80acres
Legal Description: N ½, S ½, Sec. 33, T62N, R31W, Gentry County
UTM Coordinates: X = 380956, Y = 4443283
Receiving Stream: Tributary to Stillhouse Branch
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0802

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #038 – Land Application Site RP 1, 160 acres
Legal Description: SE ¼, Sec. 7, T59N, R30W, DeKalb County
UTM Coordinates: X = 388613, Y = 4421844
Receiving Stream: Tributary to Middle Fork Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0705

Permitted Feature #039 – Land Application Site RP 1a, 80 acres
Legal Description: S ½, NE ¼, Sec. 7, T59N, R30W, DeKalb County
UTM Coordinates: X = 388605, Y = 4422431
Receiving Stream: Tributary to East Fork Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0704

Permitted Feature #040 – Land Application Site RP 2a, 50 acres
Legal Description: SW ¼, NW ¼, Sec. 8, T59N, R30W, DeKalb County
UTM Coordinates: X = 389233, Y = 4422427
Receiving Stream: Tributary to East Fork Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0704

Permitted Feature #041– Land Application Site RP 2, 50 acres
Legal Description: SE ¼, NW ¼, Sec. 8, T59N, R30W, DeKalb County
UTM Coordinates: X = 389737, Y = 4422404
Receiving Stream: Tributary to Irvins Branch (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0710

Permitted Feature #042 – Land Application Site RP 3, 118 acres
Legal Description: S ½, NE ¼, Sec. 18, T59N, R30W, DeKalb County
UTM Coordinates: X = 388545, Y = 4420667
Receiving Stream: Tributary to Lost Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0707

Permitted Feature #043 – Land Application Site RP 4, 280 acres
Legal Description: S ½, Sec. 19, T59N, R30W, DeKalb County
UTM Coordinates: X = 388366, Y = 4418707
Receiving Stream: Lost Creek (C)
First Classified Stream and ID: Lost Creek (C) (0495)
USGS Basin & Sub-watershed No.: 10280101-0707

Permitted Feature #044 – Land Application Site RP 5, 280 acres
Legal Description: N ½, Sec. 30, T59N, R30W, DeKalb County
UTM Coordinates: X = 388427, Y = 4417833
Receiving Stream: Tributary to Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0707

Permitted Feature #045 – Land Application Site RP 6, 33 acres
Legal Description: SW ¼, SW ¼, Sec. 30, T59N, R30W, DeKalb County
UTM Coordinates: X = 387431, Y = 4416734
Receiving Stream: Tributary to West Fork Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0703

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #046– Land Application Site RP 7, 80 acres
Legal Description: N ½, N ½, Sec. 22, T60N, R30W, DeKalb County
UTM Coordinates: X = 393131, Y = 4429209
Receiving Stream: Tributary to Muddy Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0808

Permitted Feature #047 – Land Application Site RP 8, 147 acres
Legal Description: N ½, S ½, Sec. 31, T60N, R30W, DeKalb County
UTM Coordinates: X = 388106, Y = 4425386
Receiving Stream: East Fork Lost Creek (C)
First Classified Stream and ID: East Fork Lost Creek (C) (0497)
USGS Basin & Sub-watershed No.: 10280101-0704

Permitted Feature #048 – Land Application Site RP 9, 125 acres
Legal Description: NE ¼, Sec. 1, T59N, R31W, DeKalb County
UTM Coordinates: X =386957, Y = 4424499
Receiving Stream: East Fork Lost Creek (C)
First Classified Stream and ID: East Fork Lost Creek (C) (0497)
USGS Basin & Sub-watershed No.: 10280101-0704

Permitted Feature #049 – Land Application Site RP 10, 115 acres
Legal Description: W ½, E ½, Sec. 14, T59N, R31W, DeKalb County
UTM Coordinates: X = 385156, Y = 4421000
Receiving Stream: Lost Creek (C)
First Classified Stream and ID: Lost Creek (C) (0495)
USGS Basin & Sub-watershed No.: 10280101-0706

Permitted Feature #050 – Land Application Site RP 11, 80 acres
Legal Description: W ½, W ½, Sec. 27, T59N, R31W, DeKalb County
UTM Coordinates: X = 382523, Y = 4417642
Receiving Stream: Tributary to West Fork Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #051 – Land Application Site RP 11a, 40 acres
Legal Description: NW ¼, NW ¼, Sec. 27, T59N, R31W, DeKalb County
UTM Coordinates: X = 382562, Y = 4418225
Receiving Stream: Tributary to Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0706

Permitted Feature #052 – Land Application Site RP 12, 280 acres
Legal Description: E ½, Sec. 36, T60N, R31W, DeKalb County
UTM Coordinates: X = 387071, Y = 4425515
Receiving Stream: East Fork Lost Creek (C)
First Classified Stream and ID: East Fork Lost Creek (C) (0497)
USGS Basin & Sub-watershed No.: 10280101-0704

Permitted Feature #053 – Land Application Site LS 1, 240 acres
Legal Description: E ½, Sec. 21, T59N, R31W, DeKalb County
UTM Coordinates: X = 381982, Y = 4419511
Receiving Stream: Tributary to Lost Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0706

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #054 – Land Application Site LS 2, 120 acres
Legal Description: S ½, SE ¼, Sec. 6, T58N, R31W, DeKalb County
UTM Coordinates: X = 378666, Y = 4413920
Receiving Stream: Tributary to Willow Brook Lake (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #055 – Land Application Site LS 3, 60 acres
Legal Description: E ½, SW ¼, Sec. 5, T58N, R31W, DeKalb County
UTM Coordinates: X = 379685, Y = 4414189
Receiving Stream and ID: Willow Brook Lake (L1)
First Classified Stream and ID: Willow Brook Lake (L1) (7438)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #056 – Land Application Site LS 4, 115 acres
Legal Description: S ½, SW ¼, Sec. 4, T58N, R31W, DeKalb County
UTM Coordinates: X = 380994, Y = 4413721
Receiving Stream: Willow Brook Lake (L1)
First Classified Stream and ID: Willow Brook Lake (L1) (7438)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #057 – Land Application Site LS 5, 480 acres
Legal Description: N ½, Sec. 8, T58N, R31W, DeKalb County
UTM Coordinates: X = 379628, Y = 4413304
Receiving Stream: Tributary to Willow Brook Lake (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #058 – Land Application Site LS 5a, 80 acres
Legal Description: W ½, SE ¼, Sec. 8, T58N, R31W, DeKalb County
UTM Coordinates: X = 380006, Y = 4412451
Receiving Stream and ID: Tributary to Willow Brook Lake (C)
First Classified Stream and ID: 100K Extent-Remaining Lakes (C) (7630)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #059 – Land Application Site LS 5b, 80 acres
Legal Description: E½, SE ¼, Sec. 8, T58N, R31W, DeKalb County
UTM Coordinates: X = 380423, Y = 4412444
Receiving Stream: Tributary to Tributary to West Fork Lost Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #060 – Land Application Site LS 6, 120 acres
Legal Description: NW ¼, Sec. 9, T58N, R31W, DeKalb County
UTM Coordinates: X = 381084, Y = 4413118
Receiving Stream: Tributary to Tributary to West Fork Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10280101-0703

Permitted Feature #061– Land Application Site LS 7, 120 acres
Legal Description: NE ¼, Sec. 13, T58N, R32W, DeKalb County
UTM Coordinates: X = 376887, Y = 4411744
Receiving Stream: Tributary to Castile Creek (C)
First Classified Stream: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240012-0501

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #062 – Land Application Site SR 10, 64 acres
Legal Description: SE ¼, NE ¼, Sec. 4, T56N, R36W, Buchanan County
UTM Coordinates: X = 333801, Y = 4396197
Receiving Stream and ID: Tributary to Contrary Creek
First Classified Stream and ID: Contrary Creek (C) (0269)
USGS Basin & Sub-watershed No.: 10240011-0106

Permitted Feature #063 – Land Application Site SR 12N, 32 acres
Legal Description: NE ¼, SE ¼, Sec. 11, T56N, R36W, Buchanan County
UTM Coordinates: X = 337034, Y = 4394112
Receiving Stream: Tributary to Old Mud Lake
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0107

Permitted Feature #064 – Land Application Site SR 12S, 46 acres
Legal Description: SE ¼, SE ¼, Sec. 11, T56N, R36W, Buchanan County
UTM Coordinates: X = 336974, Y = 4393715
Receiving Stream: Tributary to Old Mud Lake
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0107

Permitted Feature #065 – Land Application Site SR 15N, 94 acres
Legal Description: S ½, NE ¼, Sec. 1, T55N, R37W, Buchanan County
UTM Coordinates: X = 328431, Y = 4386384
Receiving Stream: Tributary to Missouri River
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0108

Permitted Feature #066 – Land Application Site SR 15S, 79 acres
Legal Description: W ½, SE ¼, Sec. 1, T55N, R37W, Buchanan County
UTM Coordinates: X = 328365, Y = 4385275
Receiving Stream: Lost Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0108

Permitted Feature #067 – Land Application Site SR 16, 31 acres
Legal Description: NE ¼, NW ¼, Sec. 13, T55N, R37W, Buchanan County
UTM Coordinates: X = 327764, Y = 4383486
Receiving Stream: Tributary to Missouri River
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0108

Permitted Feature #068 – Land Application Site SR 17, 70 acres
Legal Description: SW ¼, Sec. 13, T55N, R37W, Buchanan County
UTM Coordinates: X = 327598, Y = 4382502
Receiving Stream: Tributary to Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #069 – Land Application Site SR 19, 80 acres
Legal Description: NE ¼, Sec. 20, T55N, R36W, Buchanan County
UTM Coordinates: X = 331599, Y = 4381551
Receiving Stream: Tributary to Sugar Creek (C)
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #070 – Land Application Site SR 21, 75 acres
Legal Description: W ½, SE ¼, Sec. 15, T55N, R36W, Buchanan County
UTM Coordinates: X = 334637, Y = 4382230
Receiving Stream: Tributary to Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #071– Land Application Site SR 22, 42 acres
Legal Description: W ½, SW ¼, Sec. 21, T55N, R36W, Buchanan County
UTM Coordinates: X = 332114, Y = 4380685
Receiving Stream: Tributary to Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #072 – Land Application Site SR 23, 97 acres
Legal Description: E ½, SW ¼, Sec. 18, T55N, R36W, Buchanan County
UTM Coordinates: X = 329316, Y = 4382510
Receiving Stream: Tributary to Little Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #073 – Land Application Site SR 24, 54 acres
Legal Description: S ½, NE ¼, Sec. 26, T56N, R36W, Buchanan County
UTM Coordinates: X = 336720, Y = 4389732
Receiving Stream: Tributary to Old Mud Lake
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0107

Permitted Feature #074 – Land Application Site SR 25, 70 acres
Legal Description: S ½, SE ¼, Sec. 23, T55N, R37W, Buchanan County
UTM Coordinates: X = 326630, Y = 4380692
Receiving Stream: Tributary to Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #075 – Land Application Site SR 26 200 acres
Legal Description: W ½, Sec. 24, T55N, R37W, Buchanan County
UTM Coordinates: X = 327510, Y = 4381446
Receiving Stream: Tributary to Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #076 – Land Application Site SR 27, 46 acres
Legal Description: W ½, Sec. 16, T55N, R36W, Buchanan County
UTM Coordinates: X = 332625, Y = 4382713
Receiving Stream: Tributary to Little Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

Permitted Feature #077 – Land Application Site SR 28, 150 acres
Legal Description: NW ¼, Sec. 4, T54N, R36W, Platte County
UTM Coordinates: X = 332225, Y = 4376804
Receiving Stream: Tributary to Sugar Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0302

FACILITY DESCRIPTION (CONTINUED)

Permitted Feature #078 – Land Application Site SR 30, 96 acres
Legal Description: NW ¼, Sec. 23, T55N, R37W, Buchanan County
UTM Coordinates: X = 326137, Y = 4381963
Receiving Stream: Tributary to Lost Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0108

Permitted Feature #079 – Land Application Site SR 31, 57 acres
Legal Description: W ½, SE ¼, Sec. 12, T55N, R37W, Buchanan County
UTM Coordinates: X = 328154, Y = 4383939
Receiving Stream: Tributary to Lost Creek
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: 10240011-0108

Permitted Feature #080 – Land Application Site Rouse 1, 553 acres
Legal Description: Sec. 2, T58N, R36W, Andrew County
UTM Coordinates: X = 336918, Y = 4415625
Receiving Stream: Tributary to Mace Creek
First Classified Stream and ID: Mace Creek (C) (0267)
USGS Basin & Sub-watershed No.: 10240011-0102

Permitted Feature #081 – Land Application Site Rouse 2, 149 acres
Legal Description: W ½, Sec. 1, T58N, R36W, Andrew County
UTM Coordinates: X = 337987, Y = 4415366
Receiving Stream: Tributary to Mace Creek
First Classified Stream and ID: Mace Creek (C) (0267)
USGS Basin & Sub-watershed No.: 10240011-0102

Permitted Feature #082 – Land Application Site Rouse 3, 73 acres
Legal Description: SW ¼, Sec. 1, T58N, R36W, Andrew County
UTM Coordinates: X = 337892, Y = 4414695
Receiving Stream: Tributary to Mace Creek
First Classified Stream and ID: Mace Creek (C) (0267)
USGS Basin & Sub-watershed No.: 10240011-0102

Permitted Feature #083 – Land Application Site Rouse 4, 166 acres
Legal Description: NW ¼, Sec. 12, T58N, R367W, Andrew County
UTM Coordinates: X = 337908, Y = 4414144
Receiving Stream: Tributary to Mace Creek
First Classified Stream and ID: Mace Creek (C) (0267)
USGS Basin & Sub-watershed No.: 10240011-0102

Permitted Feature #084 – Land Application Site Rouse 5, 35 acres
Legal Description: NW ¼, SE ¼, Sec. 6, T59N, R36W, Andrew County
UTM Coordinates: X = 337717, Y = 4416726
Receiving Stream: Tributary to Mace Creek
First Classified Stream and ID: Mace Creek (C) (0267)
USGS Basin & Sub-watershed No.: 10240011-0102

Permitted Feature #085 – Land Application Site Rouse 6, 6 acres
Legal Description: NW ¼, NE ¼, Sec. 11, T58N, R36W, Buchanan County
UTM Coordinates: X = 337091, Y = 4414417
Receiving Stream: Tributary to Mace Creek
First Classified Stream and ID: Mace Creek (C) (0267)
USGS Basin & Sub-watershed No.: 10240011-0102

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PERMITTED FEATURE #008-#009	TABLE A-1 STORAGE BASIN LIMITATIONS AND MONITORING REQUIREMENTS			
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:				
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: OM					
STORAGE BASINS					
Freeboard Φ	Feet	*		once/month	measured
Rainfall	Inches	*		daily	measured
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2020. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

PERMITTED FEATURE #001, #008-#009	TABLE A-2 STORAGE BASIN LIMITATIONS AND MONITORING REQUIREMENTS			
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:				
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: S					
INDUSTRIAL SLUDGE (€)					
pH	SU	*		once/year	grab
Total Kjeldahl Nitrogen as N	mg/kg	*		once/year	grab
Nitrate Nitrogen as N	mg/kg	*		once/year	grab
Ammonia as N	mg/kg	*		once/year	grab
Total Phosphorus as P	mg/kg	*		once/year	grab
Percent Solids	%	*		once/year	grab
Arsenic (Total Recoverable)	mg/kg	*		once/year	grab
Cadmium (Total Recoverable)	mg/kg	*		once/year	grab
Chromium (Total Recoverable)	mg/kg	*		once/year	grab
Chromium III	µg/L	*		once/year	grab
Chromium VI	µg/L	*		once/year	grab
Iron (Total Recoverable)	mg/kg	*		once/year	grab
Lead (Total Recoverable)	mg/kg	*		once/year	grab
Mercury (Total Recoverable)	mg/kg	*		once/year	grab
Nickel (Total Recoverable)	mg/kg	*		once/year	grab
Selenium (Total Recoverable)	mg/kg	*		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

PERMITTED FEATURES #002, #004 - #007	TABLE A-3. GROUNDWATER MONITIORING WELL MONITORING REQUIREMENTS

The permittee is authorized to conduct land application of sludge as specified in the application for this permit. The final limitations shall become effective upon issuance and remain in effect until expiration of the permit. Subsurface discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: MW					
Groundwater Depth	feet	*		once/quarter ◊	measured***
Nitrate Nitrogen as N	mg/L	10		once/quarter ◊	grab
Fecal Coliform	#/100mL	*		once/quarter ◊	grab
pH	SU	**		once/quarter ◊	grab
Aluminum (Total Recoverable)	µg/L	*		once/quarter ◊	grab
Arsenic (Total Recoverable)	µg/L	50		once/quarter ◊	grab
Beryllium (Total Recoverable)	µg/L	4		once/quarter ◊	grab
Boron (Total Recoverable)	µg/L	2000		once/quarter ◊	grab
Cadmium (Total Recoverable)	µg/L	5		once/quarter ◊	grab
Chromium III	µg/L	100		once/quarter ◊	grab
Chromium VI	µg/L	*		once/quarter ◊	grab
Copper (Total Recoverable)	µg/L	1300		once/quarter ◊	grab
Iron (Total Recoverable)	µg/L	*		once/quarter ◊	grab
Lead (Total Recoverable)	µg/L	15		once/quarter ◊	grab
Mercury (Total Recoverable)	µg/L	2		once/quarter ◊	grab
Nickel (Total Recoverable)	µg/L	100		once/quarter ◊	grab
Selenium (Total Recoverable)	µg/L	50		once/quarter ◊	grab
Zinc (Total Recoverable)	µg/L	5000		once/quarter ◊	grab
Methylene Chloride	µg/L	4.7		once/quarter ◊	grab
2, 4-Dichlorophenol	µg/L	93		once/quarter ◊	grab
Phenol	µg/L	300		once/quarter ◊	grab
Toluene	µg/L	1000		once/quarter ◊	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2020.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #010-#085	TABLE A-2 LAND APPLICATION FIELD LIMITATIONS AND MONITORING REQUIREMENTS				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: LA					
INDUSTRIAL SLUDGE APPLICATION 𝔛					
Application Area	Acres	*		once/day	measured
Application Rate	tons/Acre	*		once/day	measured
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2020. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE MOUNTS.					
LIMIT SET: SO					
SOIL MONITORING ▼					
pH (salt) Ξ	SU	*		once/permit cycle	composite
Nitrate Nitrogen as N	mg/kg ⁜	*		once/permit cycle	composite
Phosphorus, Bray P1 method	mg/kg ⁜	*		once/permit cycle	composite
MONITORING REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE; THE FIRST REPORT IS DUE JANUARY 28, 2023. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

* Monitoring requirement only
** pH is measured in pH units and is not to be averaged. Water contaminants shall not cause pH to be out of the range of 6.5-9.0 pH units.
*** Measure groundwater level in feet below ground surface.
Φ Storage Basin freeboard shall be reported as Storage Basin water level in feet below the overflow level.
€ Sludge that is land applied shall be sampled at the storage basin or application equipment prior to land application.
𝔛 Reporting is only required for permitted features where land application occurred during the month. If no land application occurs at a permitted feature, no reporting is required. These are unscheduled parameters.
▼ Sample the upper 6 to 8 inches of soil. Composite samples shall be collected from each permitted land application site. See Section E. Land Application System Condition #3(j) Soil Monitoring for additional guidance.
Ξ Soil pH shall be maintained in a range that is optimal for plant growth.
⁜ Some soils test results are reported in ppm or lbs. acre. Use these conversion factors: 1mg/kg = 1ppm, lbs./acre/2 = ppm.
◊ See table below for quarterly sampling

MINIMUM QUARTERLY SAMPLING REQUIREMENTS			
QUARTER	MONTHS	EFFLUENT PARAMETERS	REPORT IS DUE
First	January, February, March	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

C. STANDARD CONDITIONS

1. Sampling Requirements
   (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   (b) All samples shall be taken at the permitted feature(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. Monitoring Requirements.
   (a) Records of monitoring information shall include:
      (1) The date, exact place, and time of sampling or measurements;
      (2) The individual(s) who performed the sampling or measurements;
      (3) The date(s) analyses were performed;
      (4) The individual(s) who performed the analyses;
      (5) The analytical techniques or methods used; and
      (6) The results of such analyses.
   (b) If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department.

3. Sample and Monitoring Calculations. Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

4. Test Procedures. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.

5. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

6. Planned Changes.
   (a) The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source; or
      (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.;
      (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
      (4) Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.

7. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. An application for renewal of this permit shall be submitted at least 180 days prior to the expiration date of this permit.

C. STANDARD CONDITIONS (CONTINUED)

8. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

   It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law. The commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

9. Permit Transfer
   (a) Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   (b) The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law.
   (c) The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

10. Duty to Provide Information. The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. Inspection and Entry. The permittee shall allow the Department or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
   (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
   (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
   (d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Missouri Clean Water Law, any substances or parameters at any location.

12. Closure of Treatment Facilities
   (a) Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
   (b) Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

D. SPECIAL CONDITIONS

1. This permit does not authorize the discharge of wastewater or sludge. Other materials, chemicals and substances not considered wastewater or sludge being treated and disposed of by the land application system are not authorized to bedischarged.

D. SPECIAL CONDITIONS (CONTINUED)

2. Spills, Overflows, and Other Unauthorized Discharges.
   (a) Any spill, overflow, or other discharge(s) not specifically authorized above are unauthorized discharges, shall constitute a permit violation, and shall be reported in accordance with Standard Conditions Part 1 Section B.2. Unauthorized discharges are to be reported to the Kansas City Regional Office during normal business hours or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours within 24 hours of becoming aware of the discharge.

   (b) Monitoring. Any unauthorized discharge shall be monitored for the parameters in the table below at least once during the discharge event. Additional monitoring may be required by the Department on a case-by-case basis. The facility shall submit test results, along with the number of days the storage basin(s) has discharged during the month, to the via the Electronic Discharge Monitoring Report (eDMR) Submission System by the 28th day of the month after the discharge ceases. Permittee shall monitor for the following constituents:

Constituent	Units
Effluent Flow	MGD
Biochemical Oxygen Demand$_5$	mg/L
Total Suspended Solids	mg/L
Ammonia as N	mg/L
pH – Units	SU
Oil & Grease	mg/L

3. Electronic Discharge Monitoring Report (eDMR) Submission System.
   Once the permittee is activated in the eDMR system:
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. The eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Collection System Maintenance Annual Reports;
      (2) Sludge/Biosolids Annual Reports;
         (i) In addition to the annual Sludge/Biosolids report submitted to the department, the permittee must submit Sludge/Biosolids Annual Reports electronically using EPA's NPDES Electronic Reporting Tool ("NeT") (https://cdx.epa.gov/).
      (3) Any additional report required by the permit excluding bypass reporting.
      After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
      (1) General Permit Applications/Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs);
      (3) No Exposure Certifications (NOEs);
      (4) Bypass reporting, See Special Condition #XX for 24-hr. bypass reporting requirements.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

4. Reporting of Non-Detects:
   (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
   (b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non-Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.

D. SPECIAL CONDITIONS (CONTINUED)

(c) The permittee shall report the "Non-Detect" result using the less than sign and the minimum detection limit (e.g. <10).
(d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
(e) The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives
(f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the "<MDL" shall be reported as indicated in item (C).

5. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

6. Hazardous waste regulated under the Missouri Hazardous Waste Law and regulations shall not be land applied under this permit.

7. Release of a hazardous substance must be reported to the department in accordance with 10 CSR 24-3.010. A record of each reportable spill shall be retained with the permit and made available to the department upon request.

8. Changes in Discharges of Toxic Pollutant
In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
(a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
(1) One hundred micrograms per liter (100 µg/L);
(2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
(3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
(4) One milligram per liter (1 mg/L) for antimony;
(5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
(6) The notification level established by the Department in accordance with 40 CFR 122.44(f).
(b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
(1) Five hundred micrograms per liter (500 µg/l);
(2) One milligram per liter (1 mg/l) for antimony;
(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
(4) The level established by the Director in accordance with §122.44(f).

9. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.

10. All permitted features, including emergency outfalls, must be clearly marked in the field. The permitted features and land application fields shall also be marked on the aerial or topographic site map included with the Operation and Maintenance manual.

11. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems, including key operating procedures, an aerial or topographic site map with the permitted features, land application fields, and irrigation buffer zones marked, and a brief summary of the operation of the facility. The O & M manual shall be made available to the operator and available to the department upon request. The O&M Manual shall be reviewed and updated at least every five years.

12. An all-weather access road shall be provided to the treatment facility.

E. LAND APPLICATION CONDITIONS

1. Storage Basin.
   (a) The berms of the storage basin(s) shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.
   (b) Earthen storage basins shall have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm. It is a violation of this permit to place material in the emergency spillway or otherwise cause it to cease to function properly, as this may result in a catastrophic failure of the storage basin.

2. Land Application Equipment.
   (a) Spray application equipment shall minimize the formation of aerosols.
   (b) Land application equipment shall be visually inspected daily during land application to check for equipment malfunctions and leaks. The application system shall be operated so as to provide uniform distribution of wastes over the entire land application site and shall be capable of applying the annual design flow during an application period of less than 100 days or 800 hours per year. Land application equipment shall be calibrated at least once annually.

3. Land Application Fields.
   (a) This special condition does not apply to fertilizer products that are exempted under the Missouri Clean Water Law and regulations, 10 CSR 20-6.015(3)(B)8.
   (b) If land application sites listed in this permit are also included as land application sites in another permit, the wastewater and sludge applications from other sources shall be included in the application rates in the facility description. Records of the amount and application rate of wastewater or sludge from other sources must be kept.
   (c) Public Access Restrictions. This permit does not authorize application of wastewater to public use areas.
   (d) No land application shall occur when the soil is frozen, snow covered, or saturated. There shall be no application during a precipitation event or if a precipitation event that is likely to create runoff is forecasted to occur within 24 hours of a planned application.
   (e) Land application shall occur only during daylight hours.
   (f) Land application fields shall be checked daily during land application for runoff.
   (g) Setback distances from sensitive features. There shall be no land application within:
      (1) 300 feet of any well, sinkhole, losing stream, wetland, or cave entrance, water supply impoundment or stream intake;
      (2) 150 feet of an occupied residence, public building, or public use area;
      (3) 50 feet of gaining perennial or intermittent stream, public or privately owned pond or lake;
      (4) 50 feet of property line or public road.
   (h) Sludge application slope limitations for application sites are as follows;
      (1) Slopes of 6 percent or less there are no limitations.
      (2) Slopes of 7 to 12 percent, biosolids when may be applied with no limitation when soil conservation practices are used to meet the minimum erosion levels.
      (3) Slopes greater than 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less
   (i) Sludge should not be applied to fields used to grow food crops for human consumption to be eaten raw, such as leafed vegetables or root crops.
   (j) Soil Monitoring.
      (1) Composite soil samples shall be collected once per permit cycle from each field listed in this permit where land application has occurred in the last 12 months. No land application shall occur on fields listed in this permit if soil sample results are more the five (5) years old.
      (2) Soil sampling shall be in accordance with University of Missouri (MU) Guides G9215, Soil Sampling Pastures or G9217, Soil Sampling Hayfields and Row Crops or other methods approved by the department. The recommendation of one composite sample per 20 acres in G9215 and G9217 is not required by this permit, however, this is a useful method to identify soil fertility fluctuations in large fields due to past management practices, soil type, and variability of crop yields. There shall be at least one composite sample per 80 acres.
      (3) Testing shall conform to Recommended Chemical Soil Testing Procedures for North Central Region (North Central Regional Research Publication 221 Revised), or Soil Testing in Missouri (MU Extension Guide EC923), or other methods approved by the department.
   (k) Sludge land applications shall not exceed agronomic rates to ensure agricultural use of nutrients and prevent contamination of surface and groundwater. The agronomic rate is the amount of sludge applied to a field to meet the fertilizer recommendation.

4. Nitrogen Loading Rate. Land application to fields listed in this permit shall use the following protocols to determine the amount of sludge to be applied.
   (a) The fertilizer recommendation shall be based on the following:

E. LAND APPLICATION CONDITIONS (CONTINUED)

(1) The nutrient recommendation (nitrogen or phosphorus) for each crop. Recommendations can be found in University of Missouri Extension Guide WQ430 Crop/Nutrient Considerations for Biosolids or from publications by other land grant universities in adjoining states,
(2) Realistic yield goal for each crop. Yield goals should be based on actual crop yield records from multiple years for each field. Good judgment should be used to counteract unusually high or low yields. If a field's yield history is not available the USDA county wide average or other approved source may be used, and
(3) The most recent soil test.

(b) Sludge applications shall be conducted according to one the following nutrient based management practices.
(1) Plant Available Nitrogen (PAN) based application. This method can be used when soil test phosphorus (P) levels are 120 pounds or less per acre using Bray P-1 test method, or if the field has been assessed by Missouri Phosphorus Index (P-index) with a low or medium rating. The amount of sludge to be applied shall be adjusted annually based on the PAN calculation using the current sludge nutrient analysis and the following:
(i) For non-legume crops, the nitrogen fertilizer recommendation shall be adjusted to account for nitrogen credits from a preceding legume crop and residual nitrogen from the previous year's application. Nitrogen removal rates can be found in WQ430.
(ii) For legume crops, the nitrogen removal capacity of the legume crops should be based on the estimated nitrogen content of the harvested crop as defined in WQ430 and a realistic yield goal. The estimated nitrogen content of the crop must be adjusted using nitrogen credits for residual nitrogen fertilizer from the previous year's application.

PAN = [Ammonia Nitrogen x volatilization factor*] + [Organic Nitrogen x 0.2] + [Nitrate Nitrogen]
Volatilization factor is 0.7 for surface application and 1 for subsurface application.

(2) Phosphorus based application. This method must be used when soil test phosphorus (P) levels are above 120 pounds per acre using Bray P-1 test method, or if the P-index rating is high. The amount of sludge to be applied shall be adjusted annually based the phosphorus content of the current sludge nutrient analysis and may be done applied according to one of the following methods;
(i) The annual amount of phosphorus applied shall not exceed the planned crop's phosphorus removal estimate from WQ430, or from publications by other land grant universities in adjoining states or,
(ii) Multi-year phosphorus applications. Sludge applications can exceed the annual planned phosphate removal estimate for the crop when a multi-year phosphorus application is utilized. The multi-year application must comply with the following conditions:
(a) The amount of sludge applied shall not exceed the nitrogen fertilizer recommendation or the estimated nitrogen removal capacity of the planned crop during the year of the application;
(b) The amount of phosphorus banked shall not exceed four years of the estimated crop removal rate for the planned crop rotation;
(c) The actual application rate shall not exceed the multi-year application rate; and
(d) No additional sludge applications shall occur until the applied phosphorus has been removed from the field by crop removal or harvest.
(3) No land application can occur if the P-index rating for a field is very high.

5. Record Keeping
(a) A daily land application log shall be prepared and kept on file at the permittee office location for each application site showing dates of application, weather condition (sunny, overcast, raining, below freezing etc…), soil moisture condition, application method.
(b) A record of monthly visual storage structure inspections shall be maintained.
(c) A record of land application equipment inspections and calibrations as well as land application field inspections shall be maintained.
(d) A record of all PAN calculations.
(e) All records and monitoring results shall be maintained for at least five years and shall be made available to the department upon request.

6. Annual Report on Land Application. An annual report is required in addition to other reporting requirements under Section A of this permit. The annual report shall be submitted by January 28 of each year. The report shall include, but is not limited to, a summary of the following:
(a) Record of maintenance and repairs during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year.
(b) The number of days the storage structure discharged during the year, the discharge flow, reason the discharge occurred and effluent analysis performed.

E. LAND APPLICATION CONDITIONS (CONTINUED)

(c) A summary for each field used for land application showing number of acres used number of days application occurred, crop grown and yield, and total amount of wastewater and/or sludge applied (gal. or tons/acre).
(d) For fields where the total nitrogen application exceeds 150 lbs./acre, submit PAN calculations to document that the applied nitrogen will be utilized.
(e) Narrative summary of any problems or deficiencies identified, corrective action taken and improvements planned.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0118117
SOUTH ST. JOSEPH INDUSTRIAL SEWER DISTRICT WWTP

Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for industrial land application and groundwater monitoring.

PART I. FACILITY INFORMATION

Facility Type: Non-POTW; <1 MGD
SIC Code(s): #4952, The following SIC Codes are provided only for waste characterization. The facility only receives and treats waste streams for these industries. #2879, #2047, #2075
NAICS Code(s): 221320
Application Date: 01/03/2018
Expiration Date: 06/30/2018
Last Inspection: 03/27/2019

FACILITY DESCRIPTION:
This is a no discharge facility providing primary pre-treatment of industrial wastes from several industries. After primary treatment wastewater is discharged to City of Saint Joseph POTW. Sludge is land applied.

Sludge lagoons #1 - #4 and grit lagoon #2 no longer receive sludge. The existing sludge contained in these lagoons is being land applied in preparation for closure of the lagoons. Sludge lagoons #2 and #4, and grit lagoon #1 have been cleaned. Two concrete sludge digesters with clay liner have been constructed inside grit lagoon #1. All new sludge is stored in the two concrete digesters and is land applied.

In accordance with 40 CFR 122.21(f)(6), the Department evaluated other permits currently held by this facility. This facility holds no other permits.

PERMITTED FEATURES TABLE:

PERMITTED FEATURE	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001, #008, #009	## MGD	## MGD	Pre-treatment and Land application	Industrial sludge
#002, #004-#007	0 MGD	0 MGD	None	Groundwater
#010-#085	0 MGD	0 MGD	Land application	Industrial sludge

FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last five years. Exceedances for arsenic, lead, nickel, and nitrates in groundwater monitoring wells were noted.

Facility History:
During an inspection in 1993, it was observed that the grit lagoons had no surface water and the sludge lagoons had varying degrees of surface water coverage and exhibited signs of potential leakage. These lagoons, constructed in the early 1960's were not lined and

were intended for final disposal of the grit and sludge from the treatment process. As a result, a Groundwater Monitoring Well and Sampling Plan was implemented in 1996.

PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY'S WATER QUALITY:

303(D) LIST:
Section 303(d) of the federal Clean Water Act requires each state identify waters not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock, and wildlife. The 303(d) list helps state and federal agencies keep track of impaired waters not addressed by normal water pollution control programs. http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm

- ✓ Applicable; The Missouri River is listed on the 2012 Missouri 303(d) List for *E. Coli*.
  - This no-discharge facility is not considered a source of the above listed pollutant(s) or considered to contribute to the impairment.

TOTAL MAXIMUM DAILY LOAD (TMDL):
A TMDL is a calculation of the maximum amount of a given pollutant a water body can absorb before its water quality is affected; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. http://dnr.mo.gov/env/wpp/tmdl/

- ✓ Applicable; The Missouri River is associated with the 2006 EPA approved TMDL for chlordane and PCB.
  - This no-discharge facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment.

UPSTREAM OR DOWNSTREAM IMPAIRMENTS:
The permit writer has reviewed upstream and downstream stream segments of this facility for impairments.

- ✓ The permit writer has noted upstream and downstream of the facility the stream is on the 303(d) list for *E. Coli* and has a TMDL for pollutant. Per 10 CSR 30-7.031(4)(E), this no-discharge facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:
Per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], waters of the state are divided into seven categories. This facility is subject to effluent limitations derived on a site specific basis which are presented in each outfall's effluent limitation table and further discussed in Part IV: Effluents Limits Determinations

- ✓ Missouri or Mississippi River
- ✓ Lake or Reservoir
- ✓ Subsurface Water
- ✓ All Other Waters

RECEIVING WATERBODY TABLE:

PERMITTED FEATURE	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	12-DIGIT HUC
#001, #002, #004-#009, #062	Missouri River	P	0226	AQL , DWS , GEN , HHP , IND , IRR , LWW , SCR , WBC B	10240011-0106
#010	Contrary Creek	(C)	0269	AQL , GEN , HHP , IRR , LWW , SCR , WBC B	
#018	100K Extent-Remaining Streams	C	3960	AQL, HHP, IRR, LWW, SCR, WBC(B)	
#017	Sugar Creek	C	0271	AQL , GEN , HHP , IRR , LWW , SCR , WBC B	10240011-0302
#068-#072, #074-#077	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	
#065-#067, #078, #078	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10240011- 0108

#011, #012, #014, #015, #063, #064, #074	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10240011- 0107
#080-#085	Mace Creek	C	0267	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10240011- 0102
#016	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10240011- 0301
#019, #038	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0705
#020, #023, #046	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0808
#021, #022, #024-#028, #030	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0807
#029	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0803
#031, #032, #035-#037	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0802
#033	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0801
#034	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0702
#039, #040, #047, #048, #052	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0704
#041	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0710
#042-#044	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0707
#045	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0703
#050, #054-#060	100K Extent-Remaining Lakes	C	7630	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0703
#061	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10240101- 0501
#049, #051, #053	100K Extent-Remaining Streams	C	3960	GEN, HHP, IRR, LWW, SCR, WBC-B, WWH (ALP)	10280101- 0706

n/a not applicable

Classes are hydrologic classes as defined in 10 CSR 20-7.031(1)(F). L1: Lakes with drinking water supply - wastewater discharges are not permitted to occur to L1 watersheds per 10 CSR 20-7.015(3)(C); L2: major reservoirs; L3: all other public and private lakes; P: permanent streams; C: streams which may cease flow in dry periods but maintain pools supporting aquatic life; E: streams which do not maintain surface flow; and W: wetland. Losing streams are defined in 10 CSR 20-7.031(1)(O) and are designated on the Losing Stream dataset or determined by the Department to lose 30% or more of flow to the subsurface.

WBID = Waterbody Identification: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 100K Extent-Remaining Streams or newer; data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip; New C streams described on the dataset per 10 CSR 20-7.031(2)(A)3. as 100K Extent Remaining Streams.

Per 10 CSR 20-7.031, the Department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses are to be maintained in the receiving streams in accordance with [10 CSR 20-7.031(1)(C)]. Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.: **ALP** = Aquatic Life Protection (formerly AQL; current uses are defined to ensure the protection and propagation of fish shellfish and wildlife, further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses ALP effluent limitations in 10 CSR 20-7.031 Table A1-A2 for all habitat designations unless otherwise specified.

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;

WBC-A = whole body contact recreation supporting swimming uses and has public access;

WBC-B = whole body contact recreation not supported in WBC-A;

SCR = Secondary Contact Recreation (like fishing, wading, and boating)

10 CSR 20-7.031(1)(C)3. to 7.:

HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish and drinking of water;

IRR = irrigation for use on crops utilized for human or livestock consumption

LWW = Livestock and Wildlife Watering (current narrative use is defined as LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply
IND = industrial water supply
10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Tables A1-B3 currently does not have corresponding habitat use criteria for these defined uses): WSA = storm- and flood-water storage and attenuation; WHP = habitat for resident and migratory wildlife species; WRC = recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = hydrologic cycle maintenance.
10 CSR 20-7.031(6): **GRW** = Groundwater

RECEIVING WATERBODY MONITORING REQUIREMENTS:
No receiving water monitoring requirements are recommended at this time.

PART III. RATIONALE AND DERIVATION OF PERMIT CONDITIONS

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

✓ Not applicable; the facility does not discharge to a losing stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTIBACKSLIDING:
Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(l)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

- The Groundwater Monitoring section of the previous permit was deleted. These were intended for maintenance and upkeep of the groundwater monitoring wells. These were addressed in the March 14, 2018 *Well Condition Assessment & Limited Hydrogeological Study.*
- The previous permit special conditions contained a specific set of prohibitions related to general criteria (GC) found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality criteria in the previous permit. This permit assesses each general criteria as listed in the previous permit's special conditions. Federal regulations 40 CFR 122.44(d)(1)(iii) requires instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4)(A) through (I) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality while maintaining permit conditions applicable to permittee disclosures and in accordance with 10 CSR 20-7.031(4) where no water contaminant by itself or in combination with other substances shall prevent the water of the state from meeting the following conditions:

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because discharges are not allowed from the facility.
- For all outfalls, there is no RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses because discharges are not allowed from the facility.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because discharges are not allowed from the facility
- For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because discharges are not allowed from the facility.
- For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because discharges are not allowed from the facility.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
- This facility is not allowed to discharge. The no-discharge requirement is protective of human health, animals, and aquatic life.

(E) There shall be no significant human health hazard from incidental contact with the water.
- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(F) There shall be no acute toxicity to livestock or wildlife watering.
- This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
- For all outfalls, there is no RP for physical, chemical or hydrologic changes impairing the natural biological community because discharges are not allowed from the facility.

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
- There are no solid waste disposal activities or any operation which has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

ANTIDEGRADATION REVIEW:
Process water discharges with new, altered, or expanding flows, the Department is to document, by means of antidegradation review, if the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm

✓ Not applicable; the facility has not submitted information proposing expanded or altered process water discharge; no further degradation proposed therefore no further review necessary.

This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which must include an alternative analysis (AA) of the BMPs. The SWPPP must be developed, implemented, updated, and maintained at the facility. Failure to implement and maintain the chosen alternative, is a permit violation. The AA is a structured evaluation of BMPs to determine which are reasonable and cost effective. Analysis should include practices designed to be 1) non-degrading, 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must demonstrate why "no discharge" or "no exposure" are not feasible alternatives at the facility. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address BMP failures or benchmark exceedances. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.015(9)(A)5 and 7.031(3). For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the AA performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

✓ Not applicable; the facility does not have stormwater discharges or the stormwater outfalls onsite have no industrial exposure.

BEST MANAGEMENT PRACTICES:
Minimum site-wide best management practices are established in this permit to assure all permittees are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies. While not all sites require a SWPPP because the SIC codes are specifically exempted in 40 CFR 122.26(b)(14), these best management practices are not specifically included for stormwater purposes. These practices are minimum requirements for all industrial sites to protect waters of the state. If the minimum best management practices are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state, therefore pollutants cannot be released unless in accordance with RSMo 644.011 and 644.016 (17).

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:
This special condition reiterates the federal rules found in 40 CFR 122.44(f) and 122.42(a)(1). In these rules, the facility is required to report changes in amounts of toxic substances discharged. Toxic substances are defined in 40 CFR 122.2 as "…any pollutant listed as toxic under section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing section 405(d) of the CWA." Section 307 of the clean water act then refers to those parameters found in 40 CFR 401.15. The permittee should also consider any other toxic pollutant in the discharge as reportable under this condition.

COMPLIANCE AND ENFORCEMENT:
Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

✓ Not applicable; the permittee/facility is not currently under Water Protection Program enforcement action.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:
Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, animal waste, process waste, and other similar waste.
✓ Not applicable; this facility discharges domestic wastewater to an off-site permitted wastewater treatment facility (POTW).

Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.
Additional information: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 (WQ422 through WQ449).
✓ Not applicable; the facility does not manage domestic wastewater on-site.

EFFLUENT LIMITATION GUIDELINE:
Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.
✓ The facility does not have an associated ELG.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:
The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is not transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

To assist the facility in entering data into the eDMR system, the permit describes limit sets in each table in Part A of the permit. The data entry personnel should use these identifiers to assure data entry is being completed appropriately.
✓ The permittee/facility is currently using the eDMR data reporting system.

GENERAL CRITERIA CONSIDERATIONS:
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, §644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state it shall be unlawful for any person to cause or allow any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.
✓ Not applicable; this permit does not contain effluent limitations based on the narrative criteria.

GROUNDWATER MONITORING:
Groundwater is a water of the state according to 10 CSR 20-2.010(82), and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ This facility is monitoring the groundwater at the site. A groundwater monitoring program was implemented in 1996 to monitor for leakage from the unlined grit and sludge storage lagoons.

LAND APPLICATION RATES:
In accordance with 10 CSR 20-8.020(15), wastewater and sludge must be land applied at either hydraulic loading rates, nitrogen loading rates, or trace elements loading rates.

Conversion Factors for laboratory testing results: [mg/L or mg/kg or ppm] x [conversion factor] = [pounds per Unit Volume]

Unit Volume	Conversion Factors
lbs./acre inch	0.226
lbs./1,000 gallons	0.0083
lbs./100 cubic feet	0.0062
lbs/ton (wet weight)	0.002

✓ Applicable; Nitrogen Loading Rates – this considers overall nutrient management of the land application system. The fertilizer recommendation is the amount of nutrients required for a crop to produce the expected yield. The agronomic rate is the amount of sludge applied to a field to supply the amount of nutrients to meet the fertilizer recommendation. For more information on nutrient management, PAN calculations, and land application best management practices, consult the following University of Missouri Extension Guides:

WQ421 State and EPA Regulations for Domestic Wastewater Sludge and Biosolids
WQ422 Land Application of Septage
WQ423 Monitoring Requirements for Biosolids Land Application
WQ424 Biosolids Standards for Pathogens and Vectors
WQ425 Biosolids Standards for Metals and Other Trace Substances
WQ426 Best Management Practices for Biosolids Land Application
WQ427 Benefits and Risks of Biosolids
WQ428 Activity and Movement of Plant Nutrients and Other Trace Substances
WQ429 Interpretation of Laboratory Analysis of Biosolids Samples
WQ430 Crop/Nutrient Considerations of Biosolids
WQ431 Collection and Storage of Biosolids
WQ432 Equipment for Off-site Application of Biosolids
WQ433 Equipment for On-site Land Application of Biosolids
WQ434 Operating Considerations for Biosolids Equipment
WQ449 Biosolids Glossary of Terms

Nitrogen based applications are when the amount of sludge applied is based on the nitrogen fertilizer recommendation for the planned crop. Phosphorous based applications are when the amount of sludge applied is based on the phosphorous fertilizer recommendation for the planned crop.

Fertilizer recommendations can also be obtained by using one of the following tools:
The University of Missouri Extension online fertilizer recommendation calculator at http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx.

The Missouri P-Index is a tool to evaluate the potential for phosphorus loss from land application fields. It uses information such as soil test phosphorus result, cropping practices, RUSLE, land cover, and distance to water to calculate a rating for the risk phosphorus transport from the field. The P-index is available at http://nmplanner.missouri.edu/tools/pindex.asp0.

The Missouri Soil Testing Association provides a list of accredited labs at http://soilplantlab.missouri.edu/soil/msta.aspx.

MAJOR WATER USER:
Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/pubs/pub2337.htm
✓ Not applicable; this permittee cannot withdraw water from the state in excess of 70 gpm/0.1 MGD.

NO-DISCHARGE LAND APPLICATION:
Land application of wastewater or sludge shall comply with the all applicable no-discharge requirements listed in 10 CSR 20-6.015 and all facility operations and maintenance requirements listed in 10 CSR 20-8.020(15). These requirements ensure appropriate operation of the no-discharge land application systems and prevent unauthorized and illicit discharges to waters of the state. Land

applications by a contract hauler on fields that the permittee has a spreading agreement on are not required to be in this permit. A spreading agreement does not constitute the field being rented or leased by the permittee as they do not have any control over management of the field.

✓ Applicable; This permit authorizes operation of a no-discharge land application system to treat sludge.

OIL/WATER SEPARATORS:

Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits or may be regulated as a petroleum tank.

✓ Not applicable; the permittee has not disclosed the use of any oil water separators at this permitted facility and therefore oil water separator tanks are not authorized by this permit.

REASONABLE POTENTIAL (RP):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants which are (or may be) discharged at a level causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times; however, acute toxicity criteria may be exceeded by permit in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit in mixing zones. If the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for the pollutant per 40 CFR Part 122.44(d)(1)(iii) and the most stringent limits per 10 CSR 20-7.031(9)(A). Permit writers may use mathematical reasonable potential analysis (RPA) using the Technical Support Document for Water Quality Based Toxics Control (TSD) methods (EPA/505/2-90-001) as found in Section 3.3.2, or may also use reasonable potential determinations (RPD) as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD.

✓ Not applicable; a mathematical RPA was not conducted for this facility.

SAMPLING FREQUENCY JUSTIFICATION:

Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Minimum sampling frequency for all parameters is annually per 40 CFR 122.44(i)(2).

SAMPLING TYPE JUSTIFICATION:

Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. SOCs are allowed under 40 CFR 122.47 providing certain conditions are met. A SOC is not allowed:

✓ Not applicable; this permit does not contain a SOC.

SPILL REPORTING:

Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. http://dnr.mo.gov/env/esp/spillbill.htm

SLUDGE – INDUSTRIAL:

Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

✓ Applicable; this permit authorizes land application of industrial sludge in accordance with Part A and Special Conditions of this permit; see additional information below in Part V.

STANDARD CONDITIONS:

The standard conditions Part I attached to this permit incorporate all sections of 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the permittee

to ascertain compliance with this permit, state regulations, state statues, federal regulations, and the Clean Water Act. Standard Conditions Part III, if attached to this permit, incorporate all requirements dealing with domestic sludges.

STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:
Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater-only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement as dictated by site specific conditions, the BMPs in place, past performance of the facility, and the receiving water's current quality.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute Water Quality Standards (WQSs) are based on one hour of exposure, and must be protected at all times. Therefore, industrial stormwater facilities with toxic contaminants present in the stormwater may have the potential to cause a violation of acute WQSs if toxic contaminants occur in sufficient amounts. In this instance, the permit writer may apply daily maximum limitations.

Conversely, it is unlikely for rainfall to cause a discharge for four continuous days from a facility; if this does occur however, the receiving stream will also likely sustain a significant amount of flow providing dilution. Most chronic WQSs are based on a four-day exposure with some exceptions. Under this scenario, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

A standard mass-balance equation cannot be calculated for stormwater because stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day or storm event. The amount of stormwater discharged from the facility will vary based on current and previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, area of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability may increase the stream flow dramatically over a short period of time (flash).

Numeric benchmark values are based on site specific requirements taking in to account a number of factors but cannot be applied to any process water discharges. First, the technology in place at the site to control pollutant discharges in stormwater is evaluated. The permit writer also evaluates other similar permits for similar activities. A review of the guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP) may also occur. Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard may also be used. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States. If a facility has not disclosed BMPs applicable to the pollutants for the site, the permittee may not be eligible for benchmarks.

40 CFR 122.44(b)(1) requires the permit implement the most stringent limitations for each discharge, including industrially exposed stormwater; and 40 CFR 122.44(d)(1)(i) and (iii) requires the permit to include water-quality based effluent limitations where reasonable potential has been found. However, because of the non-continuous nature of stormwater discharges, staff are unable to perform statistical Reasonable Potential Analysis (RPA) under most stormwater discharge scenarios. Reasonable potential determinations (RPDs; see REASONABLE POTENTIAL above) using best professional judgment are performed.

Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the conditions of the permit.

BMP inspections typically occur more frequently than sampling. Sampling frequencies are based on the facility's ability to comply with the benchmarks and the requirements of the permit. Inspections should occur after large rain events and any other time an issue is noted; sampling after a benchmark exceedance may need to occur to show the corrective active taken was meaningful.

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.

- ✓ Not applicable; this facility's SIC code does not require stormwater monitoring per 40 CFR 122.26(b)(14).

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf, BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to 1) identify sources of pollution or contamination, and 2) select and carry out actions which prevent or control the pollution of storm water discharges. Additional information can be found in *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006; September 1992).

A SWPPP must be prepared by the permittee if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The AA evaluation should include practices designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

If parameter-specific numeric benchmark exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification, which includes an appropriate fee; the application is found at: https://dnr.mo.gov/forms/#WaterPollution

✓ Not applicable; this facility's SIC code does not require stormwater monitoring per 40 CFR 122.26(b)(14).

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:
Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the Department. Tables A1-B3 at 10 CSR 20-7.031 shows water quality standards.

UNDERGROUND INJECTION CONTROL (UIC):
The UIC program for all classes of wells in the State of Missouri is administered by the Missouri Department of Natural Resources and approved by EPA pursuant to section 1422 and 1425 of the Safe Drinking Water Act (SDWA) and 40 CFR 147 Subpart AA. Injection wells are classified based on the liquids which are being injected. Class I wells are hazardous waste wells which are banned by RSMo 577.155; Class II wells are established for oil and natural gas production; Class III wells are used to inject fluids to extract minerals; Class IV wells are also banned by Missouri in RSMo 577.155; Class V wells are shallow injection wells; some examples are heat pump wells and groundwater remediation wells. Domestic wastewater being disposed of sub-surface is also considered a Class V well. In accordance with 40 CFR 144.82, construction, operation, maintenance, conversion, plugging, or closure of injection wells shall not cause movement of fluids containing any contaminant into Underground Sources of Drinking Water (USDW) if the presence of any contaminant may cause a violation of drinking water standards or groundwater standards under 10 CSR 20-7.031, or other health based standards, or may otherwise adversely affect human health. If the director finds the injection activity may endanger USDWs, the Department may require closure of the injection wells, or other actions listed in 40 CFR 144.12(c), (d), or (e). In accordance with 40 CFR 144.26, the permittee shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. The Class V Well Inventory Form can be requested from the Geological Survey Program or can be found at the following web address: http://dnr.mo.gov/forms/780-1774-f.pdf

- ✓ Not applicable; the permittee has not submitted materials indicating the facility will be performing UI at this site.

VARIANCE:
Per the Missouri Clean Water Law §644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

- ✓ Not applicable; this permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A).

- ✓ Not applicable; wasteload allocations were not calculated.

WASTELOAD ALLOCATION (WLA) MODELING:
Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

- ✓ Not applicable; a WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARD REVISION:
In accordance with section 644.058, RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.

- ✓ This operating permit does not contain requirements for a permit limit based on a water quality standard which has changed twenty-five percent or more since the previous operating permit.

Part IV PERMIT LIMITS & MONITORING DETERMINATION

Effluent limitations derived and established for this permit are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

PERMITTED FEATURE #001, #008- #009 – Storage Basins/Concrete Digesters
Limitations derived and established in the below Storage Basin Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

STORAGE BASIN LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
STORAGE BASIN (#008-#009 ONLY)						
FREEBOARD	Feet	*	same	once/month	once/month	measured
RAINFALL	Inches	*	same	daily	once/month	measured
INDUSTRIAL SLUDGE						
pH	SU	*	same	once/year	once/year	grab
Total Kjeldahl Nitrogen as N	mg/kg	*	same	once/year	once/year	grab
Nitrate Nitrogen as N	mg/kg	*	same	once/year	once/year	grab
Ammonia as N	mg/kg	*	same	once/year	once/year	grab
Total Phosphorus as P	mg/kg	*	same	once/year	once/year	grab
Percent Solids	mg/kg	*	same	once/year	once/year	grab
Arsenic (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab
Cadmium (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab
Chromium (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab
Chromium III	µg/L	*	same	once/year	once/year	grab
Chromium VI	µg/L	*	same	once/year	once/year	grab
Iron (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab
Lead (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab
Mercury (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab
Nickel (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab
Selenium (Total Recoverable)	mg/kg	*	same	once/year	once/year	grab

* - Monitoring requirement only

PERMITTED FEATURE #001, #008-#009 – DERIVATION AND DISCUSSION OF LIMITS:

STORAGE BASIN:

Freeboard
Monitoring requirement to verify adequate freeboard is maintained, so as to avoid an overflow of the storage basin.

Rainfall
Monitoring requirement to verify adequate freeboard is maintained, so as to avoid an overflow of the storage basin. Additionally, precipitation monitoring allows the permittee to operate the land application activity to prevent over application during saturated conditions that may result in a discharge.

SLUDGE:

- **pH.** Monitoring requirement only. Monitoring for pH is included to determine nutrient loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]
- **Total Kjeldahl Nitrogen as N.** Monitoring requirement only. Monitoring for Total Kjeldahl Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Nitrate Nitrogen as N.** Monitoring requirement only. Monitoring for Nitrate Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Ammonia as N.** Monitoring requirement only. Monitoring for Ammonia as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Total Phosphorus as P.** Monitoring requirement only. Monitoring for Total Phosphorus as P is included to determine nutrient loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Arsenic (Total Recoverable).** Monitoring requirement only. Monitoring for Arsenic is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Cadmium (Total Recoverable).** Monitoring requirement only. Monitoring for Cadmium is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Chromium III.** Monitoring requirement only. Monitoring for Chromium III is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Chromium VI.** Monitoring requirement only. Monitoring for Chromium VI is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Copper (Total Recoverable).** Monitoring requirement only. Monitoring for Copper is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Lead (Total Recoverable).** Monitoring requirement only. Monitoring for Lead is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Mercury (Total Recoverable).** Monitoring requirement only. Monitoring for Mercury is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Nickel (Total Recoverable).** Monitoring requirement only. Monitoring for Nickle is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Selenium (Total Recoverable).** Monitoring requirement only. Monitoring for Selnium is included to determine pollutant loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

- **Available Phosphorus as P (Total Recoverable).** Monitoring requirement only. Monitoring for Available Phosphorus as P is included to determine nutrient loading rates on the land application fields. [10 CSR 20-20-6.015(4)(A)1.]

PERMITTED FEATURES #002, #004 - #007– GROUNDWATER MONITORING

Limitations derived and established in the below Groundwater Monitoring Table are based on Water Quality Standards. Monitoring is required for sludge and grit storage and determining the integrity of the lagoons. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

PARAMETERS	UNIT	DAILY MAX	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
GROUNDWATER						
Groundwater Depth	feet	*	same	once/quarter	once/quarter	measured
Nitrate Nitrogen as N	mg/L	10	same	once/quarter	once/quarter	measured
Fecal Coliform	#/100mL	*		once/quarter	once/quarter	grab
pH	SU	**	same	once/quarter	once/quarter	grab
Aluminum (Total Recoverable)	µg/L	*	same	once/quarter	once/quarter	grab
Arsenic (Total Recoverable)	µg/L	50	same	once/quarter	once/quarter	grab
Beryllium (Total Recoverable)	µg/L	4	same	once/quarter	once/quarter	grab
Boron (Total Recoverable)	µg/L	2000	same	once/quarter	once/quarter	grab
Cadmium (Total Recoverable)	µg/L	5	same	once/quarter	once/quarter	grab
Chromium III	µg/L	100	same	once/quarter	once/quarter	grab

Chromium VI	µg/L	*	same	once/quarter	once/quarter	grab
Copper (Total Recoverable)	µg/L	1300	same	once/quarter	once/quarter	grab
Iron (Total Recoverable)	µg/L	*	same	once/quarter	once/quarter	grab
Lead (Total Recoverable)	µg/L	15	same	once/quarter	once/quarter	grab
Mercury (Total Recoverable)	µg/L	2	same	once/quarter	once/quarter	grab
Nickel (Total Recoverable)	µg/L	100	same	once/quarter	once/quarter	grab
Selenium (Total Recoverable)	µg/L	50	same	once/quarter	once/quarter	grab
Zinc (Total Recoverable)	µg/L	5000	same	once/quarter	once/quarter	grab
Methylene Chloride	µg/L	4.7	same	once/quarter	once/quarter	grab
2, 4-Dichlorophenol	µg/L	93	same	once/quarter	once/quarter	grab
Phenol	µg/L	300	same	once/quarter	once/quarter	grab
Toluene	µg/L	1000	same	once/quarter	once/quarter	grab

PERMITTED FEATURES #002, #004 - #007– DERIVATION AND DISCUSSION OF LIMITS:

- **Groundwater Depth.** – Monitoring requirement only.

- **Nitrate Nitrogen as N.** –The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of Nitrate Nitrogen as N of 10 mg/L. Effluent limitations from the previous state operating permit have been retained, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Fecal Coliform.** – State Water Quality Standards do not include effluent limitations for fecal coliform for groundwater. The parameter of fecal coliform has been retained as monitoring only requirement as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **pH.** – 6.5-9.0 SU. pH is addressed in two main sections of the Missouri Clean Water Law that influence permit parameters. In accordance with 10 CSR 20-7.015(8)(A)2., pH shall be maintained in the range of 6.0-9.0 standard pH units. In accordance with 10 CSR 20-7.031(5)(E), water contaminants shall not cause pH to be outside of the range of 6.5 -9.0 standard pH units. However, 40 CFR 122.44(b)(1) and 40 CFR 122.44(d) require that the permit contain the most stringent requirement for a parameter. Therefore, the facility shall be required to maintain a range of 6.5-9.0 standard pH units.

- **Aluminum (Total Recoverable).** - State Water Quality Standards do not include effluent limitations for aluminum for groundwater. The parameter of aluminum has been retained as monitoring only requirement as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Arsenic (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of Arsenic of 50 µg /L. Effluent limitations from the previous state operating permit have been retained. Please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Beryllium (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of Beryllium of 4 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Boron (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of Boron of 2000 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Cadmium (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of Cadmium of 5 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Chromium III.** – The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of Chromium III of 100 µg /L. Effluent limitations from the previous state operating permit have

been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Chromium IV.** – State Water Quality Standards do not include effluent limitations for chromium IV for groundwater. The parameter of chromium IV has been retained as monitoring only requirement as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Copper (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of copper of 1300 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Iron (Total Recoverable).** –USGS studies show naturally occurring high concentrations of iron in the groundwater in Missouri River alluvium that exceed State Water Quality Standards in 10 CSR 20-7.031 Table A1, of 300 µg /L for protection of groundwater. The parameter of iron has been retained as monitoring only requirement as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Lead (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of lead of 15 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Mercury (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of mercury of 2 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Nickel (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of nickel of 100 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Selenium (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the selenium of copper of 50 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Zinc (Total Recoverable).** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of zinc of 5000 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Methylene Chloride.** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of methylene chloride of 4.7 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **2, 4-Dichlorophenol.** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of 2, 4-dichlorophenol of 93 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Phenol.** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of phenol of 300 µg /L. Effluent limitations from the previous state operating permit have been retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Toluene.** - The State Water Quality Standards in 10 CSR 20-7.031 Table A1, require an effluent limitation for protection of groundwater for the parameter of toluene of 1000 µg /L. Effluent limitations from the previous state operating permit have been

retained as an indicator to the structural integrity of the lagoons, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

PERMITTED FEATURE #010-#085 – Land Application Fields
Limitations derived and established in the below Land Application Field Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

STORAGE BASIN LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
INDUSTRIAL SLUDGE APPLICATION						
APPLICATION AREA	Acres	*	same	once/day	once/year	measured
APPLICATION RATE	Pounds/Acre	*	same	once/day	once/year	measured
SOIL MONITORING						
NITRATE NITROGEN AS N	mg/kg	*	same	once/permit	once/permit	composite
PH (SALT)	mg/kg	*	same	once/permit	once/permit	composite
PHOSPHOROUS (BRAY P1)	mg/kg	*	same	once/permit	once/permit	composite

* - Monitoring requirement only

PERMITTED FEATURE #010-#085 – DERIVATION AND DISCUSSION OF LIMITS:

INDUSTRIAL SLUDGE APPLICATION:

Application Area
Monitoring requirement only. Monitoring the area will allow the permittee to ensure compliance with 10 CSR 20-6.015(4)(A)1., and are prevent unauthorized discharges.

Application Rate
Monitoring requirement only. Monitoring the area will allow the permittee to ensure compliance with 10 CSR 20-6.015(4)(A)1., and are prevent unauthorized discharges.

SOIL MONITORING:

pH
Monitoring requirement only. In accordance with 10 CSR 20-20-6.015(4)(A)1 monitoring for pH is included to ensure that soil pH is in the optimal range for plant growth and nutrient.

Nitrate Nitrogen as N
Monitoring requirement only. Wastewater and sludge contain variable concentrations of nutrients. In accordance with 10 CSR 20-20-6.015(4)(A)1 monitoring for nitrate nitrogen as N will ensure that the nutrients applied are being properly utilized.

Phosphorous, Bray P1
Monitoring requirement only. Wastewater and sludge contain variable concentrations of nutrients. In accordance with 10 CSR 20-20-6.015(4)(A)1 monitoring for phosphorous will ensure that the nutrients applied are being properly utilized.

UNAUTHORIZED DISCHARGES TABLE - All Permitted Features and Land Application Areas
The following is required for an unauthorized discharge. Monitoring requirement only based on best professional judgment.

PARAMETER	UNIT	DAILY MAXIMUM	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE	PREVIOUS PERMIT LIMITATIONS
Flow	MGD	*	once/day while discharging	28th day of the month after the cessation of the discharge	GRAB	*
Biochemical Oxygen Demand$_5$	mg/L	*	once/day while discharging	28th day of the month after the cessation of the discharge	GRAB	*
Total Suspended Solids	mg/L	*	once/day while discharging	28th day of the month after the cessation of the discharge	GRAB	*
Ammonia as N	mg/L	*	once/day while discharging	28th day of the month after the cessation of the discharge	GRAB	*
pH	SU	*	once/day while discharging	28th day of the month after the cessation of the discharge	GRAB	*
Oil & Grease	mg/L	*	once/day while discharging	28th day of the month after the cessation of the discharge	GRAB	*

* - Monitoring requirement only
** - # of colonies/100mL; the Monthly Average for E. coli is a geometric mean.
*** - Parameter not established in previous state operating permit.

DERIVATION AND DISCUSSION OF LIMITS:

Flow
Monitoring requirement only.

Biochemical Oxygen Demand - 5 Day (BOD_5)
Monitoring requirement only.

Total Suspended Solids
Monitoring requirement only.

Ammonia as N
Monitoring requirement only.

pH
Monitoring requirement only.

Oil & Grease
Monitoring requirement only.

PART V. ADMINISTRATIVE REQUIREMENTS

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than two years old, such data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

- ✓ This permit will maintain synchronization by expiring the end of the second quarter, 2023.

PUBLIC NOTICE:

The Department shall give public notice a draft permit has been prepared and its issuance is pending. http://dnr.mo.gov/env/wpp/permits/pn/index.html Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- ✓ The Public Notice period for this operating permit was from October 18, 2019 to November 18, 2019. No responses were received.

DATE OF FACT SHEET: NOVEMBER 22, 2019

COMPLETED BY:

GREG CALDWELL, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 526-1426
greg.caldwell@dnr.mo.gov

RECEIVED
JAN 3 2013
Water Protection Program
AP 29097

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED: 1-3-18	FEE SUBMITTED: 0

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

- ☐ An operating permit for a new or unpermitted facility:
  Please indicate the original Construction Permit # _____
- ☑ An operating permit renewal:
  Please indicate the permit # MO- 0118117 Expiration Date 6/30/17
- ☐ An operating permit modification:
  Please indicate the permit # MO-_____ Modification Reason: _____

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

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE / FAX	
South St. Joseph Industrial Sewer District		(816) 238-3959 /	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
1409 Lower Lake Road	St. Joseph	MO	64504

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
South St. Joseph Industrial Sewer District	ssjisd@stjoewireless.com	(816) 238-3959 /	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
PO Box 4401	St. Joseph	MO	64504

3.1 Request review of draft permit prior to public notice? ■ YES ☐ NO

4. CONTINUING AUTHORITY

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
South St. Joseph Industrial Sewer District	ssjisd@stjoewireless.com	(816) 238-3959 /	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
PO Box 4401	St. Joseph	MO	64504

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE / FAX	
Chad Coleman	10578	(816) 238-3959 /	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
PO Box 4401	St. Joseph	MO	64504

6. FACILITY CONTACT

NAME	TITLE / E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX
Chad Coleman	General Manager / ssjisd@stjoewireless.com	(816) 238-3959 /

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.) See page 2-12 of current permit (attached)

001 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 – SIC 4952 and NAICS _____ 002 – SIC 2879 and NAICS _____
003 – SIC 2047 and NAICS _____ 004 – SIC 2075 and NAICS _____

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION
(Complete all forms that are applicable.)

A.	Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C or 2F. (2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.)	YES ☑	NO ☐
B.	Is application for storm water discharges only? If yes, complete Form C or 2F.	YES ☐	NO ☑
C.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C or 2F and D.	YES ☐	NO ☑
D.	Is wastewater land applied? If yes, complete Form I.	YES ☐	NO ☑
E.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES ☑	NO ☐

F. If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.

F. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

9. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit http://dnr.mo.gov/env/wpp/edmr.htm to access the Facility Participation Package.

☑ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☐ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

10. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions. (PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME			
Kansas City Power and Light			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
520 Francis Street	St. Joseph	MO	64504

11. I certify that I am familiar with the information contained in the application, that 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 the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Chad Coleman/General Manager	(816) 238-3959
SIGNATURE	**DATE SIGNED**
Chad Coleman	12/28/17

MO 780-1479 (09-16)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- ☑ Appropriate Fees? Permit Renewal-No Fee Due
- ☑ Map at 1" = 2000' scale?
- ☑ Signature?
- ☑ Form C or 2F, if applicable?
- ☐ Form D, if applicable?
- ☐ Form I (Irrigation), if applicable?
- ☑ Form R (Sludge), if applicable?
- ☐ Revised Nutrient Management Plan, if applicable?

INSTRUCTIONS FOR COMPLETING FORM A - APPLICATION FOR NONDOMESTIC PERMIT

1. Check which option is applicable. **Do not check more than one item.** Nondomestic permit refers to permits issued by the Department of Natural Resources' Water Protection Program for all **nondomestic** wastewater treatment facilities, including all industry, stormwater, and Class IA Concentrated Animal Feeding Operations (CAFO). **This includes all nondomestic wastewater treatment facilities that incorporate domestic wastewater into the operating permit.**

1.1 OPERATING PERMIT FEES

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department.

Discharges covered by section 644.052.4 RSMo. (Primary or Categorical Facilities)

$3,500 for a design flow under 1 mgd

$5,000 for a design flow of 1 mgd or more

A. Discharges covered by section 644.052.5 RSMo. (Secondary or Noncategorical Facilities).

$1,500 for a design flow under 1 million gallons per day (mpg)

$2,500 for a design flow of 1 mgd or more

SITE-SPECIFIC STORMWATER DISCHARGE FEES

A. $1,350 for a design flow under 1 mgd

B. $2,350 for a design flow of 1 mgd or more

CAFO OPERATING PERMIT FEES

A. $5,000 for site-specific permit (Class IA)

OPERATING PERMIT MODIFICATIONS are subject to the following fees:

A. Major Modifications - 25 percent of annual fee.

B. Minor Modifications (in accordance with 40 CFR 122.63, including transfers) - $100

Note: Facility name and address changes where owner, operator and continuing authority remain the same are not considered transfers.

Incomplete permit applications and/or related engineering documents will be returned by the department if they are not completed in the time frame established in a comment letter from the department to the owner. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.

2. Facility - Provide the name by which this facility is known locally. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Also include the street address or location of the facility. If the facility lacks a street name or route number, give the names of the closest intersection, highway, county road, etc.

3. Owner - Provide the legal name and address of owner.

3.1 Prior to submitting a permit to public notice, the department shall provide the permit applicant 15 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check YES to review the draft permit prior to public notice. Check NO to waive the process and expedite the permit.

4. Continuing Authority - Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf or contact the appropriate Department of Natural Resources regional office.

5. Operator - Provide the name, certificate number and telephone number of the person operating the facility.

6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.

7.1 An outfall is the point at which wastewater is discharged. Outfalls should be given in terms of the legal description of the facility. Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, please use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

7.2 List only your primary Standard Industrial Classification, or SIC, and North American Industry Classification System code for each outfall. The SIC system was devised by the U.S. Office of Management and Budget to cover all economic activities. To find the correct SIC code, an applicant may check his or her unemployment insurance forms or contact the Missouri Division of Employment Security, 573-751-3215. The primary SIC code is that of the operation that generates the most revenue. If this information is not available, the number of employees or, secondly, production rate may be used to determine your SIC code. Additional information for Standard Industrial Codes can be found at www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System at www.census.gov/naics or contact the appropriate Department of Natural Resources regional office.

8. If you answer yes to A, B, C, D, or E, then you must complete and file the supplementary form(s) indicated. A U.S. Geological Survey 1" = 2,000' scale map must be submitted with the permit application showing all outfalls, the receiving stream and the location of the downstream property owners. This type of map is available at www.dnr.mo.gov/internetmapviewer/ or from the Missouri Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.

INSTRUCTIONS FOR COMPLETING FORM A - APPLICATION FOR NONDOMESTIC PERMIT (CONTINUED)

9. Electronic Discharge Monitoring Report (eDMR) Submission System – Visit the eDMR site at http://dnr.mo.gov/env/wpp/edmr.htm and click on the "Facility Participation Package" link. The eDMR Permit Holder and Certifier Registration Form and information about the eDMR system can be found in the Facility Participation Package.

   Waivers to electronic reporting may be granted by the department per 40 CFR 127.15 under certain, special circumstances. A written request must be submitted to the Department for approval. Waivers may be granted to facilities owned or operated by:
   A. members of religious communities that choose not to use certain technologies or
   B. permittees located in areas with limited broadband access. The National Telecommunications and Information Administration (NTIA) in collaboration with the Federal Communications Commission (FCC) have created a broadband internet availability map: http://www.broadbandmap.gov/. Please contact the department if you need assistance.

10. Please provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. Also, please indicate the location on the map. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way. For no discharge facilities, provide this information for the location where discharge would flow if there was one. For land application sites, include the owners of the land application sites and all adjacent landowners.

11. Signature - All applications must be signed as follows and the signature must be **original**:
   A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
   B. For a partnership or sole proprietorship, by a general partner or the proprietor.
   C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

This completed form, along with the applicable permit fees, should be submitted to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176. Submittal of an incomplete application may result in the application being returned. A map of the department's regional offices with addresses and phone numbers can be viewed at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, contact the appropriate regional office or the Department of Natural Resources' Water Protection Program, Operating Permits Section at 800-361-4827 or 573-751-6825.

For More Information
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-1300
www.dnr.mo.gov/env/wpp/index.html

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

eDMR PERMIT HOLDER AND CERTIFIER REGISTRATION

Complete this form to register a permit holder for electronic reporting. This form should also be used to identify or change authorized representatives assigned an electronic signature for the department's eDMR system.

PART A. PERMIT HOLDER INFORMATION

PERMIT NUMBER	FACILITY NAME		
MO- 0118117	South St. Joseph Industrial Sewer District		
ADDRESS	CITY	STATE	ZIP CODE
1409 Lower Lake Road	St. Joseph	MO	64504

PERMIT HOLDER ACCOUNT ACTION

☑ New Application ☐ Revised Permit Holder or Account Information ☐ Request for Reactivation

PART B. USER ACCOUNT INFORMATION

USER ACCOUNT ACTION	ACCOUNT TYPE		
☑ Add ☐ Update ☐ Delete	☐ Viewer ☐ Preparer ☑ Certifier		
LAST NAME	FIRST NAME		MIDDLE INITIAL
Coleman	Chad		A
JOB TITLE	EMPLOYER'S NAME		
General Manager	South St. Joseph Industrial Sewer District		
EMAIL	TELEPHONE NUMBER WITH AREA CODE		
ssjisd@stjoewireless.com	8162383959		
ADDRESS	CITY	STATE	ZIP CODE
1409 Lower Lake Road	St. Joseph	MO	64504

USER ACCOUNT ACTION	ACCOUNT TYPE		
☑ Add ☐ Update ☐ Delete	☐ Viewer ☑ Preparer ☐ Certifier		
LAST NAME	FIRST NAME		MIDDLE INITIAL
Eidson	Tiffany		E
JOB TITLE	EMPLOYER'S NAME		
Laboratory Technician	South St. Joseph Industrial Sewer District		
EMAIL	TELEPHONE NUMBER WITH AREA CODE		
ssjisdlab@gmail.com	8162383959		
ADDRESS	CITY	STATE	ZIP CODE
1409 Lower Lake Road	St. Joseph	MO	64504

USER ACCOUNT ACTION	ACCOUNT TYPE		
☐ Add ☐ Update ☐ Delete	☐ Viewer ☐ Preparer ☐ Certifier		
LAST NAME	FIRST NAME		MIDDLE INITIAL
JOB TITLE	EMPLOYER'S NAME		
EMAIL	TELEPHONE NUMBER WITH AREA CODE		
ADDRESS	CITY	STATE	ZIP CODE

PART C. PERMIT HOLDER REGISTRATION

I request the above identified permit holder be registered for electronic reporting and request any department initiated minor permit revisions (where no fee is required) that may be necessary to allow use of the department's eDMR system. As the permit holder, I agree the authorized representatives will follow permit requirements and the procedures for the electronic submission of DMR forms, as described in the permit holder participation package.

Please establish or revise the above user accounts in accordance with the information provided for each identified account. The person(s) identified as certifier(s) are hereby designated as the authorized representatives for all reporting purposes. I understand each person to receive a certifier account on the eDMR system must complete Part D and must sign in the presence of a Notary Public.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PERMIT HOLDER NAME (TYPE OR PRINT)	PERMIT HOLDER SIGNATURE	DATE
Chad Coleman	Chad Coleman	12/28/2017

OFFICIAL TITLE (TYPE OR PRINT)
General Manager

PART D. CERTIFIER REGISTRATION

The permit holder and certifier intend to have the submission of eDMRs be the functional equivalent of the paper submissions required by a permit issued in accordance with the Missouri Clean Water Law, Chapter 644, RSMo and/or the Clean Water Act, 33 U.S.C. § 1251, *et seq.* The certifier will use a validly issued PIN as a signature when submitting eDMRs. The permit holder and certifier agree not to contest the validity of eDMRs submitted under an authorized PIN based on the fact such submissions were completed electronically. The permit holder and certifier further agree the provisions of the Uniform Electronic Transactions Act, Sections 432.200 through 432.295, RSMo, shall apply, except as otherwise stated herein or within the permit holder participation package.

The permit holder and certifier agree:

1. Any eDMR submitted under the PIN specific to the certifier shall be considered a "writing" or "in writing;" and any such records shall be deemed for all purposes:
    a. To have been "signed" by the certifier.
    b. To constitute an "original" when printed from electronic files or records.
2. Electronic DMRs constitute admissible evidence in any judicial or administrative proceeding.

An electronically submitted DMR will not satisfy a reporting requirement until it has been received and accepted by the department. If an electronically submitted DMR is rejected, the permit holder shall take the necessary steps to properly resubmit such DMR within 24 hours of the notice of rejection.

By signing below, the permit holder and certifier agree with the terms and conditions of Part D.

Certifier (must sign in the presence of Notary)

12/28/2017
Date

Christina R. King
Notary Public 1*

12-28-17
Date

NOTARY PUBLIC
NOTARY SEAL
STATE OF MISSOURI

CHRISTINA R. KING
My Commission Expires
January 7, 2019
Buchanan County
Commission # 15989666

Permit Holder (must sign in presence of Notary)

Date

Notary Public 2*

Date

* Notary public 1 is for use if both the permit holder and the certifier both sign in the presence of the same notary; however, if the notary so desires they may sign and stamp both locations.
If the certifier and the permit holder do not sign at the same time, then notary 1 is specific to the certifier and notary 2 is specific to the permit holder.
In cases when the certifier and the permit holder are not in the same location, the certifier must complete the application to the best of their ability (including signature and notary public 1) and send the document to the permit holder to be completed (including signature and notary public 2).

INSTRUCTIONS FOR COMPLETING FORM 780-2204, eDMR PERMIT HOLDER AND CERTIFIER REGISTRATION

Part A: Permit Holder Information

Provide the permit number, the facility name listed on the permit, physical address of the facility, and action to be taken (new application, revised information or reactivation).

Part B: User Account Information

Provide up to three different users. If additional users are needed, please attach a second page with the requested information. Please indicate the user account action to be taken (add, update or delete), the account type (viewer, preparer, or certifier), user name, job title, employer's name, email address, telephone number, and mailing address for each user.

The viewer can view and obtain reports, check status of submitted eDMRs, and view submitted data. The preparer can do all that the viewer can do in addition to having the ability to fill out and save eDMR forms. The certifier can do all that the viewer and preparer can do in addition to having the ability to submit eDMR reports.

Each user must have a distinct email address.

Part C: Permit Holder Registration

The permit holder must print their name, sign, date, and title this part to signify agreement to be registered in the eDMR system. A minor modification will be needed to add the eDMR reporting requirements into permits at no cost to the permit holder if no other modifications occur at that time. The permit holder's signature asserts the information provided is to the best of their knowledge true, accurate, and complete.

Permit Holder Signature - All forms must be signed as follows and the signatures must be **original**:

a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
b. For a partnership or sole proprietorship, by a general partner or the proprietor.
c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

Part D: Certifier Registration

Each certifier must have a separate Part D. This part must be signed in front of a notary public. If the certifier and permit holder sign at different times or places, the certifier can sign in front of notary public 1 and then send the document to the permit holder to sign in front of notary public 2. If the certifier and permit holder are present together, they may both sign in front of notary public 1, making it unnecessary to have a second notary sign the form. By signing the form, both the certifier and permit holder are showing agreement with the submittal requirements as outlined in the part.

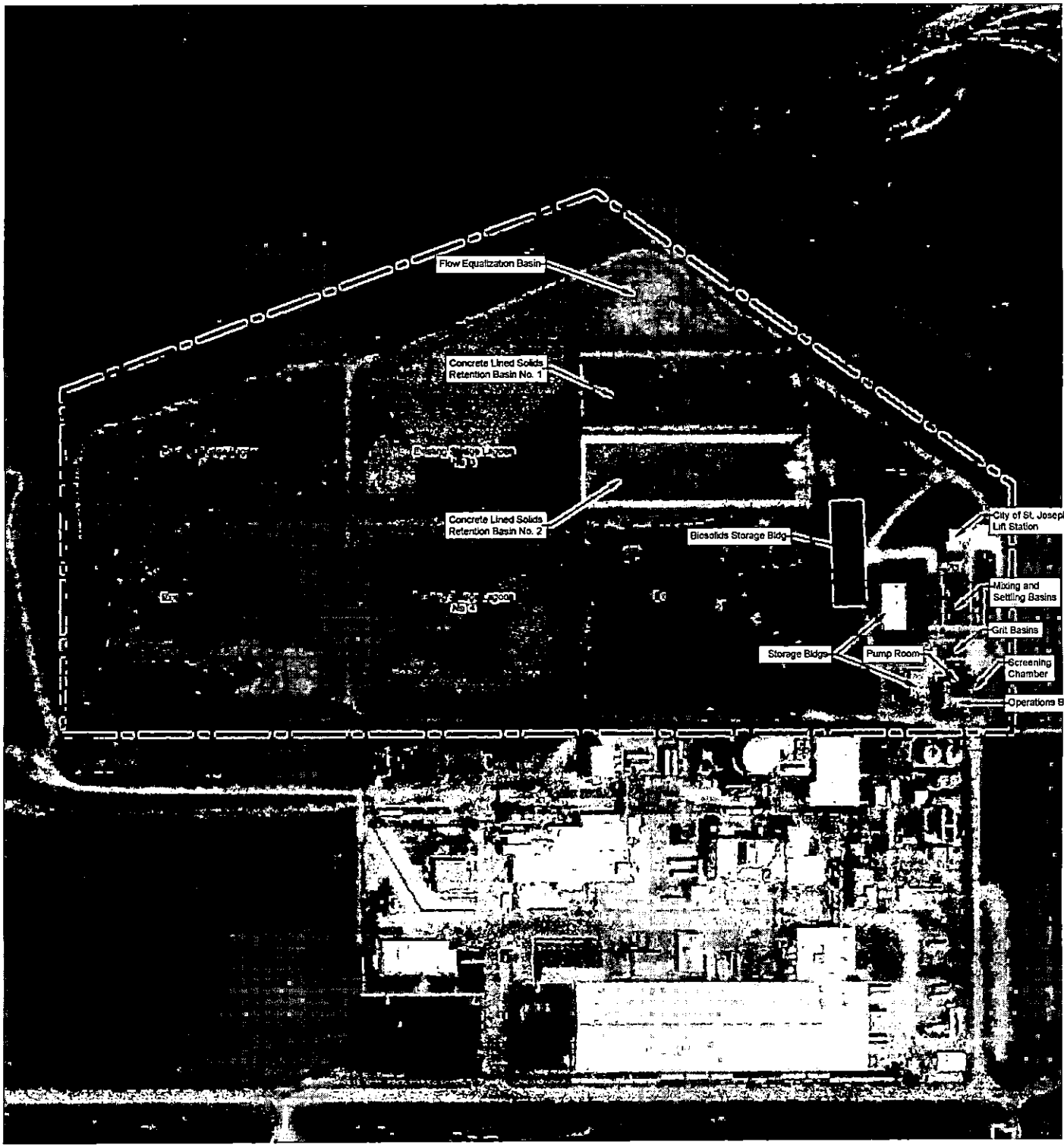
This completed form and any attachments should be submitted to:

Site-Specific Permits (MO-0000000)	General Permits (MO-R000000 or MO-G000000)
Department of Natural Resources Water Protection Program ATTN: Operating Permits Section P.O. Box 176 Jefferson City, MO 65102-0176	Please send to the appropriate regional office. A map of regional offices with addresses and phone numbers are available online at dnr.mo.gov/regions/.

Submittal of an incomplete form may result in form being returned.

If there are any questions concerning this form, contact the appropriate regional office or the Missouri Department of Natural Resources, Water Protection Program, Operating Permits Section at 855-789-3889 or 573-526-2082.

FILENAME: \\WELLSSERVER\Shared Folder\01 THE WELLS RESOURCE\2017 JOBS\South St. Joe Monitoring Wells, 17-04-02\DRAWING FILES\WORKING DRAWINGS\For Operating Permit\Facility Layout.dwg
DATE PLOTTED: 12/6/2017 12:15 PM DRAWN BY: JLB PLOT SCALE: 1:1



Facility Map
SCALE: 1" = 300'-0"

N

TWR

The Wells Resource LLC
Consulting Engineers
3919 Cuming St.
Omaha, NE 68131
Phone: 402-556-4504

South St Joseph Industrial Sewer District

PROJECT NO: 17-04-02
LOCATION: St. Joseph, MO
DRAWN BY:

DATE: 12-06-17
DRAWING:

FILENAME: \\wellsserver\shared folder\01 THE WELLS RESOURCE\2017 JOBS\South St. Joe Monitoring Wells, 17-04-02\DRAWING FILES\WORKING DRAWINGS\For Operating Permit\Outfall Map.dwg
DATE PLOTTED: 12/6/2017 11:11 AM DRAWN BY: JLB PLOT SCALE: 1:1

Site Vicinity Map
SCALE: 1" = 2000'-0"

N

TWR

The Wells Resource LLC
Consulting Engineers
3919 Cuming St.
Omaha, NE 68131
Phone: 402-556-4504

South St Joseph Industrial Sewer District

PROJECT NO: 17-04-02
LOCATION: St. Joseph, MO
DRAWN BY:

DATE: 12-06-17

DRAWING:

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM C – APPLICATION FOR DISCHARGE PERMIT – MANUFACTURING, COMMERCIAL, MINING, SILVICULTURE OPERATIONS, PROCESS AND STORMWATER

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

South St. Joseph Industrial Sewer District

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO-0118117

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 4952 B. SECOND 2879

C. THIRD 2047 D. FOURTH 2075

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) _____ 1/4 _____ 1/4 SEC_____ T_____ R_____ _____ COUNTY

No discharge facility – No outfalls

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST) RECEIVING WATER

No discharge facility - No outfalls

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

The South St. Joseph Industrial Sewer District is an Industrial Pre-treatment plant performing primary treatment for a number of industries located in South St. Joseph, MO. This is a no-discharge facility. All wastewater discharged from the South St. Joseph Industrial Sewer District is sent to the City of St. Joseph for secondary treatment before being discharged to the Missouri River.

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, public sewers and outfalls. If a water balance cannot by determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of 1. All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water and storm water runoff. 2. The average flow contributed by each operation. 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

The South St. Joseph Industrial Sewer District is a no discharge facility, therefore we have no outfalls.

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
(LIST)	A. OPERATION (LIST)	B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)	A. DESCRIPTION	B. LIST CODES FROM TABLE A

2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☑ **NO** *(GO TO SECTION 2.50)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(S) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				C. DURATION *(in days)*
				A. FLOW RATE *(in mgd)*		B. TOTAL VOLUME (specify with units)		
		A. DAYS PER WEEK *(specify average)*	B. MONTHS PER YEAR *(specify average)*	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

☐ **YES** *(COMPLETE B.)* ☑ **NO** *(GO TO SECTION 2.60)*

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINES EXPRESSED IN TERMS OF PRODUCTION (OF OTHER MEASURE OF OPERATION)?

☐ **YES** *(COMPLETE c.)* ☑ **NO** *(GO TO SECTION 2.60)*

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS AN ACTUAL MEASUREMENT OF YOUR MAXIMUM LEVEL OF PRODUCTION, EXPRESSED IN THE TERMS AND UNITS USED IN THE APPLICABLE EFFLUENT GUIDELINE AND INDICATE THE AFFECTED OUTFALLS.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS *(list outfall numbers)*
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

2.60 IMPROVEMENTS

A. ARE YOU NOW REQUIRED BY ANY FEDERAL, STATE OR LOCAL AUTHORITY TO MEET, ANY IMPLEMENTATION SCHEDULE FOR THE CONSTRUCTION, UPGRADING OR OPERATION OF WASTEWATER TREATMENT EQUIPMENT OR PRACTICES OR ANY OTHER ENVIRONMENTAL PROGRAMS THAT MAY AFFECT THE DISCHARGES DESCRIBED IN THIS APPLICATION? THIS INCLUDES, BUT IS NOT LIMITED TO, PERMIT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

☑ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☐ **NO** *(GO TO 3.00)*

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED
See 3. -description.		NA	Re-condition existing monitoring well and assess for background monitoring well. In current DNR permit	4/30/18	4/30/18

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS *(OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY AFFECT YOUR DISCHARGES)* YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

☐ **MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.**

No discharge facility

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

☐ YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.) ☑ NO (GO TO 3.20)

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

☐ **YES** *(LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.)* ☑ **NO** *(GO TO 3.30)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*

3.30 CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Chad Coleman/General Manager	(816) 238-3959
SIGNATURE (SEE INSTRUCTIONS) Chad Coleman /General Manager	DATE SIGNED 12/28/17

No discharge facility – no outfall

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet *(Use the same format)* instead of completing these pages.
SEE INSTRUCTIONS

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO.

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand (BOD)												
B. Chemical Oxygen Demand (COD)												
C. Total organic Carbon (TOC)												
D. Total Suspended Solids (TSS)												
E. Ammonia *(as N)*												
F. Flow	VALUE		VALUE		VALUE					VALUE		
G. Temperature *(winter)*	VALUE		VALUE		VALUE			°C		VALUE		
H. Temperature *(summer)*	VALUE		VALUE		VALUE			°C		VALUE		
I. pH	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM				STANDARD UNITS				

PART B – Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark column 2A for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS														
A. Bromide (24959-67-9)														
B. Chlorine, Total Residual														
C. Color														
D. Fecal Coliform														
E. Fluoride (16984-48-8)														
F. Nitrate - Nitrate *(as N)*														

No discharge facility - No outfall

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
G. Nitrogen, Total Organic *(as N)*														
H. Oil and Grease														
I. Phosphorus *(as P)*, Total (7723-14-0)														
J. Sulfate *(as SO^4)* (14808-79-8)														
K. Sulfide *(as S)*														
L. Sulfite (as SO^3) (14265-45-3)														
M. Surfactants														
N. Aluminum, Total (7429-90-5)														
O. Barium, Total (7440-39-3)														
P. Boron, Total (7440-42-8)														
Q. Cobalt, Total (7440-48-4)														
R. Iron, Total (7439-89-6)														
S. Magnesium, Total (7439-95-4)														
T. Molybdenum, Total (7439-98-7)														
U. Manganese, Total (7439-96-5)														
V. Tin, Total (7440-31-5)														
W. Titanium, Total (7440-32-6)														

No discharge facility – no outfall

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)														
2M. Arsenic, Total (7440-38-2)														
3M. Beryllium, Total (7440-41-7)														
4M. Cadmium, Total (7440-43-9)														
5M. Chromium III (16065-83-1)														
6M. Chromium VI (18540-29-9)														
7M. Copper, Total (7440-50-8)														
8M. Lead, Total (7439-92-1)														
9M. Mercury, Total (7439-97-6)														
10M. Nickel, Total (7440-02-0)														
11M. Selenium, Total (7782-49-2)														
12M. Silver, Total (7440-22-4)														
13M. Thallium, Total (7440-28-0)														
14M. Zinc, Total (7440-66-6)														
15M. Cyanide, Amenable to Chlorination														
16M. Phenols, Total														
RADIOACTIVITY														
(1) Alpha Total														
(2) Beta Total														
(3) Radium Total														
(4) Radium 226 Total														

RECEIVED
JAN 3 2018

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)
Water Protection Program

FORM R – PERMIT APPLICATION FOR LAND APPLICATION OF INDUSTRIAL WASTEWATER BIOSOLIDS AND RESIDUALS

FOR AGENCY USE ONLY
PERMIT NUMBER MO -
DATE RECEIVED

INSTRUCTIONS: FORMS A & C or F (CAFOs) (and D where applicable) must also be submitted for land application of industrial wastewater sludge biosolids or residuals. **Submit FORMS E and G** for land disturbance permit if construction areas total five acres or more.

Attach **FORM I**, if wastewater will be land applied or irrigated.

1.00 FACILITY INFORMATION

1.10 Facility Name
South St. Joseph Industrial Sewer District

1.20 Application for:
- ☐ Construction Permit (attach Engineering report, Plans and Specifications per 10 CSR 20-8.020)
- ☐ Operating Permit (if no construction permit, attach engineering documents)
  Date Land Application System Began Operation: ____
- ☑ Operating Permit Renewal MO-0118117

1.30 Months when the business or enterprise will operate or generate sludge or residuals:
■ 12 months per year ☐ Part of year (list Months): ____

1.40 List the Facility outfalls which will be applicable to the land application system from outfalls listed on Form A, C, D and F.
Outfall Nos. NONE ___ ___ ___ ___ ___ ___ ___

2.00 STORAGE BASINS

2.10 Number of storage basins: 2 Type of basin: ☐ Steel ☑ Concrete ☐ Fiberglass ☐ Earthen
☐ Earthen with membrane liner

2.20 Storage basin dimensions at inside top of berm (feet): Report freeboard as feet from top of berm to emergency spillway or overflow pipe.
(Complete Attachment A: Profile Sketch)
Basin #1: Length 496' Width 168' Depth 12' Freeboard 2' Berm Width 12' % Slope 2:1
Basin #2: Length 493' Width 158' Depth 12' Freeboard 2' Berm Width 12' % Slope 2:1

2.21 Storage basin volumes (gallons): Permanent volume means two foot water depth for seal protection, and any required treatment volume capacity.
Basin #1: Gallons: NA Permanent Volume + ____ Storage = ____ Total volume (gallons)
Basin #2: Gallons: NA Permanent Volume + ____ Storage = ____ Total volume (gallons)

2.30 Storage Basin operating levels (report as feet below emergency overflow level)
Basin #1: Maximum water level 10 ft. Minimum operating water level 0 ft.
Basin #2: Maximum water level 10 ft. Minimum operating water level 0 ft.

2.40 Storage Basin design storage capacity: (storage between minimum and maximum operating levels for 1-in10 year storm water flows.)
Basin #1: NA days Basin #2: NA days Basin #3: NA days

2.50 Attach Water Balance Test results to verify earthen basin seal in accordance with 10 CSR 20-8.020(13) and (16), when required by the department.

2.60 Attach a sludge management plan for materials that are not land applied. Materials that are not land applied are stored in the Concrete basin or our Biosolids storage building.

2.70 Attach a closure plan for lagoons, storage basins and treatment units.

3.00 LAND APPLICATION SYSTEM

3.10 Number of application sites 79 Total Available Acres ___ Minimum & Maximum % field slopes ____
Location: ___ ¼ ___ ¼ ___ ¼ ___ Sec. ___ T ___ R ____ County ___ Acres
Location: ___ ¼ ___ ¼ ___ ¼ ___ Sec. ___ T ___ R ____ County ___ Acres
Attach extra sheets as necessary. See p. 2-12 of current permit (attached)

3.12 Type of vegetation: ☑ Grass hay ☑ Pasture ☐ Timber ☑ Row crops ☐ Other (describe) ____
Specific Crops and Yields/acre: Goal: ____ Actual for last five years: ____ Varies per application site

3.20 Annual sludge production (gallons per year): _____ Actual _____ Design
(dry tons per year): _____ Actual _____ Design
Human Population Equivalent: NA Actual _____ Design

3.21 Land Application rate per acre:
Design: _____ dry ton/year _____ dry ton/application _____ No. applications/year
Actual: _____ dry ton/year _____ dry ton/application _____ No. applications/year
Total amount land applied each year (total all sites) Design _____ dry ton/year Actual _____ dry ton/year
Actual months used for land application: ☐ Jan ☐ Feb ☑ Mar ☑ Apr ☑ May ☑ Jun ☑ Jul ☑ Aug ☑ Sep ☑ Oct ☑ Nov ☑ Dec

3.22 Land Application Rate is based on:
☐ Nutrient Management Plan (N&P) ☑ PAN ☑ Conservative
☐ Hydraulic Loading ☐ Limiting Pollutant (Specify) _____
■ Other (describe) Phosphorous based when necessary-Varies farm to farm

3.30 Equipment type: ☐ Tank wagon ☐ Tank truck ☐ Subsurface injection ☑ Slinger spreader ■ Dry spreader
☐ Other (describe) _____
Equipment Capacity: _____ Gallons (cubic feet) per hour _____ Total hours of operation per year

3.40 Public Use/Access Sites: If public use or access to land application site, describe pathogen treatment and site access restrictions. If human, animal, or organic wastes, refer to 40 CFR 503.32 for pathogen treatment methods. Attach extra sheets as necessary.
Not applied on public use sites

3.50 Separation distance (in feet) from the outside edge of the biosolids application area to down gradient features: specified in current permit (attached) p. 19
_____ Permanent flowing stream _____ Losing Stream _____ Intermittent (wet weather) stream _____ Lake or pond
_____ Property boundary _____ Dwellings _____ Water supply well _____ Other (describe) _____

3.60 SOILS INFORMATION: Use information from the County Soil Survey, NRCS, or professional soil scientist.
NOTE: On-site soils classification by a professional soil scientist may be required by the department where appropriate.
Soil Series Name _____ Depth of bedrock ____ Feet Depth to water table ____ Feet
Soil Infiltration rate in inches/hour (in/hr) for most restrictive layer within the following soil depth ranges:
_____ In/hr for 0-12 inch soil depth _____ In/hr for 12-24 inch soil depth _____ In/hr for 24-60 inch soil depth

3.70 Attach Nutrient Management Plan (NMP) including calculations for plant available nitrogen (PAN) and other nutrients, crop requirements, crop yields and other management factors. Include USDA/NRCS phosphorus recommendations. Example attached specified in current permit

3.80 Geologic Investigation: _____ Date of most recent Geologic Report by Department's Division of Geology and Land Survey.
Hydrogeologic Evaluations performed on all Land App. sites in 2015 & 2016. DNR has copies.

3.81 Ground Water Monitoring Wells: (Attach Groundwater Monitoring Plan when required by department)
☐ NONE ☑ EXISTING ☐ PLANNED NUMBER: 4 Monitoring Wells ____ Lysimeters

3.90 Attach a current copy of the Operation and Maintenance (O&M) Plan for the land application system. Date of O&M Plan: Example attached Continually updated

3.91 Attach a site map showing topography, storage basins, land application sites, property boundary, streams, wells, roads, dwellings and other pertinent features. All current land application sites on file with DNR. Attached

3.92 Attach a facility sketch showing treatment units, storage basins, pipelines, application sites and other features. Attached

4.00 INDUSTRIAL PROCESS INFORMATION

4.10 Brief description of treatment processes prior to land application and note any changes made in last five years. (Attach extra sheets as necessary.) Sludge and grit are sent to one of the concrete storage structures for approximately 10-12 months. After this the material is sent to the other concrete lagoon. Water is decanted off of initial lagoon and material is allowed to digest for several months. Remaining water removed and material allowed to dry. Clean material out of lagoon and pile in Biosolids Storage Shed until it is land applied. Then in process sludge sent back to initial lagoon.

4.11 Detailed description of industrial production processes. Also indicate any changes made in last five years. (attach extra sheets as necessary)
No industrial process occur on site, mechanical wastewater pre-treastment

4.20 List of raw materials, chemicals, additives, products, and by-products (Attach extra sheets as necessary)

None used in primary treatment of Wastewater

4.31 Attach following FORMS for wastewater to be land applied. No Wastewater land applied

FORM C or F is required for all applicants. Use Form F for CAFOs.

FORM D is required for those industries listed in the Form D instructions or when required by the department.

Use actual testing results within last 12 months. For new operations use testing results from other similar operations or from published literature.

4.32 Are there any listed hazardous wastes in the material to be land applied: ☐ YES ☑ NO (If YES, attach testing results)

4.40 A. Are any Pollutants listed in 40 CFR 268.40 believed to be present in detectable concentrations: ☐ YES ☑ NO

B Are any Pollutants listed in 10 CSR 20-7.031 believed to be present in detectable concentrations: ☐ YES ☑ NO

C. Are any Pollutants listed in EPA Process Design Manual for Land Treatment of Municipal Wastewater publication EPA-625/1-81-013, Table 4-5 and Table 4-16 believed present in detectable concentrations: ☐ YES ☑ NO

(Attach a copy of testing results for any pollutants that may be present in detectable concentrations.)

4.50 Environmental Assessment. Do any of the pollutants detected exceed the criteria for pollutant concentrations of limitations contained in the publications referenced in Section 4.40 of this form: ☐ YES ☑ NO

If YES, attach a copy of the Environmental Assessment as required in 10 CSR 20-8.020(3)(D).

5.00 SOIL TESTING RESULTS: Complete information for each pollutant listed and each land application site. Attach results of any other soil testing performed in the last 12 months. Soil sampling and testing should conform to University publication G9110, Sampling Your Soil for Testing; Soil Test Procedures for North Central Region (North Dakota Agricultural Experiment Bulleting 499-Revised); Methods of Soil Analysis, American Society of Agronomy, Inc.; Soil Testing and Plant Analysis, Soil Science Society of America, Inc.; EPA Methods; or other methods approved by the department. Attach extra sheets as necessary. Attached Soil testing performed in the last 12 months.

Total area sampled is ____ acres. Each composite sample covers ____ acres. Each composite consists of ____ subsamples.

Sample depth: ☑ 0-6 inches ☐ 0-12 inches ☐ Other (describe) ____ Varies per site.

Pollutant	Concentration (mg/kg or ppm)			Pounds/ Acre	No. Composite Samples	Sample Period
	Minimum	Maximum	Average			
Organic Nitrogen as N						
Ammonia Nitrogen as N						
Nitrate Nitrogen as N						
Phosphorus as P (Bray 1P)						
Exchangeable Sodium %						
Organic Matter (percent)						
Cation Exchange Capacity						
pH (standard units)						
Other pollutants present in the material to be land applied: (Attach extra sheets as necessary)						

Including Copies of Biosolids testing for 2017 for review. Tested as per current permit.

6.00 LAND LIMITING CONSTITUENTS FOR LAND APPLICATION

6.10 Metals of Concern for Land Application. Complete information for each pollutant listed.
Analysis results must be for "TOTAL METALS". (Do NOT use TCLP, dissolved, total recoverable or other extraction methods.
Include all test results for the last 5 years and a minimum of 4 separate samples.

Pollutant (total metals)	Concentration (mg/kg dry weight)			Design LBS/ Acre/Year	Type of Samples	Number Samples	Sample Location	Sample Period
	Minimum	Maximum	Average					
Aluminum								
Arsenic								
Beryllium								
Cadium								
Chromium								
Copper								
Fluoride								
Lead								
Manganese								
Mercury								
Molybdenum								
Nickel								
Selenium								
Silver								
Tin								
Zinc								

6.20 Major Pollutants of Concern for Land Application. Complete information for each pollutant listed. Include any other pollutants that are most limiting for determining land application rates. Attach extra sheets as necessary.

Organic Nitrogen as N								
Ammonia Nitrogen as N								
Nitrate Nitrogen as N								
Total Nitrogen as N								
Plant Available Nitrogen (PAN)								
Total Phosphorus as P								
Boron								
Chlorides								
Sodium								
COD								
TPH								
Total Suspended Solids								
Oil & Grease								
Sodium Absorption Ration (SAR)								
pH (standard units)								

6.30 Other Limiting Pollutants for Land Application Rates. Specify any other pollutants that are most limiting for determining land application rates. Include any additional significant pollutants from Section 4 that is not already listed in Section 6.00. Attach extra sheets as necessary.

Pollutant	Concentration (mg/kg dry weight)			Design LBS/ Acre/Year	Type of Samples	Number Samples	Sample Location	Sample Period
	Minimum	Maximum	Average					

6.40 Requirements for Public Use Sites. Complete this if land application onto public use or public access sites or if material will be distributed for general public use. Fecal Coliform, Salmonella and Entric Virus must be tested if the biosolids include waste material from humans, animals, vegetables or organic matter. Not used on public use sites.

Pollutant		Concentration (mg/kg dry weight)			Type of Samples	Number Samples	Sample Location	Sample Period
		Minimum	Maximum	Average				
Total Dioxin TEQ*								
* Required Only for public access sites. TEQ = Toxicity Equivalents for CDD and CDF isomers per EPA Publication EPA/625/3-89/016 and EPA method 1613. Detection limits must be less than 1.0 ppt.								
Fecal Coliform								
Salmonella								
Enteric Virus								
Other (specify)								

7.00 CERTIFICATION

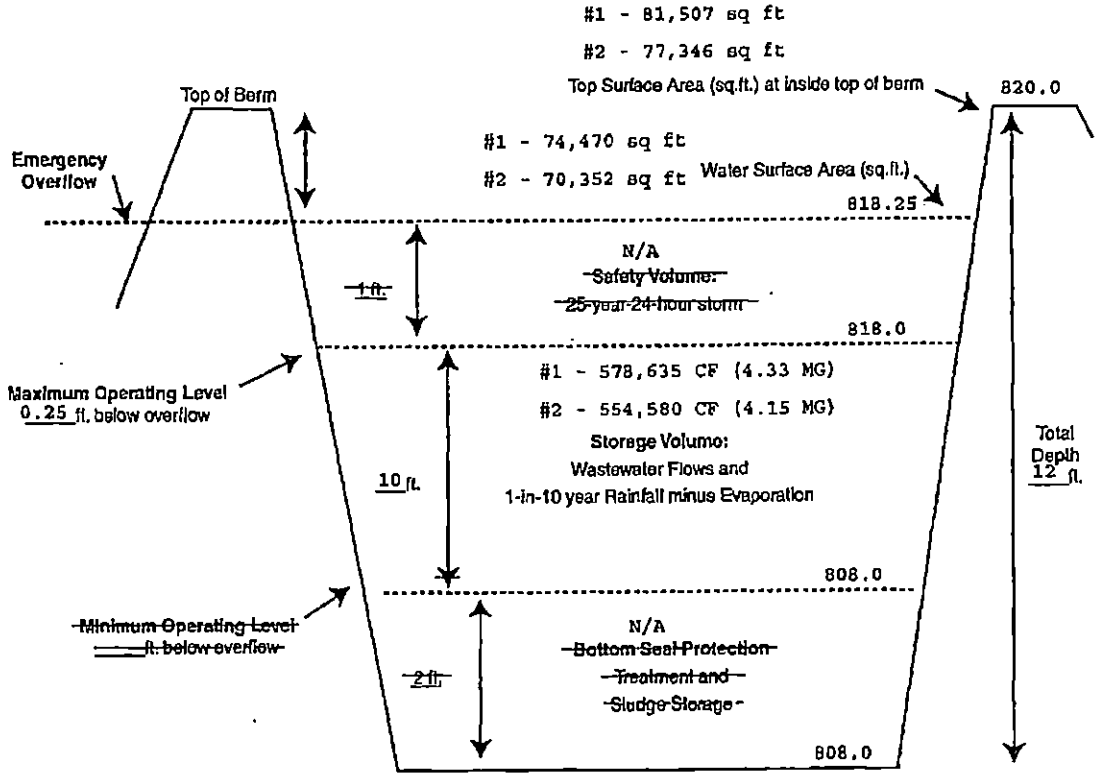
I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THIS INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE OR IMPRISSONMENT.

CONSULTING ENGINEER – Name, Official Title and Engineering Firm (TYPE OR PRINT)	TELEPHONE NUMBER (area code and number)
SIGNATURE	DATE SIGNED
OWNER OR AUTHORIZED REPRESENTATIVE – Name and Official Title (TYPE OR PRINT)	TELEPHONE NUMBER (area code and number)
Chad Coleman-General Manager	816-238-3959
SIGNATURE	DATE SIGNED
Chad Coleman	12/28/2017

ATTACHMENT A

(To be included with Form I and Form R)

Lagoon or Storage Basin
PROFILE SKETCH



DEFINITION OF TERMS (REFER TO THE PROFILE SKETCH ABOVE).

a. Freeboard is depth from top of berm to emergency spillway (minimum 1 foot);
b. Safety Volume is depth for 25-year, 24-hour storm (minimum of 1 foot);
c. Maximum Operating Level is at bottom of the safety volume (minimum of 2 feet below top of berm).
d. Minimum Operating Level is 2 feet above bottom of lagoon for seal protection per 10 CSR 20-8.020(15)(D). The minimum operating level may be greater than 2 feet when additional treatment volume is included.
e. Storage Volume and days storage are based on the volume between Minimum and Maximum Operating Levels.
f. Total Depth is from top of berm to bottom of basin including freeboard.

University Extension
University of Missouri-Columbia

Soil Test Report

Soil Testing Laboratory
23 Mumford Hall, MU
Columbia, MO 65211
Phone: (573) 882-0523

or

Soil Testing Laboratory
P.O. Box 160
Portageville, MO 63873
Phone: (573)379-5431

http://www.soiltest.psu.missouri.edu/

Serial no. S97225-1	Lab no. C1703115
County Buchanan	Region 1
Submitted 2/13/2017	Processed 2/20/2017

Soil sample submitted by: Firm Number: Outlet:

FIELD INFORMATION		
Field ID RP6	Sample no 1	
Acres	Last Limed unknown	Irrigated No
Last crop 16 CLOVER/CL-GRASS HAY		FSA Copy N

This report is for:
S. ST JOE IND SEWER
1409 LOWER LAKE RD
ST JOSEPH MO 64504

SOIL TEST INFORMATION			RATING					
			Very Low	Low	Medium	High	Very High	Excess
pH_s (salt pH)	7.0		**********					
Phosphorus (P)	4	lbs/A	****					
Potassium (K)	213	lbs/A	**********					
Calcium (Ca)	7717	lbs/A	**********					
Magnesium (Mg)	998	lbs/A	**********					
Sulfur (SO_4-S)		ppm						
Zinc (Zn)		ppm						
Manganese (Mn)		ppm						
Iron (Fe)		ppm						
Copper (Cu)		ppm						

Organic matter	1.4 %	Neutralizable acidity 0.0 meq/100g	Cation Exch. Capacity 23.7 meq/100g		
PH in water		Electrical Conductivity Mmho/cm	Sodium (Na) lbs/A		
Nitrate (NO_3-N) Topsoil	0.5 ppm	Subsoil ppm	Sampling Depth Top Inches	Subsoil Inches	

NUTRIENT REQUIREMENTS

Cropping options	Yield goal	Pounds per acre N	P_2O_5	K_2O	Zn	S
16 CLOVER/CL-GRASS HAY	3 T/A	0	85	135		
18 COOL SEASON GRASS HAY	3 T/A	120	85	120		
26 WARM SEASON GRASS HAY	3 T/A	60	55	65		
103 CORN (GRAIN)	175 bu/A	240	145	90		

LIMESTONE SUGGESTIONS

Effective Neutralizing Material (ENM)	0
Effective magnesium (EMg)	0

Comments

---Some herbicide labels list restrictions based on soil pH in water. This sample has an estimated pH in water of 7.5 . Use this estimated pH in water as a guide. If you wish to have soil pH in water analyzed, contact your dealer or Extension specialist listed below.

---For hay production apply nitrogen just before spring growth begins (typically March). Consider splitting nitrogen applications if the rate exceeds 90 lbs N/acre, applying 60% in March and the balance in mid August.

---For warm season grass production, apply 60 lbs nitrogen per acre in early June.

---The soil profile nitrate-N is less than the expected N released (ENR) from organic matter. The N recommendation for CORN (GRAIN) was made using ENR from organic matter.

A Test is Very low, Should be around 45#/A.

Regional Agronomy Specialist Wayne Flanary. Phone 660-446-3724

Signature

White-Farmer, Yellow-FSA, Blue-Firm, Pink-Extension MP 189 Revised 1/96 Columbia

University Extension
University of Missouri-Columbia

Soil Test Report

Soil Testing Laboratory
23 Mumford Hall, MU
Columbia, MO 65211
Phone: (573) 882-0623

or

Soil Testing Laboratory
P.O. Box 160
Portageville, MO 63873
Phone: (573)379-5431

http://www.soiltest.psu.missouri.edu/

Serial no. S97220-1	Lab no. C1622416
County Buchanan	Region 1
Submitted 12/1/2016	Processed 12/6/2016

Soil sample submitted by: Firm Number: Outlet:

FIELD INFORMATION		
Field ID RP12	Sample no 1	
Acres	Last Limed unknown	Irrigated No
Last crop 18 COOL SEASON GRASS HAY		FSA Copy N

This report is for:

S ST JOE IND SEWER
1409 LOWER LAKE ROAD
SAINT JOSEPH MO 64504

tiffanyeidson@hotmail.com

SOIL TEST INFORMATION			RATING					
			Very Low	Low	Medium	High	Very High	Excess
pH_s (salt pH)		6.4	**********					
Phosphorus (P)		13 lbs/A	**********					
Potassium (K)		313 lbs/A	**********					
Calcium (Ca)		5345 lbs/A	**********					
Magnesium (Mg)		608 lbs/A	**********					
Sulfur (SO_4-S)		ppm						
Zinc (Zn)		ppm						
Manganese (Mn)		ppm						
Iron (Fe)		ppm						
Copper (Cu)		ppm						

Organic matter 5.9 %	Neutralizable acidity 1.0 meq/100g	Cation Exch. Capacity 17.3 meq/100g			
PH in water	Electrical Conductivity Mmho/cm	Sodium (Na) lbs/A			
Nitrate (NO_3-N) Topsoil 5.3 ppm	Subsoil ppm	Sampling Depth Top 6 Inches	Subsoil Inches		

NUTRIENT REQUIREMENTS

Cropping options	Yield goal	Pounds per acre N	P_2O_5	K_2O	Zn	S
18 COOL SEASON GRASS HAY	3 T/A	120	65	45		
19 COOL SEASON GR PAST	175 CD/A	105	45	20		
16 CLOVER/CL-GRASS HAY	3 T/A	0	60	50		

LIMESTONE SUGGESTIONS

Effective Neutralizing Material (ENM)	0
Effective magnesium (EMg)	0

Comments

---For hay production apply nitrogen just before spring growth begins (typically March). Consider splitting nitrogen applications if the rate exceeds 90 lbs N/acre, applying 60% in March and the balance in mid August.

---Some herbicide labels list restrictions based on soil pH in water. This sample has an estimated pH in water of 6.9 . Use this estimated pH in water as a guide. If you wish to have soil pH in water analyzed, contact your dealer or Extension specialist listed below.

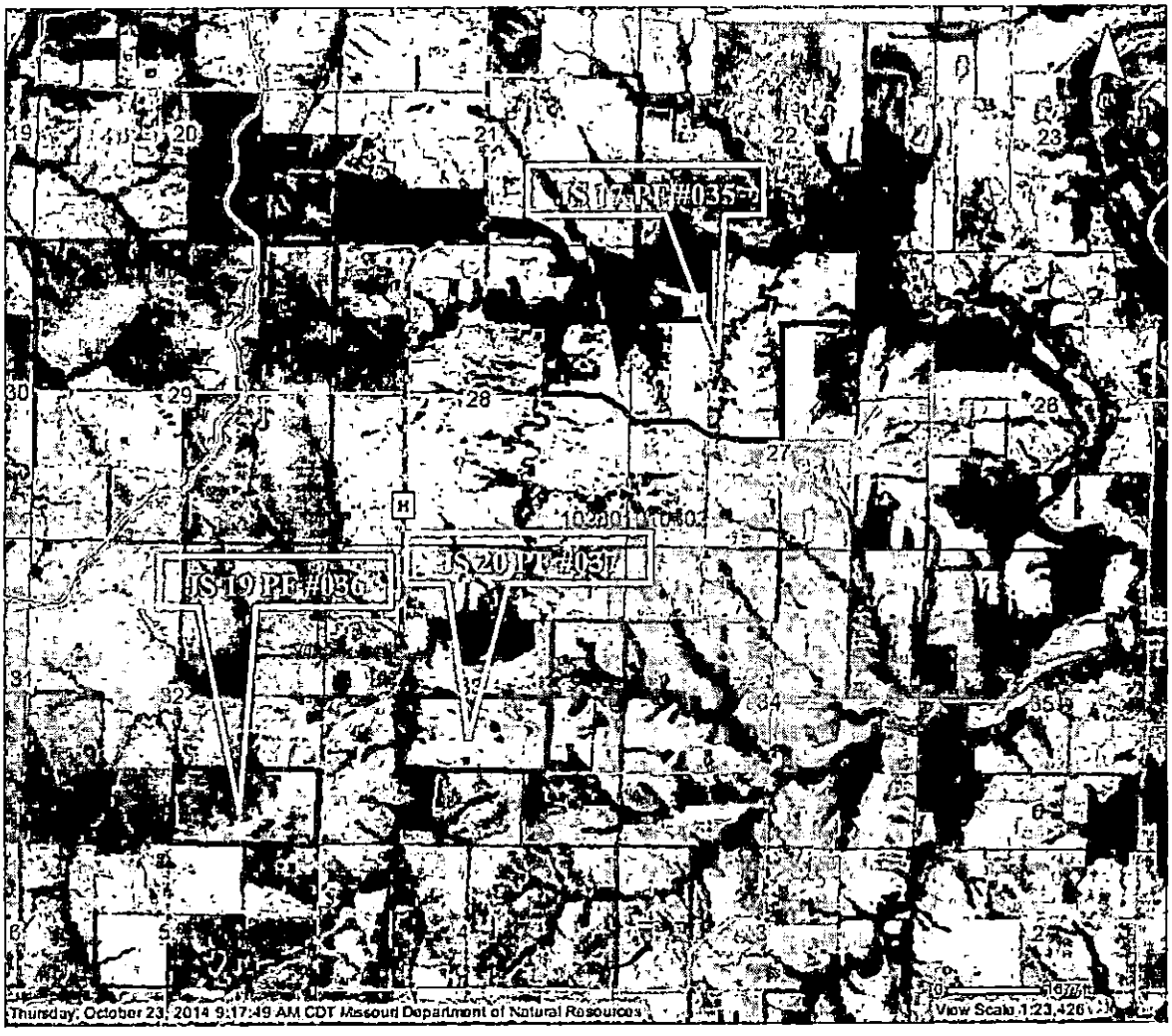
---For cool season grass pasture and bluegrass pasture split nitrogen applications between late Spring after first grazing and mid August, applying 60% before the season of greatest need.

Regional Agronomy Specialist Wayne Flanary. Phone 660-446-3724

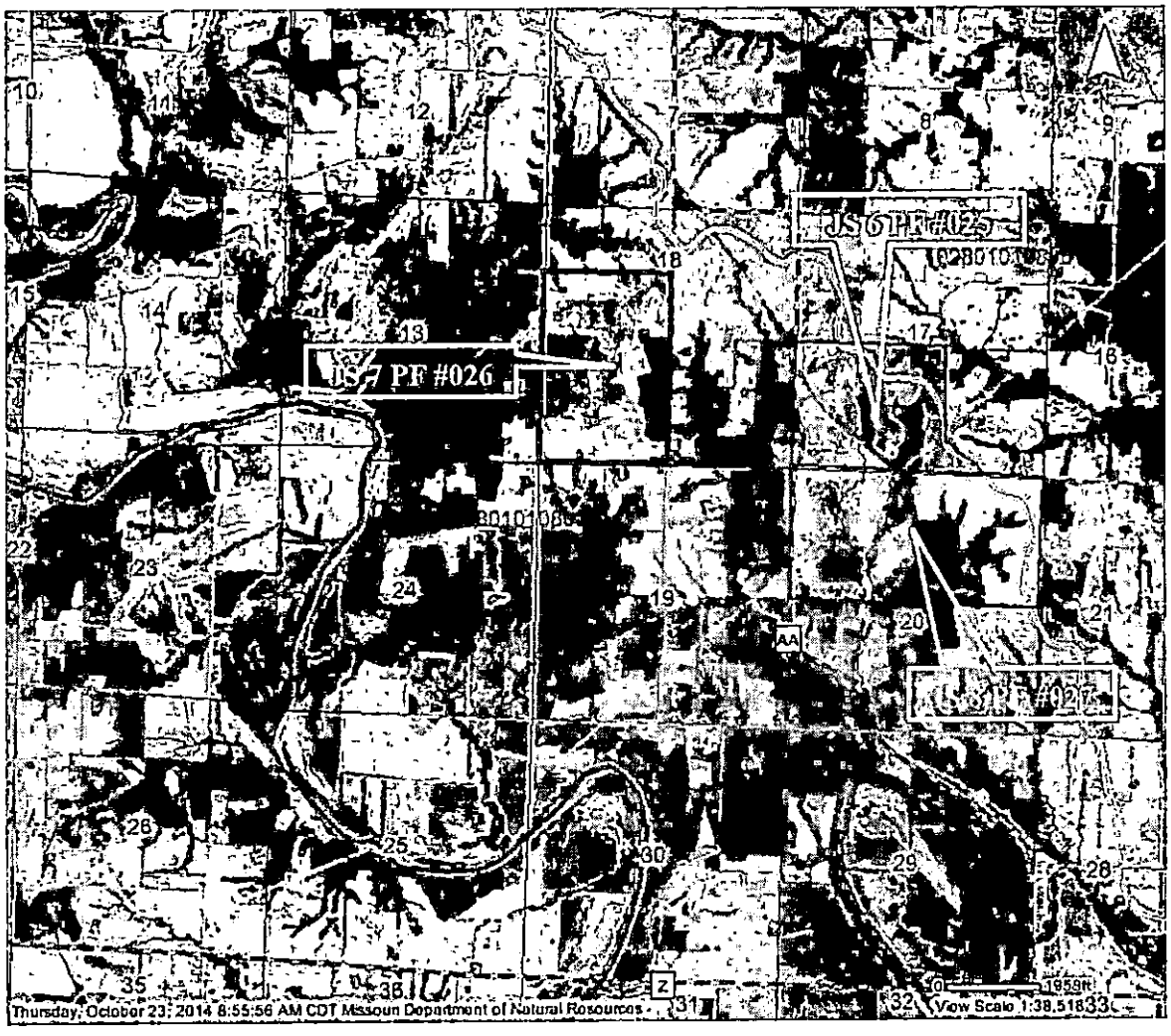
Signature Columbia

White-Farmer, Yellow-FSA, Blue-Firm, Pink-Extension MP 189 Revised 1/96
University of Missouri, Lincoln University, U.S. Department of Agriculture & Local University Extension Councils Cooperating
Equal opportunity institutions

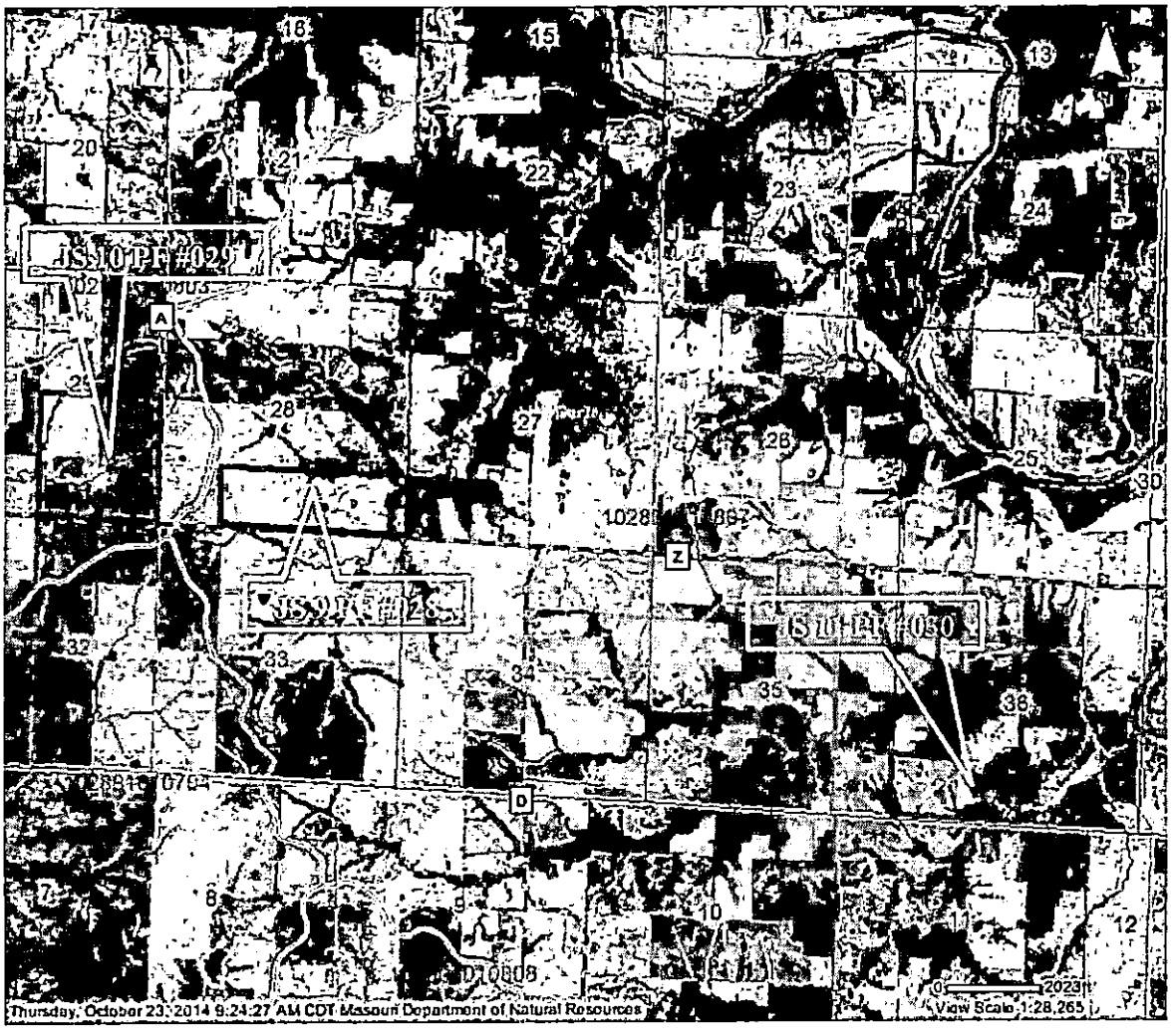
T62N R31W JS 17-20



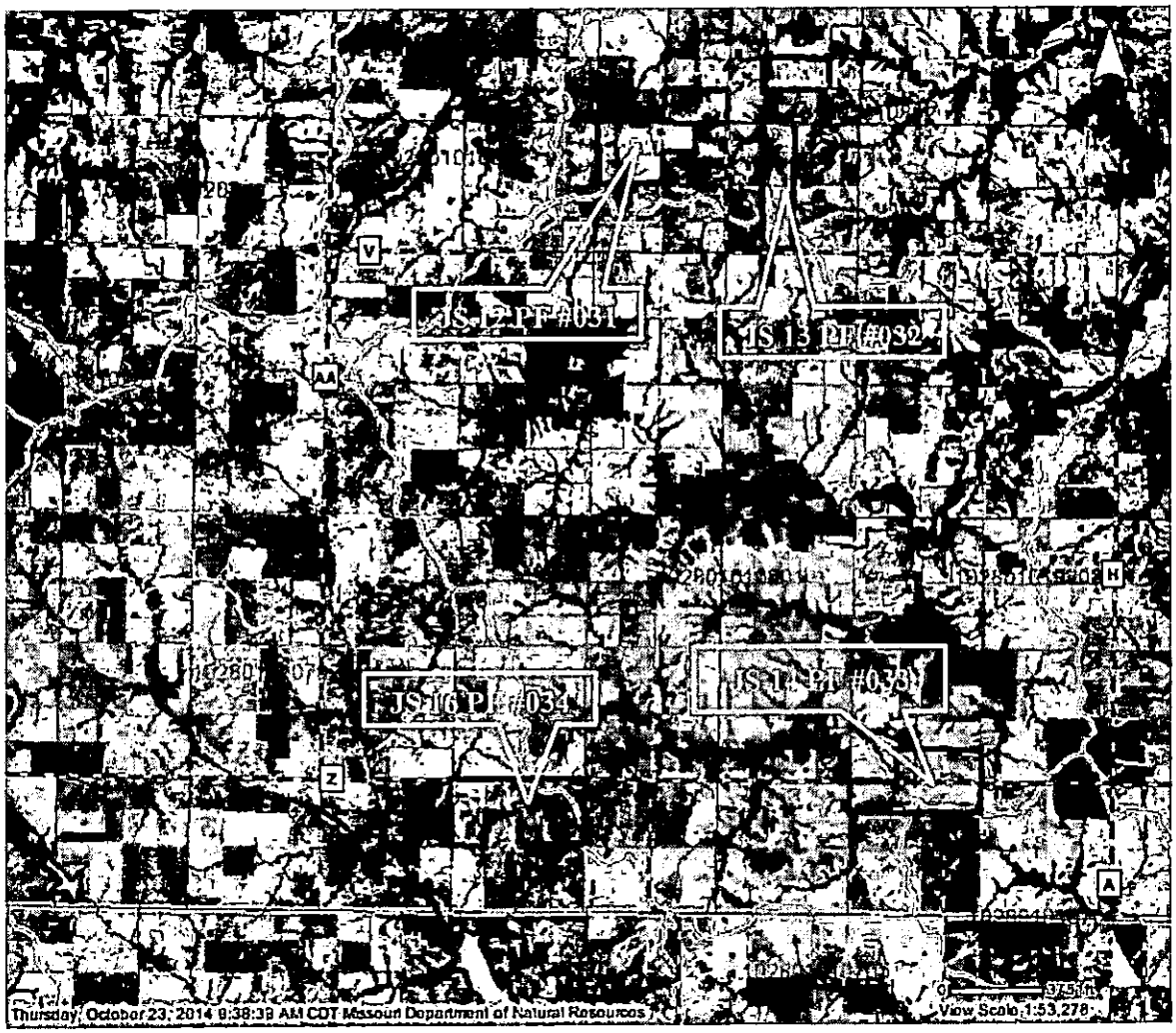
T61N R29W JS 6-8



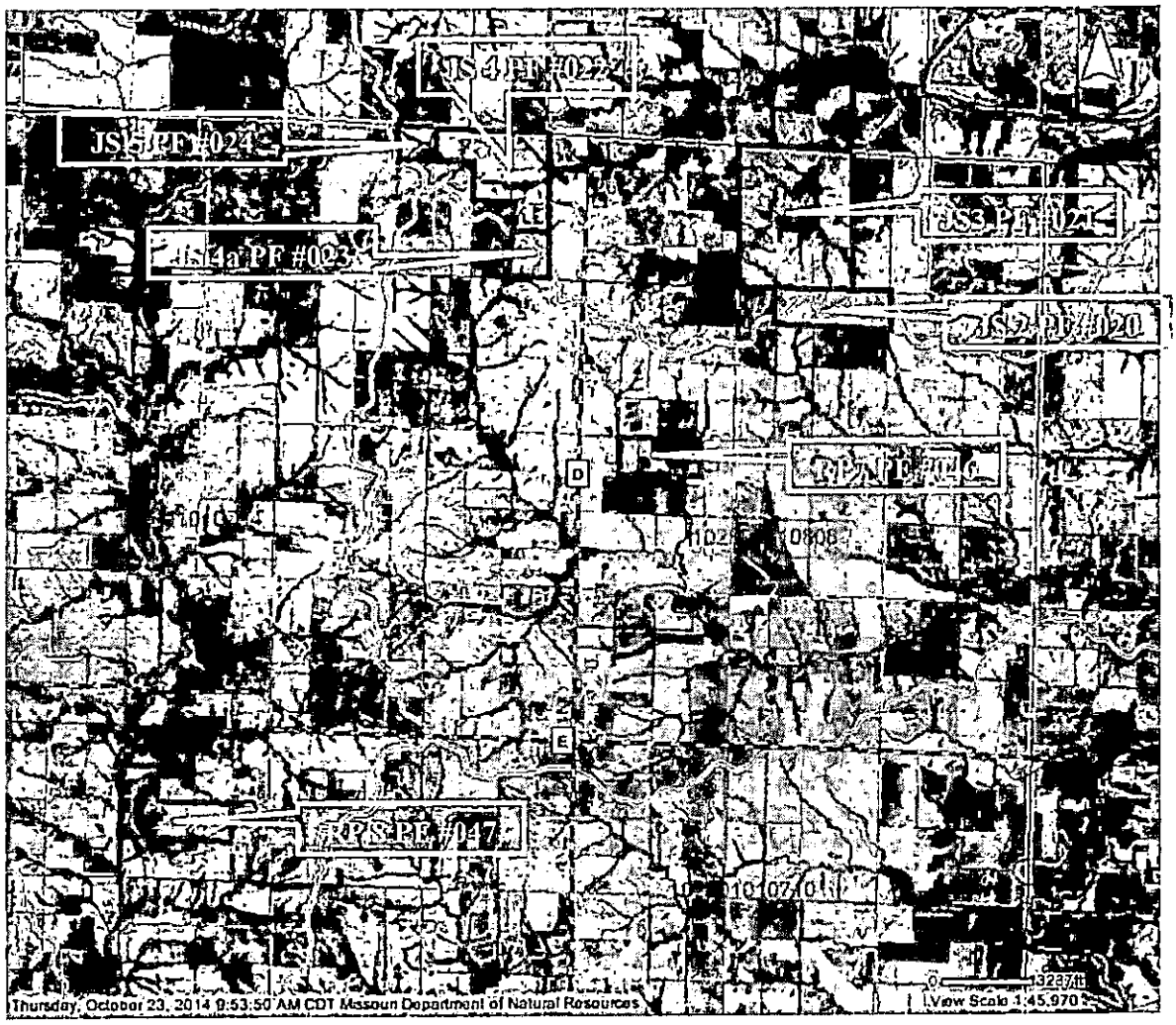
T61N R30W JS 9-11



T61N R31W JS 12-16

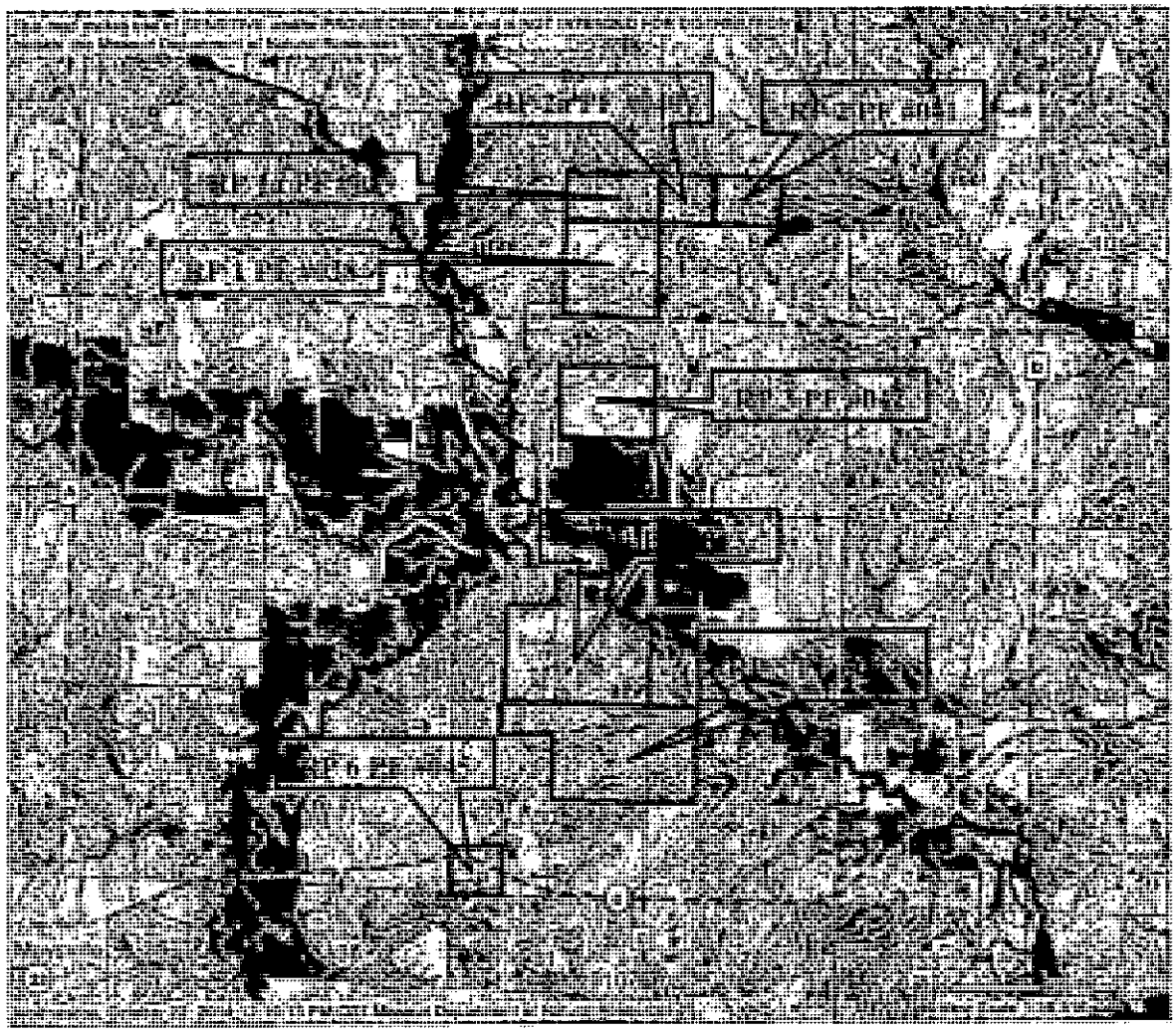


T60N R30W JS 2-5 and RP 7-8



T60N R31 W JS 1 and RP 12

T59N R30W Fields RP 1 - RP 6



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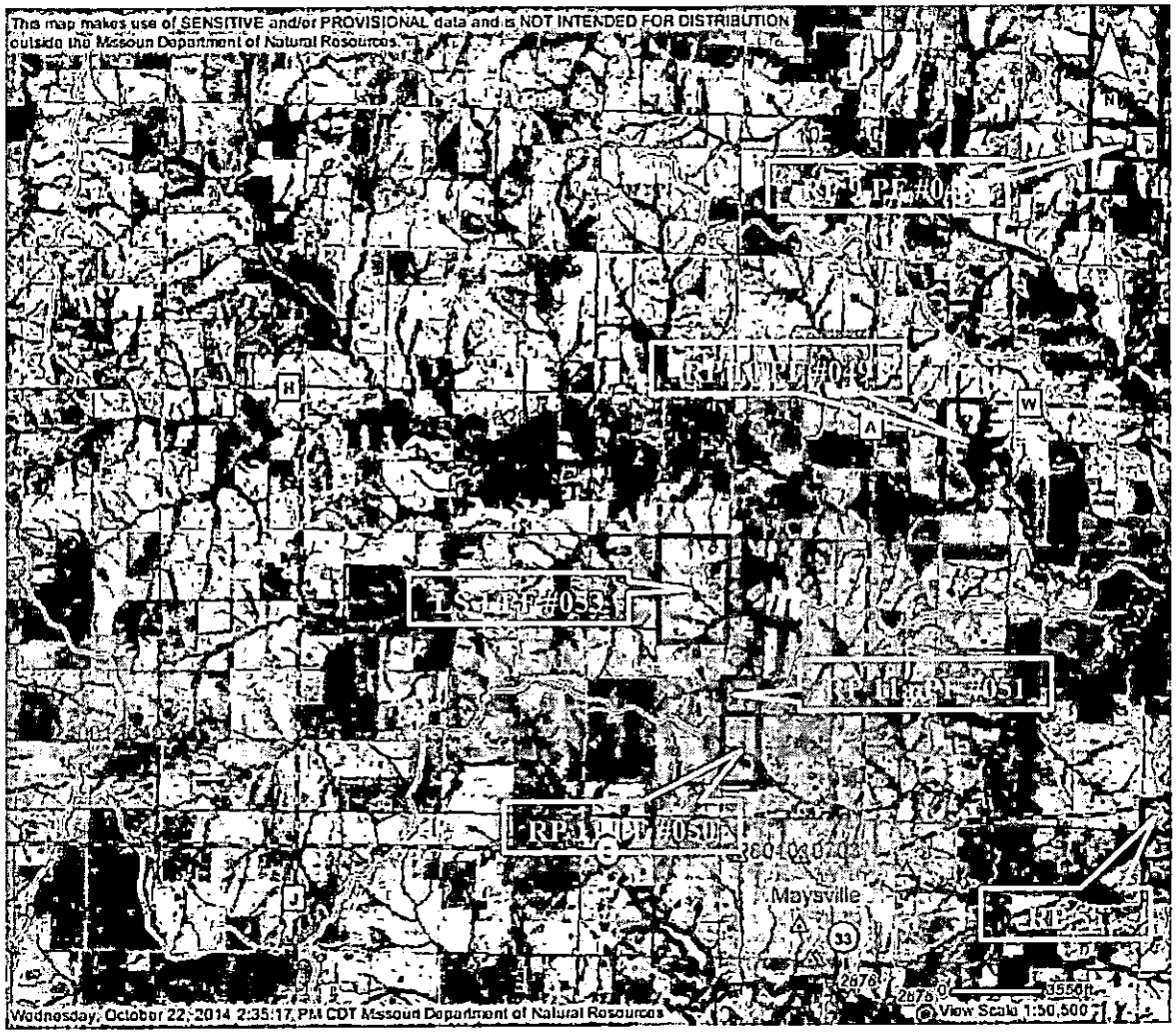

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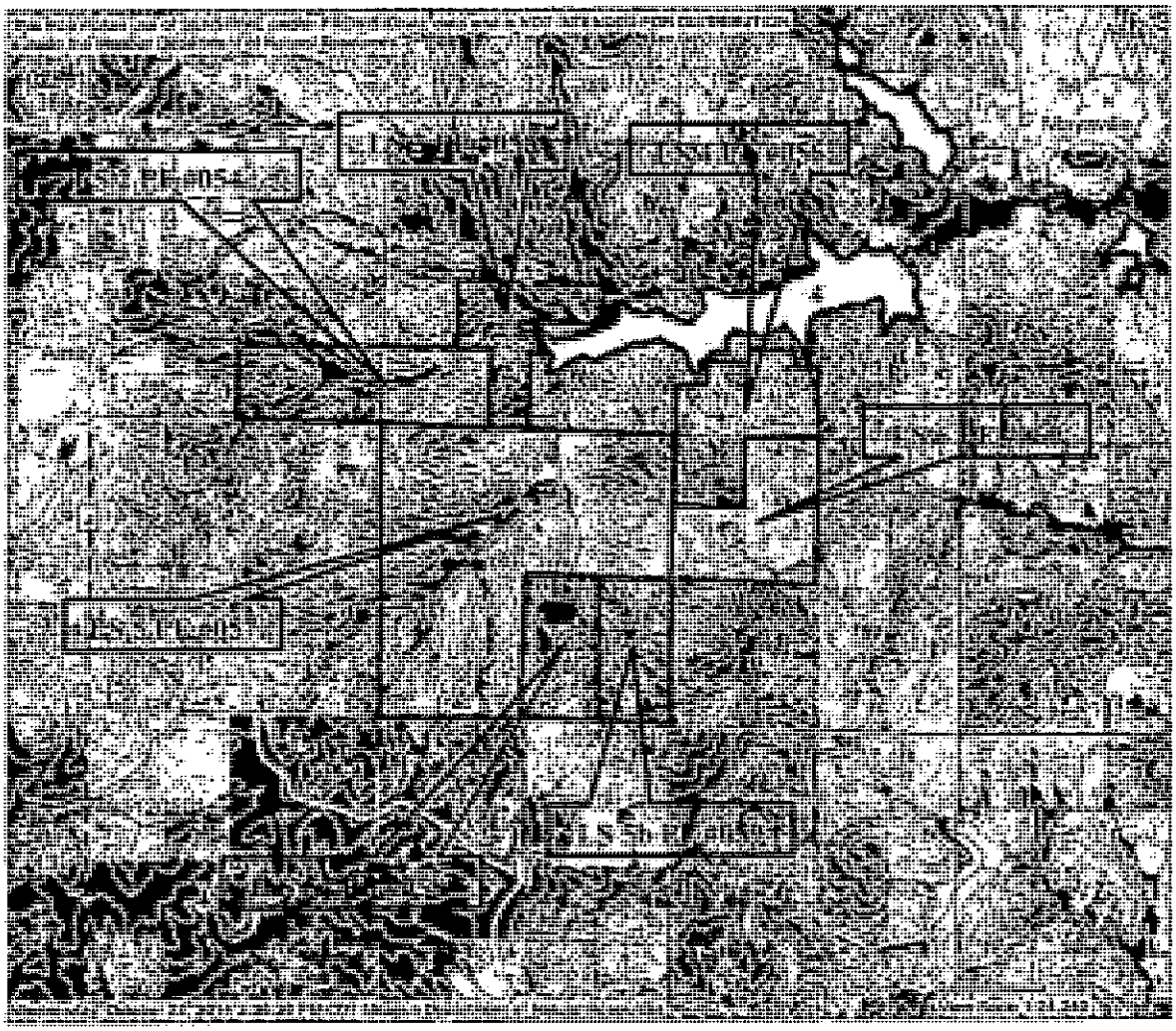

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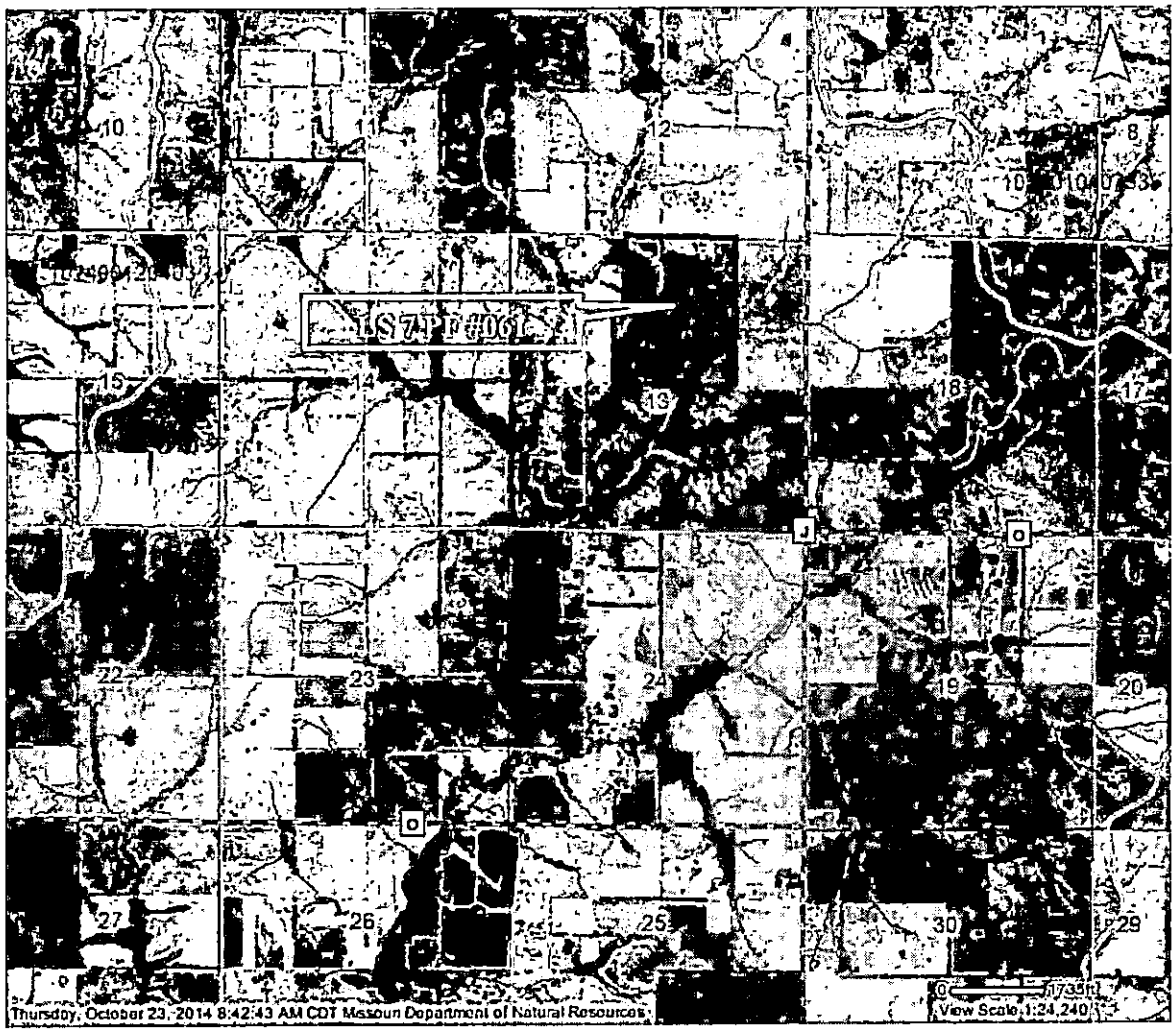
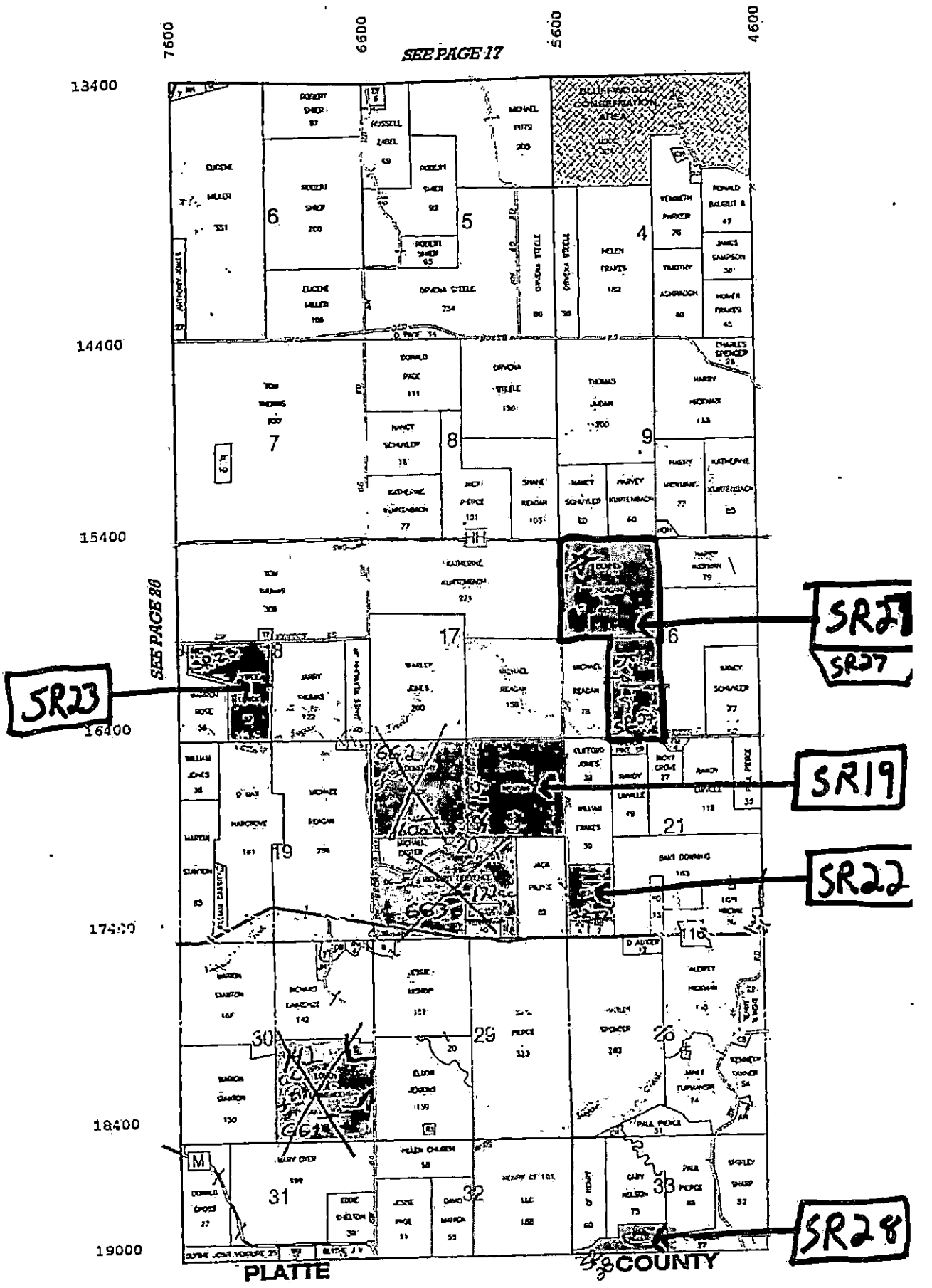


BUCHANAN COUNTY, MISSOURI

2008 PLAT BOOK

Planning and Zoning
411 Jules St, RM 204 | St. Joseph, MO 64501 | 816.271.1429
www.co.buchanan.mo.us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RANGE 36 W
BLOOMINGTON POLITICAL TOWNSHIP
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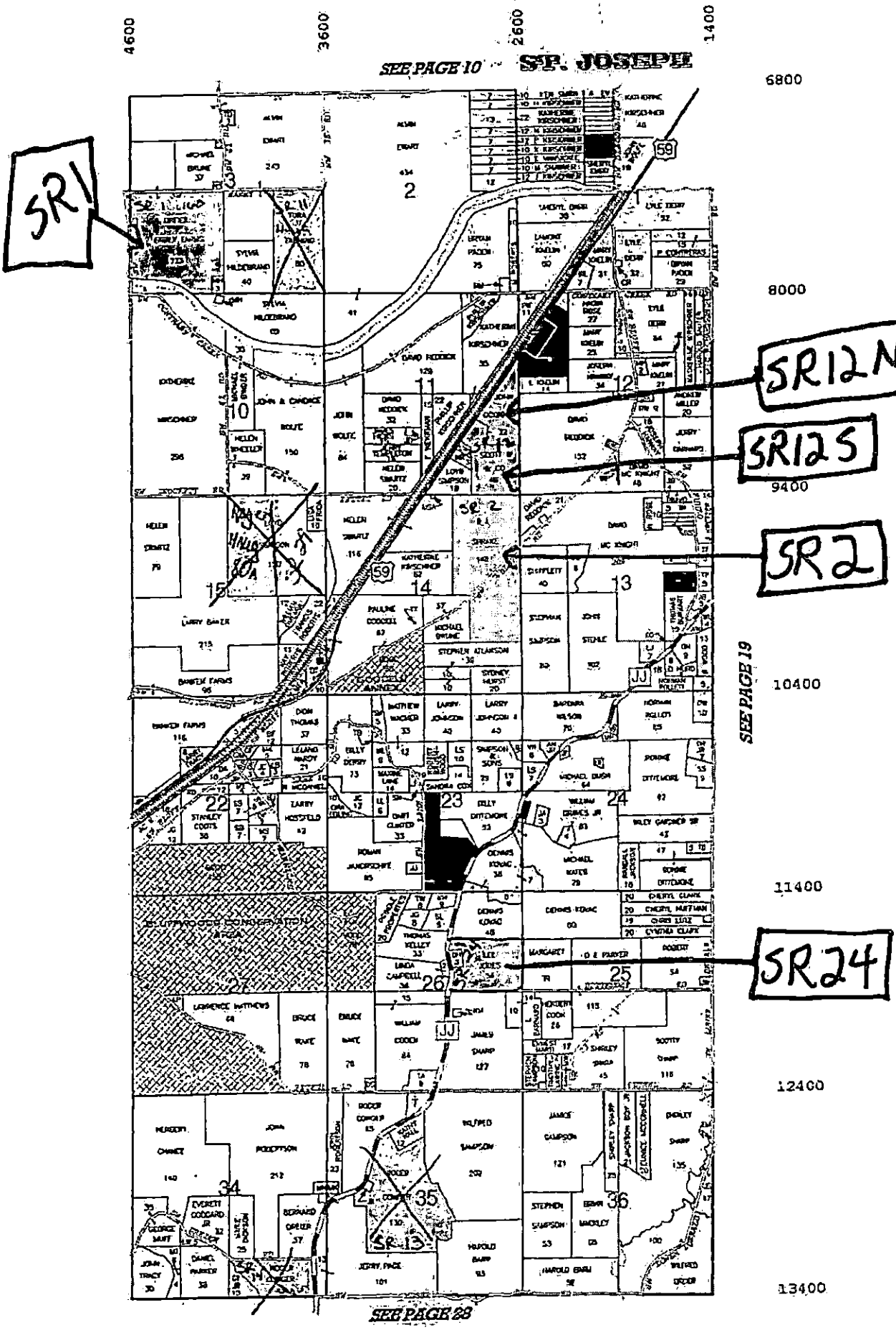
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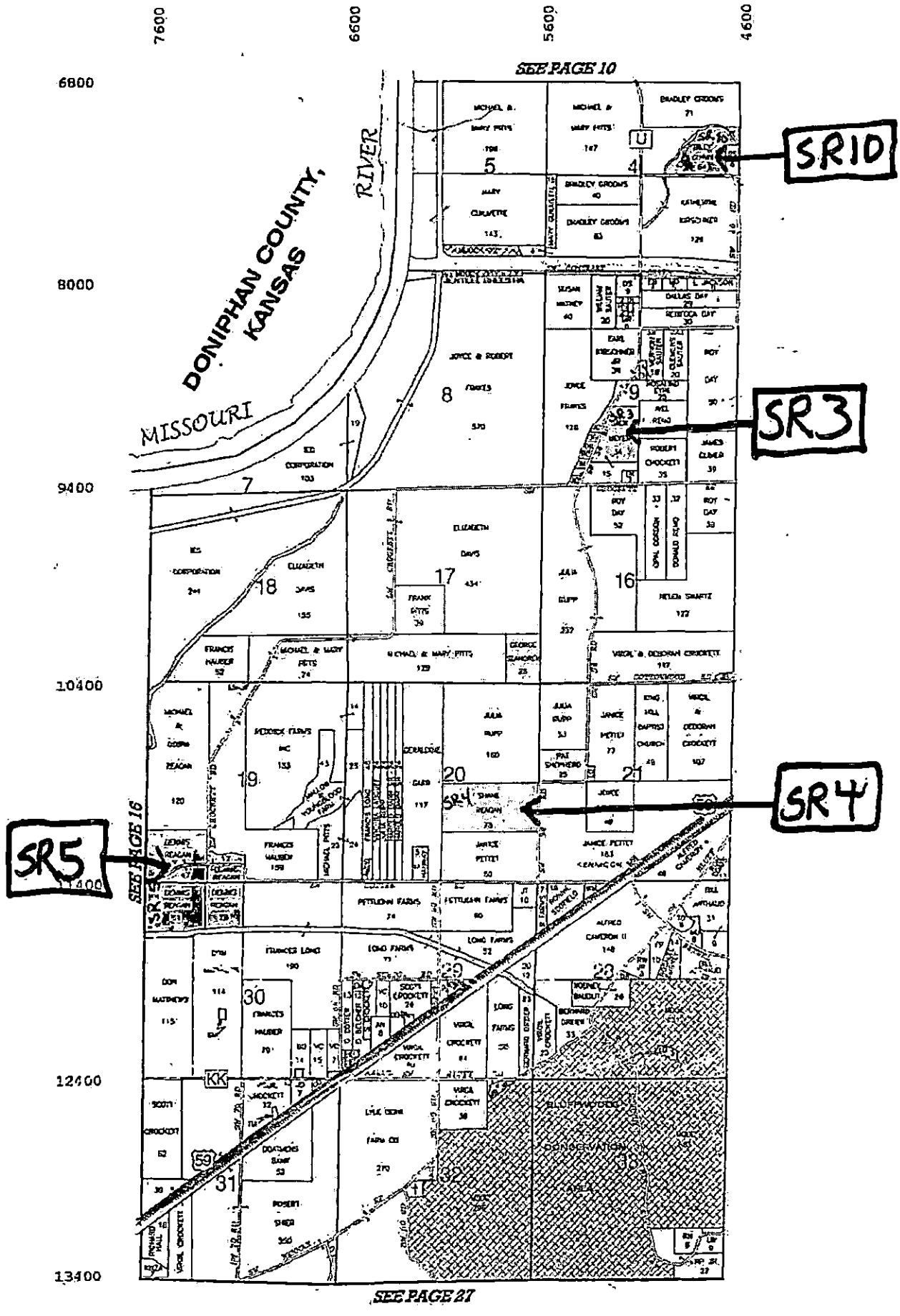
WAYNE POLITICAL TOWNSHIP
TOWNSHIP 56 N
RANGE 36 W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MISSOURI RIVER
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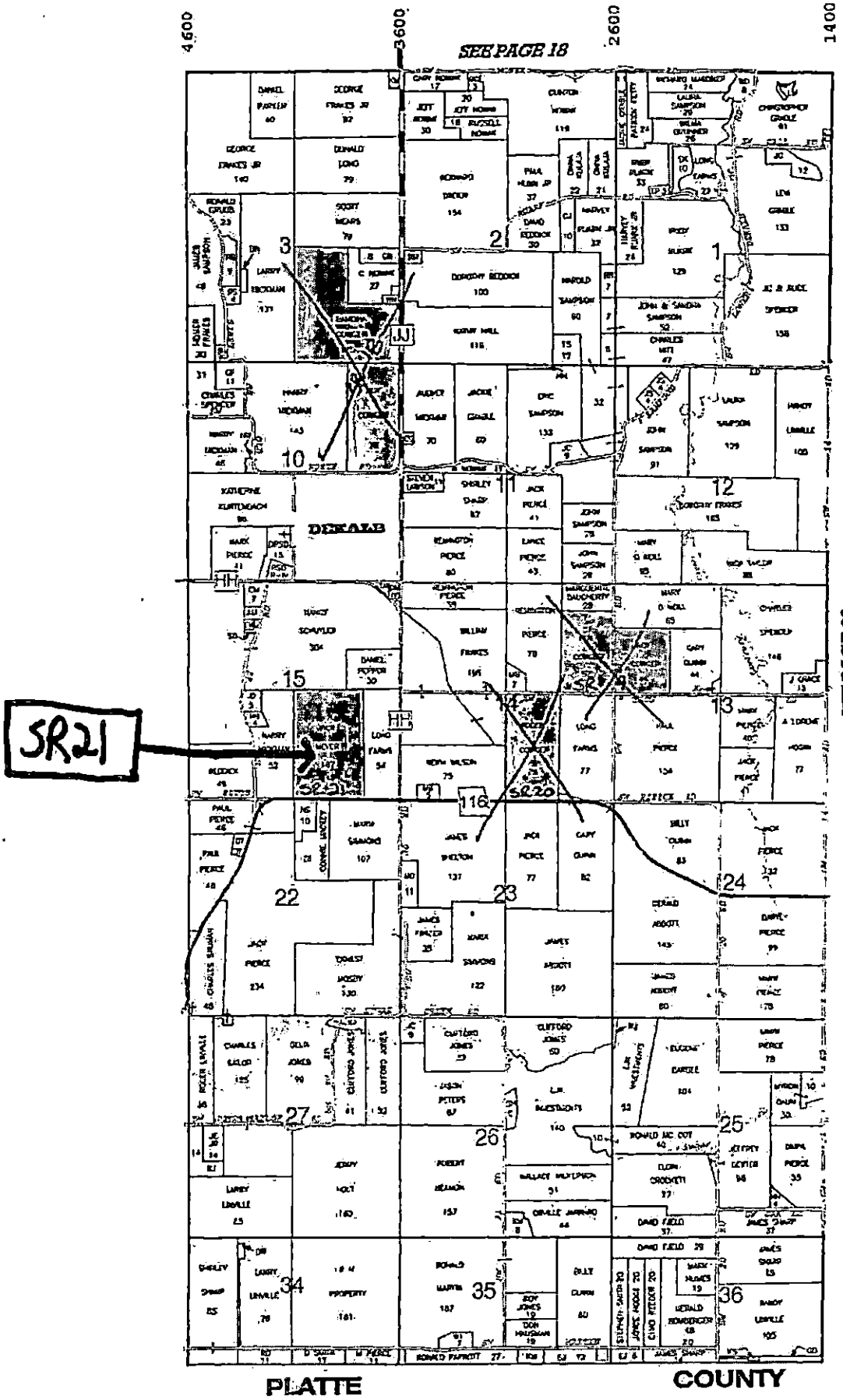
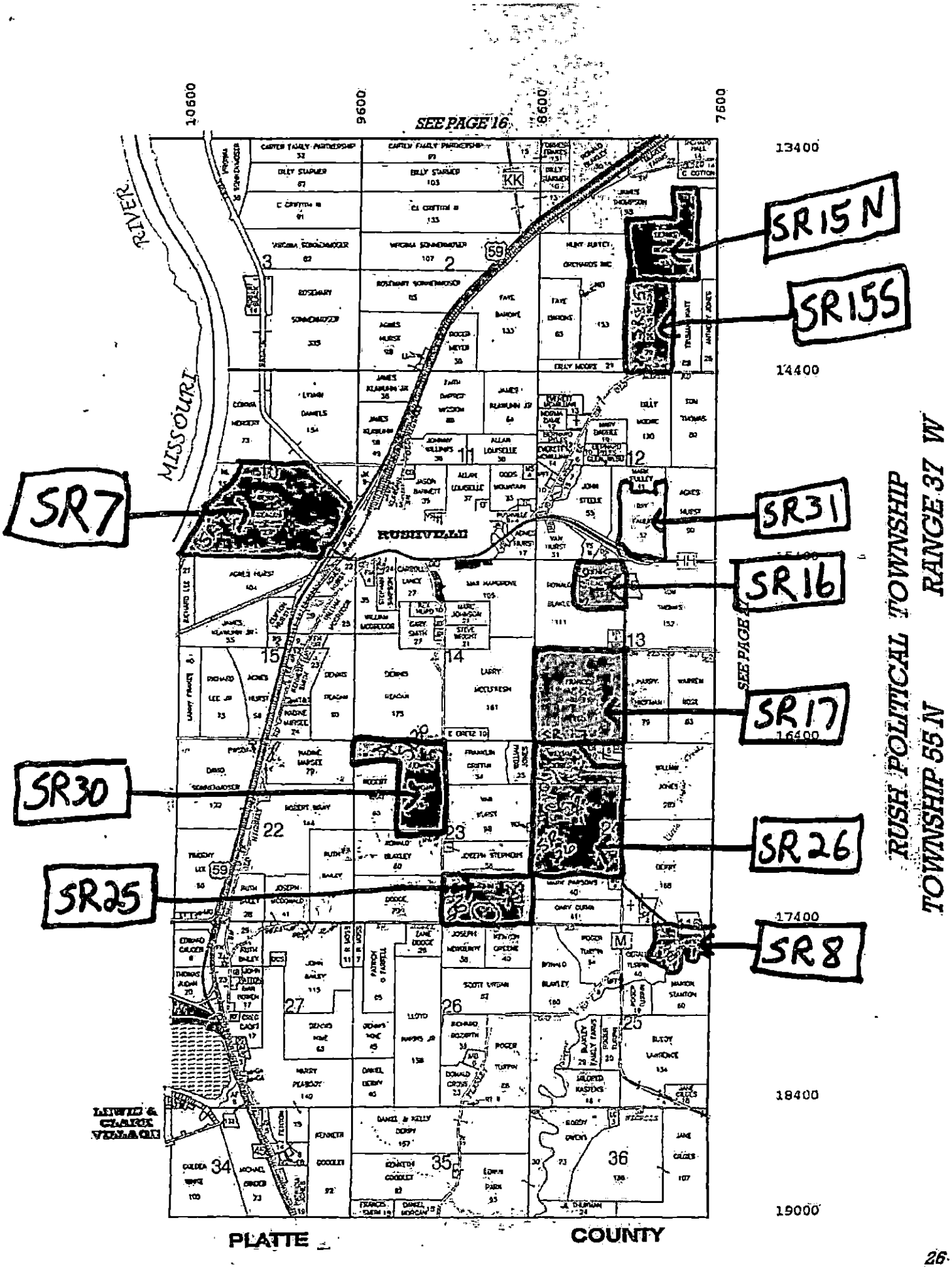
SR5



BLOOMINGTON POLITICAL TOWNSHIP
TOWNSHIP 55 N RANGE 36 W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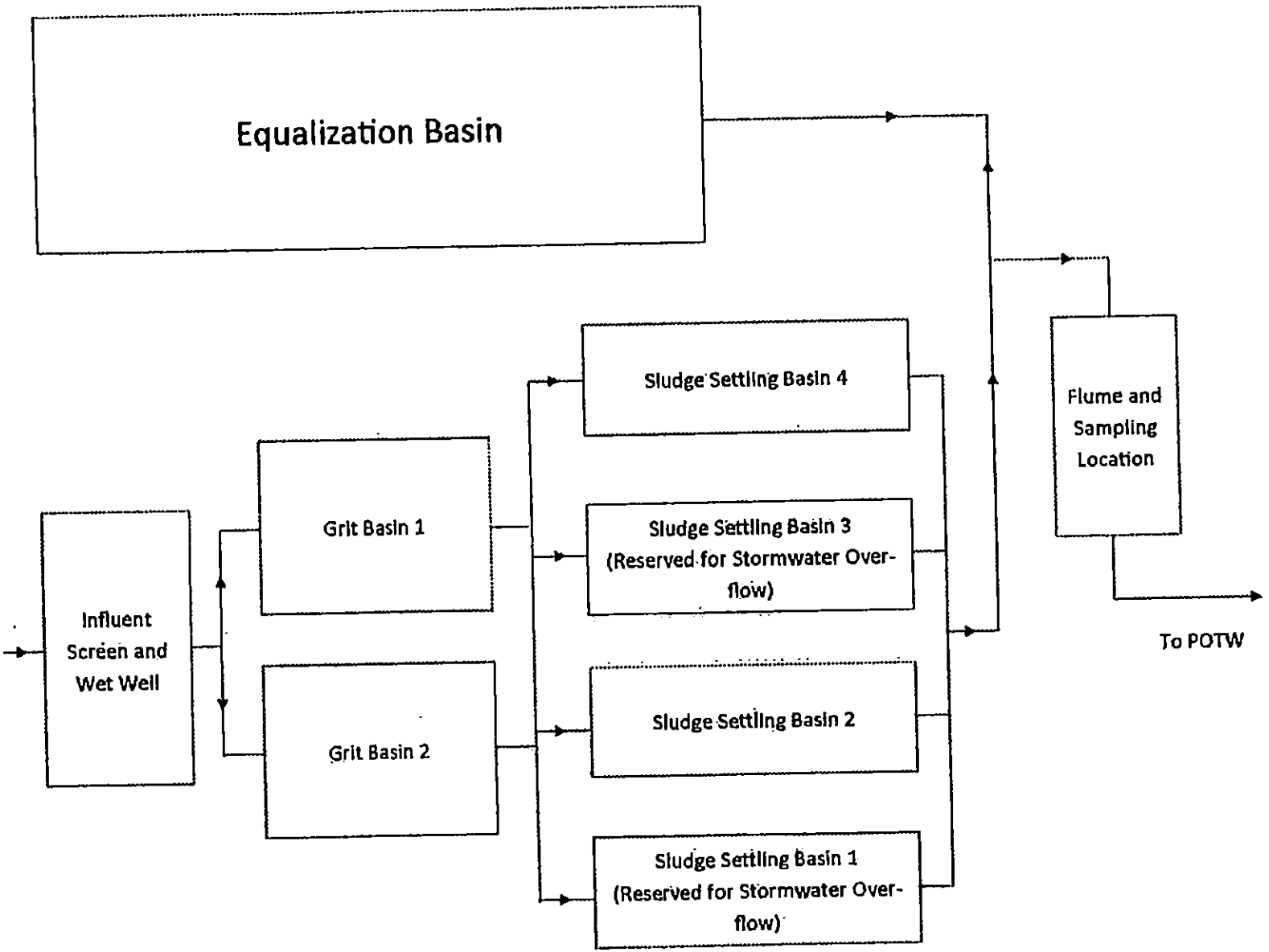
MISSOURI
RUSHVILLE
SR15N
SR15S
SR7
SR31
SR16
SR17
SR30
SR26
SR25
SR8
SEE PAGE 27
LEWIS & CLARK VILLAGE
PLATTE
COUNTY
RUSH POLITICAL TOWNSHIP
TOWNSHIP 55 N
RANGE 37 W

Flow Diagram for plant



Plant Available Nitrogen Calculator
Results Report
2/24/2017
Ver. 0.6

UNIVERSITY OF MISSOURI Extension
Commercial Agriculture Program

Operation Information

Operation Name: RP6
Manure Storage ID: Concrete Lagoon
Planner Name: Chad Coleman
Planner email: ssjisd@stjoewireless.com

Converted Manure Test Results - As-is Basis

Total Nitrogen:	16.5 lbs/Ton
Organic Nitrogen:	16.0 lbs/Ton
Ammonium Nitrogen:	0.5 lbs/Ton
Nitrate Nitrogen:	0.1 lbs/Ton
Phosphate:	9.7 lbs/Ton
Potash:	0.5 lbs/Ton
Moisture Content:	50.0 %

Example O+M Packet (Site Specific) for land application. Includes all necessary information necessary including PAN calculation, Max application rate, soil testing results, Sludge testing results, Geohydrologic Evaluation and land application requirements from current permit.

Manure Application Information

Other Solid Manure, no bedding
Manure Application Equipment: Solid spreader
Days to Incorporation: Not incorporated

Plant Available Nitrogen (PAN)

PAN: 6.5 lbs/Ton
Residual Nitrogen Fertilizer Value (RNFV): 3.7 lbs/Ton
Availability factors used:

- k11, organic N, year 1: 0.39
- k12, organic N, year 2: 0.23
- k2, ammonium N: 0.50
- Nitrate N: 1.0

Recommended Manure Application Rate

Target Fertilizer N Rate:	120 lbs/acre
Manure Application Rate:	18.4 Ton/acre
Phosphate Applied:	179 lbs/acre
Potash Applied:	9 lbs/acre

Max Application Rate (actual tons of New Material)

Year 2 residual fertilizer N value: 67.5 lbs/acre

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: Land Applied Sludge
Pace Project No.: 60236211

Sample: SOUTH CONCRETE LAGOON Lab ID: 60236211001 Collected: 01/18/17 10:00 Received: 01/18/17 10:27 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	ND	mg/kg	3.1	1	01/27/17 10:35	01/30/17 11:32	7440-38-2	
Cadmium	ND	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7440-43-9	
Chromium	13.4	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7440-47-3	
Iron	4190	mg/kg	15.4	1	01/27/17 10:35	01/30/17 11:32	7439-89-6	
Lead	7.1	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7439-92-1	
Nickel	50.0	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7440-02-0	
Potassium	403	mg/kg	154	1	01/27/17 10:35	01/30/17 11:32	7440-09-7	
Selenium	ND	mg/kg	4.6	1	01/27/17 10:35	01/30/17 11:32	7782-49-2	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.18	1	01/24/17 10:50	01/25/17 12:06	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	69.9	%	0.50	1		01/20/17 08:46		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	30.1	%	0.10	1		01/20/17 08:46		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A							
Chromium, Hexavalent	ND	mg/kg	33.2	5	01/23/17 08:47	01/24/17 09:26	18540-29-9	D3
9045 pH Soil	Analytical Method: EPA 9045							
pH at 25 Degrees C	7.4	Std. Units	0.10	1		01/30/17 15:20		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation							
Chromium, Trivalent	13.4	mg/kg		1		01/31/17 11:00	16065-83-1	
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	467	mg/kg	3.3	1		01/27/17 13:03	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	16500	mg/kg	808	5		01/20/17 11:22	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4							
Phosphorus	9740	mg/kg	314	10	01/30/17 10:00	01/30/17 14:59	7723-14-0	M1
9056 IC Anions	Analytical Method: EPA 9056 Preparation Method: EPA 9056							
Nitrate as N	67.4	mg/kg	33.2	10	01/24/17 08:00	01/25/17 11:42	14797-55-8	

REPORT OF LABORATORY ANALYSIS

University Extension
University of Missouri-Columbia

Soil Test Report

Soil Testing Laboratory
23 Mumford Hall, MU
Columbia, MO 65211
Phone: (573) 882-0623

or

Soil Testing Laboratory
P.O. Box 160
Portageville, MO 63873
Phone: (573)379-5431

http://www.soiltest.psu.missouri.edu/

Serial no. S97225-1	Lab no. C1703115
County Buchanan	Region 1
Submitted 2/13/2017	Processed 2/20/2017

Soil sample submitted by: Firm Number: Outlet:

FIELD INFORMATION			
Field ID RP6		Sample no 1	
Acres	Last Limed unknown	Irrigated No	
Last crop 16 CLOVER/CL-GRASS HAY		FSA Copy N	

This report is for:
S. ST JOE IND SEWER
1409 LOWER LAKE RD
ST JOSEPH MO 64504

SOIL TEST INFORMATION				RATING					
				Very Low	Low	Medium	High	Very High	Excess
pH_s	(salt pH)	7.0		**********					
Phosphorus	(P)	4	lbs/A	****					
Potassium	(K)	213	lbs/A			**********			
Calcium	(Ca)	7717	lbs/A					**********	
Magnesium	(Mg)	998	lbs/A					**********	
Sulfur	(SO_4-S)		ppm						
Zinc	(Zn)		ppm						
Manganese	(Mn)		ppm						
Iron	(Fe)		ppm						
Copper	(Cu)		ppm						

Organic matter	1.4 %	Neutralizable acidity	0.0 meq/100g	Cation Exch. Capacity	23.7 meq/100g
PH in water		Electrical Conductivity	Mmho/cm	Sodium (Na)	lbs/A
Nitrate (NO_3-N) Topsoil	0.5 ppm	Subsoil ppm	Sampling Depth Top	Inches	Subsoil Inches

NUTRIENT REQUIREMENTS

Cropping options	Yield goal	Pounds per acre N	P_2O_5	K_2O	Zn	S
16 CLOVER/CL-GRASS HAY	3 T/A	0	85	135		
18 COOL SEASON GRASS HAY	3 T/A	120	85	120		
26 WARM SEASON GRASS HAY	3 T/A	60	55	65		
103 CORN (GRAIN)	175 bu/A	240	145	90		

LIMESTONE SUGGESTIONS

Effective Neutralizing Material (ENM)	0
Effective magnesium (EMg)	0

Comments

---Some herbicide labels list restrictions based on soil pH in water. This sample has an estimated pH in water of 7.5 . Use this estimated pH in water as a guide. If you wish to have soil pH in water analyzed, contact your dealer or Extension specialist listed below.

---For hay production apply nitrogen just before spring growth begins (typically March). Consider splitting nitrogen applications if the rate exceeds 90 lbs N/acre, applying 60% in March and the balance in mid August.

---For warm season grass production, apply 60 lbs nitrogen per acre in early June.

---The soil profile nitrate-N is less than the expected N released (ENR) from organic matter. The N recommendation for CORN (GRAIN) was made using ENR from organic matter.

P Test is Very low, Should be around 45 #/A.

Regional Agronomy Specialist Wayne Flanary. Phone 660-446-3724 Signature

White-Farmer, Yellow-FSA, Blue-Firm, Pink-Extension MP 189 Revised 1/86 Columbia
University of Missouri, Lincoln University, U.S. Department of Agriculture & Local University Extension Councils Cooperating
Equal opportunity institutions

Missouri Department Of Natural Resources

Division of Geology and Land Survey
P.O. Box 250
Rolla, Missouri 65402-0250
Phone - 573.368.2161 Fax - 573.368.2111
E-mail - gspgeol@dnr.mo.gov

Project ID Number
LWE15100

County
DEKALB

Geohydrologic Evaluation of Liquid Waste Treatment Site

Project **SSJISD RP6** Quadrangle **MAYSVILLE**

Location **SW1/4,SW1/4** Section **30** Township **59 N** Range **30 W**

Additional Location Information

Latitude **39** Deg **53** Min **37.77** Sec Longitude **94** Deg **19** Min **0.262** Sec

Owner
Rob Post (816) 617-2448
1587 NE Hebro Rd Maysville MO 64469

Requestor So. St. Joseph Industrial Sewer District (816) 238-3959
1409 Lower Lake Rd. St. Joseph MO 64503

Previous Report ☑ Not Applicable
Date
Identification Number
Fiscal Year

Facility Type
- ○ Mechanical treatment plant
- ○ Recirculating filter bed
- ○ Earthen lagoon with discharge
- ○ Earthen holding basin
- ◉ Land application
- ○ Other type of facility

Type of Waste
- ○ Animal
- ○ Human
- ◉ Process or industrial
- ○ Leachate
- ○ Other waste type

Funding Source
- ◉ PPG
- ○ WWLF-SRF
- ○ Non-Point Source

Other Reviewed Data
- ○ Plans were submitted
- ○ Site was investigated by NRCS
- ○ Soil or geotechnical data were submitted

Date of Field Visit 04/28/2015 Stream Classification ○ Gaining ○ Losing ◉ No discharge

Overall Geologic Limitations
- ○ Slight
- ○ Moderate
- ○ Severe

Collapse Potential
- ◉ Not applicable
- ○ Slight
- ○ Moderate
- ○ Severe

Topography
- ◉ < 4%
- ◉ 4% to 8%
- ○ 8% to 15%
- ○ > 15%

Landscape Position
- ○ Broad uplands
- ○ Ridgetop
- ◉ Hillslope
- ○ Narrow ravine
- ○ Floodplain
- ○ Alluvial plain
- ○ Terrace
- ○ Sinkhole

Bedrock The uppermost bedrock at the site is alternating layers of Pennsylvanian-age shales, limestones, and sandstones. These units have low overall vertical permeability.

Surficial Materials Surficial materials at the site consist of low to high permeability clayey, sandy, silty glacial till.

Recommended Construction Procedures

- ○ Installation of clay pad
- ○ Diversion of subsurface flow
- ○ Rock excavation
- ○ Compaction
- ○ Artificial sealing
- ○ Limit excavation depth

Required Geologic Exploration

- ○ Missouri Clean Water Commission 10 CSR 20-8.220 Wastewater Treatment Ponds

Determine Overburden Properties

- ○ Partical size analysis
- ○ Standard Proctor density
- ○ Permeability coefficient for undisturbed sample
- ○ Atterburg limits
- ○ Overburden thickness
- ○ Permeability coefficient for remolded sample

Determine Hydrologic Conditions

- ○ Groundwater elevation
- ○ Direction of groundwater flow
- ○ 25-year flood level
- ○ 100-year flood level

Notify Geologist

- ○ Before exploration
- ○ During constructio
- ○ After construction
- ◉ Not necessary

Remarks

On April 28, 2015, a geologist with the Geological Survey Program (GSP) conducted a geohydrologic evaluation for a proposed 33-acre wastewater land application site, located approximately 5 miles northeast of Maysville, Missouri. The purpose of the site visit was to observe the geologic and hydrologic elements and determine the potential for groundwater contamination in the event of treatment failure.

According to nearby well logs, the uppermost bedrock consists of alternating layers of Pennsylvanian-age shales, limestones, and sandstones. No bedrock was observed onsite.

According to nearby well logs, surficial materials consist of approximately 125-157 feet of sandy, silty, and clayey glacial till. It was observed in the field that the uppermost surficial material at the proposed land application site consisted of sandy silt and sandy silty clay. These glacial till layers can exhibit low to high horizontal permeability, and, as a whole, exhibit low vertical permeability.

There are no known sinkholes, springs, or geologic structures within one mile of the proposed land application site.

Surface water runoff from this site flows southwest to a gaining unnamed tributary of West Fork Lost Creek.

In the event of land application treatment failure, the local, shallow groundwater and surface waters of the unnamed tributaries of West Fork Lost Creek may be adversely impacted.

To ensure the effectiveness of a wastewater treatment system which relies on land application and natural soils as a part of the wastewater treatment process, a performance monitoring requirement may be implemented. This requirement may include the design and implementation of a groundwater monitoring program and/or an engineered nutrient management plan which demonstrates compliance with the department's treatment standards. Please contact the MDNR Water Protection Program at 573-751-1300 for further information, or the local MDNR regional office. The location, phone number and address of the departments' regional offices can be found on the department's web site at http://www.dnr.mo.gov/regions/regions.htm.

This report is not a permit. Additional data may be required by the Department of Natural Resources prior to the issuance of a permit. This report is valid only at the above location and becomes invalid one year after the report date below.

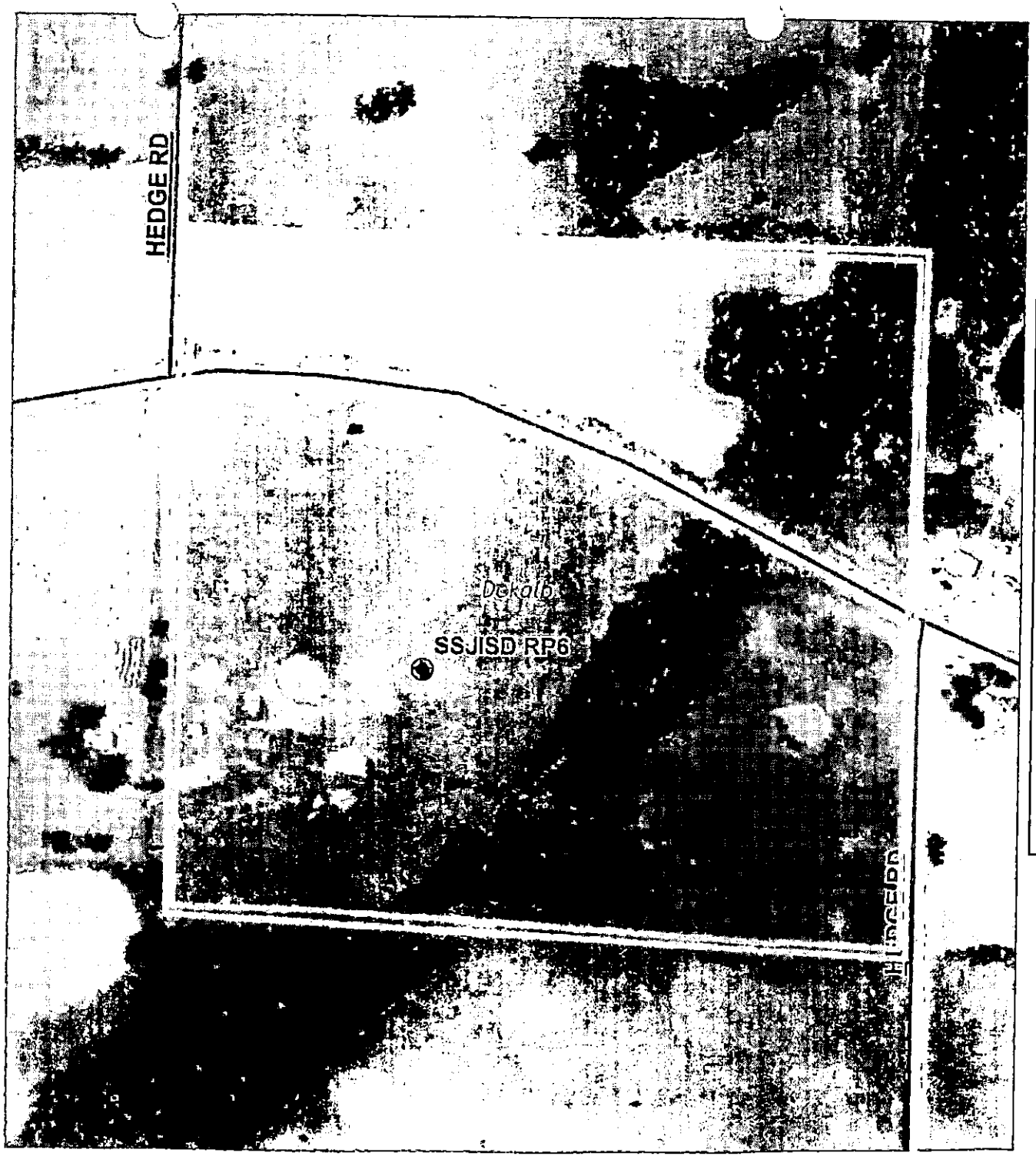
Report By: John Corley, Geologist

Report Date: 6/18/2015

CC KCRO, WPP-Greg Caldwell

STATE OF MISSOURI
CLEARA STONER
RG
2009026245
REGISTERED GEOLOGIST

6-19-2015



RP6

Legend

- Project Boundary
- Application area evaluated
- Road

N

Miles

0 0.025 0.05 0.075 0.1

C. SPECIAL CONDITIONS (continued)

j. The land application equipment shall be visually inspected daily during land application to check for equipment malfunctions and leaks. The application system shall be operated so as to provide uniform distribution of wastes over the entire land application site. Land application equipment shall be calibrated at least once annually.

18. Nutrient Management

Land application to fields listed in this permit shall use the following protocols to determine the amount of sludge to be applied.

a. If land application sites listed in this permit are also included as land application sites in another permit the wastewater and sludge applications from other sources shall be included in the application rates in paragraphs b and c of this section. Records of the amount and application rate of wastewater or sludge from other sources must be kept.

b. The fertilizer recommendation is the amount of nutrients required for a crop to produce the expected yield and shall be based on the following:
   1) The nutrient recommendation (nitrogen or phosphorus) for each crop. Recommendations can be found in University of Missouri Extension Guide WQ430 Crop/Nutrient Considerations for Biosolids or from publications by other land grant universities in adjoining states,
   1) Realistic yield goal for each crop. Yield goals should be based on actual crop yield records from multiple years for each field. Good judgment should be used to counteract unusually high or low yields. If a field's yield history is not available the USDA county wide average or other approved source may be used, and
   2) The most recent soil test.

c. Sludge applications shall be conducted according to one the following nutrient based management practices.
   Nitrogen based application. This can be used when soil test phosphorus (P) levels are 120 pounds or less per acre using Bray P-1 test method, or if the field has been assessed by Missouri Phosphorus Index (P-index) with a low or medium rating. The amount of sludge to be applied shall be adjusted annually based on the Plant Available Nitrogen (PAN) calculation using the current sludge nutrient analysis and the following:
   (a) For non-legume crops, the nitrogen fertilizer recommendation shall be adjusted to account for nitrogen credits from a preceding legume crop and residual nitrogen from the previous year's application. Nitrogen removal rates can be found in WQ430.
   (b) For legume crops, the nitrogen removal capacity of the legume crops should be based on the estimated nitrogen content of the harvested crop as defined in WQ430and a realistic yield goal. The estimated nitrogen content of the crop must be adjusted using nitrogen credits for residual nitrogen fertilizer from the previous year's application.

   PAN = [Ammonia Nitrogen x volatilization factor*] + [Organic Nitrogen x 0.2] + [Nitrate Nitrogen]*Volatilization factor is 0.7 for surface application and 1 for subsurface application.

   Phosphorus based application. This must be used when soil test phosphorus (P) levels are above 120 pounds per acre using Bray P-1 test method, or if the P-index rating is high. The amount of sludge to be applied shall be adjusted annually based the phosphorus content of the current sludge nutrient analysis and may be done applied according to one of the following methods;
   (a) The annual amount of phosphorus applied shall not exceed the planned crop's phosphorus removal estimate from WQ430, or from publications by other land grant universities in adjoining states or,
   (b) Multi-year phosphorus applications. Sludge applications can exceed the annual planned phosphate removal estimate for the crop when a multi-year phosphorus application is utilized. The multi-year application must comply with the following conditions:
      (i) the amount of sludge applied shall not exceed the nitrogen fertilizer recommendation or the estimated nitrogen removal capacity of the planned crop during the year of the application,
      (ii) the amount of phosphorus banked shall not exceed four years of the estimated crop removal rate for the planned crop rotation.
      (iii) the actual application rate shall not exceed the multi-year application rate
      (iv) no additional sludge applications shall occur until the applied phosphorus has been removed from the field by crop removal or harvest.

   No land application can occur if the P-index rating for a field is [redacted]

d. Other Pollutant Limitations and Loading Rates
   1) Oil and grease application shall not exceed 10,000 pounds oil/acre/year for subsurface injection or soil incorporation. For surface application to growing vegetation, the sludge shall not exceed 15% oil & grease content and shall not exceed 1,000 pounds oil/acre. Avoid heavy application of oil and grease within 30 days before planting of row crops.

C. SPECIAL CONDITIONS (continued)

19. Record Keeping

a. A daily land application log shall be prepared and kept on file at the permittee office location for each application site. In addition to the Sludge Land Application Operational Monitoring in Table A2, the log shall contain dates of application, weather condition (sunny, overcast, raining, below freezing etc...), soil moisture condition.
b. A record of monthly visual storage basin inspections, maintenance, and repairs shall be maintained.
c. A record of land application equipment inspections and calibrations, and field perimeter inspections shall be maintained.
d. A record of all PAN calculations.
e. All records and monitoring results shall be maintained for at least five years and shall be made available to the department upon request.

[redacted]

An annual report is required in addition to other reporting requirements under Section A of this permit. The annual report shall be submitted by January 28 of each year. The report shall include, but is not limited to, a summary of the following:

[redacted]

b. An annual summary for each field used for land application showing the total amount of sludge applied, number of acres used, and application rate (gal or tons/acre)
c. The report shall include any soil test results taken during the reporting year.
d. Narrative summary of any problems or deficiencies identified, corrective action taken and improvements planned.
e. All permit applications, reports required by the permit, or information requested by the Department shall be signed as required by 10 CSR 20-6.010.

21. A permit modification shall be required before placing any wastewater, stormwater, or sludge in Sludge lagoons #1 - #4, grit lagoon #2 listed under Permitted Feature #001. The integrity of the lagoon liner shall be evaluated by a Professional Engineer registered in Missouri for compliance with 10 CSR 20-8.

[redacted]

1. The permittee shall evaluate and enhance the current groundwater monitoring program to ensure that it is capable of determining if the lagoons have an impact on groundwater quality. The monitoring system must be capable of comparing up-gradient to down-gradient water quality in the first continuous water-bearing zone beneath the impoundment. The monitoring system must be based upon a thorough hydrogeologic characterization of the lagoon area that determines if the current monitoring wells are placed in the appropriate hydrostratigraphic unit to monitor. Any hydrogeologic characterization conducted for the design of the groundwater monitoring program shall be approved by the department's Geological Survey Program and must be conducted under the guidance of a geologist registered in the State of Missouri. This data will be used to determine how much affect, if any, the seepage from the facilities lagoons is having on iron concentration in the groundwater.

[redacted]

2. The condition of the five existing groundwater monitoring wells shall be evaluated for a build-up of fine grained material and structural integrity through redevelopment or down-hole investigative process. If wells are found to be in poor condition new groundwater monitoring wells shall be installed.

[redacted]

4. The remaining sludge in sludge lagoons #1 and #3 and grit lagoon #2 shall be removed and land applied or taken to a permitted landfill within five years of the effective date of this permit.

5. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from effective date. Please submit progress reports to the Missouri Department of Natural Resources, Kansas City Regional Office, 500 NE Colbern Road, Lee's Summit, MO 64086-4710 and Water Protection Program, P.O. Box 176, Jefferson City, MO 65102.

C. SPECIAL CONDITIONS (continued)

[redacted]

a. This special condition does not apply to fertilizer products that are exempted under the Missouri Clean Water Law and regulations, 10 CSR 20-6.015(3)(B)8.

b. Land Application Sites. This permit authorizes land application of sludge to sites within a fifty (50) mile radius of the facility. Land application of sludge is authorized by the permittee to those sites listed in the "Facility Description" of this permit. Land application of sludge by a contract hauler to sites owned, rented, or leased by the permittee must also be listed in the "Facility Description" unless the contract hauler is permitted. Land applications by contract hauler to sites that are not owned, rented, or leased by the permittee are not required to be listed in this permit. Only those pollutants listed in the permit application may be land applied. Permittee requests for additional sites must follow permit modification procedures prior to land application. Additionally, the O&M Manual shall include all additional land application site(s) listed in this permit.

c. Storage Basins. The minimum and maximum operating water levels for the storage basin(s) shall be clearly marked. Each storage basin shall be operated so that the maximum water elevation does not exceed two feet below the overflow. Storage basins shall be inspected monthly for structural integrity and leaks.

d. Public Access Restrictions. This permit does not authorize application of sludge to areas to public use areas.

e. Soil Monitoring.

1) Composite soil samples shall be collected every five years from each field listed in this permit where land application has occurred in the last 12 months or will occur in the next 12 months. No land application shall occur on fields listed in this permit if soil sample results are more the five (5) years old.

2) Soil sampling shall be in accordance with University of Missouri (MU) Guides G9215, Soil Sampling Pastures or G9217, Soil Sampling Hayfields and Row Crops or other methods approved by the department. The recommendation of one composite sample per 20 acres in G9215 and G9217 is not required by this permit, however, this is a useful tool to identify soil fertility fluctuations in larger fields due to past management practices, soil type, and variability of crop yields. There shall be at least one composite sample per 80 acres.

3) Testing shall conform to Recommended Chemical Soil Testing Procedures for North Central Region (North Central Regional Research Publication 221 Revised), or Soil Testing in Missouri (MU Extension Guide EC923), or other methods approved by the department.

4) A summary of the soil test results for each field sampled during the reporting period shall be submitted with the annual report.

[redacted]

a. Sludge land applications shall not exceed agronomic rates to ensure agricultural use of nutrients and prevent contamination of surface and groundwater. The agronomic rate is the amount of wastewater and/or sludge applied to a field to supply the amount of nutrients to meet to meet the crops fertilizer needs for that year.

b. No land application shall occur when the soil is frozen, snow covered, or saturated. There shall be no application during a precipitation event or if a precipitation event that is likely to create runoff is forecasted to occur within 24 hours of a planned application.

c. Land application shall occur only during daylight hours.

[redacted] Slope limitation for sludge application sites are as follows;

1) Slopes of 6 percent or less there are no limitations.

2) Slopes of 7 to 12 percent, biosolids when may be applied with no limitation when soil conservation practices are used to meet the minimum erosion levels.

3) Slopes greater than 12, apply biosolids only when grass vegetation is maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

e. Land application shall occur only during daylight hours.

f. The perimeter of land application fields where runoff is likely to occur shall be checked daily during land application to check for runoff.

[redacted] Setback distances from sensitive features. There shall be no land application within:

1) 300 feet of any well, sinkhole, losing stream, or cave entrance, water supply stream intake or impoundment;;

2) 150 feet of an occupied residence, public building, or public use area;

3) 50 feet of gaining perennial or intermittent stream, public or privately owned pond or lake;

4) 50 feet of property line or public road.

h. Sludge should not be applied to fields used to grow food crops for human consumption to be eaten raw, such as leafed vegetables or root crops.

[redacted] Sludge shall not be applied to within thirty (30) days of grazing or forage harvesting. The recommendations of the State Milk Board shall be followed.

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Land applied Sludge testing Results - 2017

January 31, 2017

Mr. Chad Coleman
South St. Joe Industrial Sewer
1409 Lower Lake Road
Saint Joseph, MO 64504

RE: Project: Land Applied Sludge
Pace Project No.: 60236211

Dear Mr. Coleman:
Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, LLC
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(913)599-5665

CERTIFICATIONS

Project: Land Applied Sludge
Pace Project No.: 60236211

Indiana Certification IDs
7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 003971
Indiana Certification #: C-49-06
Kansas/NELAP Certification #:E-10177
Kentucky UST Certification #: 80226
Kentucky WW Certification #:98019
Ohio VAP Certification #: CL-0065
Oklahoma Certification #: 2016-075
Texas Certification #: T104704355-16-10
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: Land Applied Sludge
Pace Project No.: 60236211

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60236211001	SOUTH CONCRETE LAGOON	Solid	01/18/17 10:00	01/18/17 10:27
60236211002	NW LAGOON	Solid	01/18/17 10:10	01/18/17 10:27

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SAMPLE ANALYTE COUNT

Project: Land Applied Sludge
Pace Project No.: 60236211

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60236211001	SOUTH CONCRETE LAGOON	EPA 6010	NDJ	8	PASI-K
		EPA 7471	TDS	1	PASI-K
		ASTM D2974	JSS	1	PASI-K
		SM 2540G	JSS	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		EPA 9045	AGO	1	PASI-K
		Trivalent Chromium Calculation	TJG	1	PASI-K
		EPA 350.1	LDB	1	PASI-K
		EPA 351.2	RAB	1	PASI-K
		EPA 365.4	LDB	1	PASI-K
		EPA 9056	OL	1	PASI-K
60236211002	NW LAGOON	EPA 6010	NDJ	8	PASI-K
		EPA 7471	TDS	1	PASI-K
		ASTM D2974	JSS	1	PASI-K
		SM 2540G	JSS	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		EPA 9045	AGO	1	PASI-K
		Trivalent Chromium Calculation	TJG	1	PASI-K
		EPA 350.1	LDB	1	PASI-K
		EPA 351.2	RAB	1	PASI-K
		EPA 365.4	LDB	1	PASI-K
		EPA 9056	OL	1	PASI-K

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ANALYTICAL RESULTS

Project: Land Applied Sludge
Pace Project No.: 60236211

Sample: SOUTH CONCRETE LAGOON **Lab ID: 60236211001** Collected: 01/18/17 10:00 Received: 01/18/17 10:27 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	ND	mg/kg	3.1	1	01/27/17 10:35	01/30/17 11:32	7440-38-2	
Cadmium	ND	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7440-43-9	
Chromium	13.4	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7440-47-3	
Iron	4190	mg/kg	15.4	1	01/27/17 10:35	01/30/17 11:32	7439-89-6	
Lead	7.1	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7439-92-1	
Nickel	50.0	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:32	7440-02-0	
Potassium	403	mg/kg	154	1	01/27/17 10:35	01/30/17 11:32	7440-09-7	
Selenium	ND	mg/kg	4.6	1	01/27/17 10:35	01/30/17 11:32	7782-49-2	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.16	1	01/24/17 10:50	01/25/17 12:06	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	69.9	%	0.50	1		01/20/17 08:46		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	30.1	%	0.10	1		01/20/17 08:46		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A							
Chromium, Hexavalent	ND	mg/kg	33.2	5	01/23/17 08:47	01/24/17 09:26	18540-29-9	D3
9045 pH Soil	Analytical Method: EPA 9045							
pH at 25 Degrees C	7.4	Std. Units	0.10	1		01/30/17 15:20		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation							
Chromium, Trivalent	13.4	mg/kg		1		01/31/17 11:00	16065-83-1	
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	467	mg/kg	3.3	1		01/27/17 13:03	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	16500	mg/kg	808	5		01/20/17 11:22	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4							
Phosphorus	9740	mg/kg	314	10	01/30/17 10:00	01/30/17 14:59	7723-14-0	M1
9056 IC Anions	Analytical Method: EPA 9056 Preparation Method: EPA 9056							
Nitrate as N	67.4	mg/kg	33.2	10	01/24/17 08:00	01/25/17 11:42	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Land Applied Sludge
Pace Project No.: 60236211

Sample: NW LAGOON **Lab ID: 60236211002** Collected: 01/18/17 10:10 Received: 01/18/17 10:27 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**11.5**	mg/kg	1.5	1	01/27/17 10:35	01/30/17 11:34	7440-38-2	
Cadmium	**3.1**	mg/kg	0.76	1	01/27/17 10:35	01/30/17 11:34	7440-43-9	
Chromium	**52.4**	mg/kg	0.76	1	01/27/17 10:35	01/30/17 11:34	7440-47-3	
Iron	**25800**	mg/kg	7.6	1	01/27/17 10:35	01/30/17 11:34	7439-89-6	
Lead	**241**	mg/kg	0.76	1	01/27/17 10:35	01/30/17 11:34	7439-92-1	
Nickel	**70.7**	mg/kg	0.76	1	01/27/17 10:35	01/30/17 11:34	7440-02-0	
Potassium	**1900**	mg/kg	76.4	1	01/27/17 10:35	01/30/17 11:34	7440-09-7	
Selenium	ND	mg/kg	2.3	1	01/27/17 10:35	01/30/17 11:34	7782-49-2	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**4.0**	mg/kg	0.84	10	01/24/17 10:50	01/25/17 13:19	7439-97-6	M1,R1
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**42.6**	%	0.50	1		01/20/17 08:48		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	**57.4**	%	0.10	1		01/20/17 08:48		
7196 Chromium, Hexavalent	Analytical Method: EPA 7196A Preparation Method: EPA 3060A							
Chromium, Hexavalent	ND	mg/kg	34.8	10	01/23/17 08:47	01/24/17 09:26	18540-29-9	D3
9045 pH Soil	Analytical Method: EPA 9045							
pH at 25 Degrees C	**6.8**	Std. Units	0.10	1		01/30/17 15:20		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation							
Chromium, Trivalent	**52.4**	mg/kg		1		01/31/17 11:00	16065-83-1	
350.1 Ammonia	Analytical Method: EPA 350.1							
Nitrogen, Ammonia	ND	mg/kg	1.7	1		01/27/17 13:06	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	**14300**	mg/kg	435	5		01/20/17 11:25	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4							
Phosphorus	**24600**	mg/kg	738	50	01/30/17 10:00	01/30/17 15:07	7723-14-0	
9056 IC Anions	Analytical Method: EPA 9056 Preparation Method: EPA 9056							
Nitrate as N	**456**	mg/kg	17.4	10	01/24/17 08:00	01/25/17 11:56	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 462954
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Associated Lab Samples: 60236211001

METHOD BLANK: 1895489 Matrix: Solid
Associated Lab Samples: 60236211001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.050	01/25/17 11:00	

LABORATORY CONTROL SAMPLE: 1895490

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.50	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895491 1895492

Parameter	Units	60235738001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.53	.56	0.54	0.57	100	99	75-125	7	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 462955
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Associated Lab Samples: 60236211002

METHOD BLANK: 1895493
Matrix: Solid
Associated Lab Samples: 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.050	01/25/17 11:02	

LABORATORY CONTROL SAMPLE: 1895494

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.50	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895495 1895496

Parameter	Units	60236211002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	4.0	.64	.87	3.3	4.3	-117	25	75-125	26	20	M1,R1

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 463488 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 60236211001, 60236211002

METHOD BLANK: 1897382 Matrix: Solid
Associated Lab Samples: 60236211001, 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	01/30/17 11:28	
Cadmium	mg/kg	ND	0.50	01/30/17 11:28	
Chromium	mg/kg	ND	0.50	01/30/17 11:28	
Iron	mg/kg	6.7	5.0	01/30/17 11:28	
Lead	mg/kg	ND	0.50	01/30/17 11:28	
Nickel	mg/kg	1.4	0.50	01/30/17 14:53	
Potassium	mg/kg	ND	50.0	01/30/17 11:28	
Selenium	mg/kg	ND	1.5	01/30/17 11:28	

LABORATORY CONTROL SAMPLE: 1897383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	100	95.2	95	80-120	
Cadmium	mg/kg	100	97.6	98	80-120	
Chromium	mg/kg	100	103	103	80-120	
Iron	mg/kg	1000	977	98	80-120	
Lead	mg/kg	100	101	101	80-120	
Nickel	mg/kg	100	101	101	80-120	
Potassium	mg/kg	1000	956	96	80-120	
Selenium	mg/kg	100	96.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1897384 1897385

Parameter	Units	60236310002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	5.0	104	92.7	102	91.7	93	93	75-125	11	20	
Cadmium	mg/kg	ND	104	92.7	101	90.1	97	97	75-125	12	20	
Chromium	mg/kg	16.2	104	92.7	122	104	101	95	75-125	15	20	
Iron	mg/kg	16100	1040	927	18400	16900	229	94	75-125	9	20	M1
Lead	mg/kg	9.3	104	92.7	105	92.6	92	90	75-125	12	20	
Nickel	mg/kg	13.0	104	92.7	111	93.9	94	87	75-125	17	20	
Potassium	mg/kg	2440	1040	927	4240	3990	173	167	75-125	6	20	M1
Selenium	mg/kg	ND	104	92.7	98.5	87.1	95	94	75-125	12	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 462530
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60236211001, 60236211002

SAMPLE DUPLICATE: 1893608

Parameter	Units	60236232001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	75.9	76.3	1	20	

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 462528 Analysis Method: SM 2540G
QC Batch Method: SM 2540G Analysis Description: 2540G Total Solids
Associated Lab Samples: 60236211001, 60236211002

METHOD BLANK: 1893598 Matrix: Solid
Associated Lab Samples: 60236211001, 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	ND	0.10	01/20/17 08:49	

SAMPLE DUPLICATE: 1893599

Parameter	Units	60236232001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	24.1	23.7	2	8	

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 370889
QC Batch Method: EPA 3060A
Analysis Method: EPA 7196A
Analysis Description: 7196 Chromium, Hexavalent
Associated Lab Samples: 60236211001, 60236211002

METHOD BLANK: 1712579 Matrix: Solid
Associated Lab Samples: 60236211001, 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/kg	ND	2.0	01/24/17 08:41	

LABORATORY CONTROL SAMPLE: 1712580

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	989	896	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1712581 1712582

Parameter	Units	10375939001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/kg	ND	1780	1810	989	1390	55	76	75-125	33	20	M0,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1712583 1712584

Parameter	Units	10375939001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/kg	ND	70.8	70.8	18.0	8.6J	25	12	75-125		20	M0

SAMPLE DUPLICATE: 1712585

Parameter	Units	60236211002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	mg/kg	ND	ND		20	D3

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REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 463730
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 60236211001, 60236211002

SAMPLE DUPLICATE: 1898378

Parameter	Units	10376156001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	4.1	4.1	1	3	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 463299 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 60236211001, 60236211002

METHOD BLANK: 1896528 Matrix: Solid
Associated Lab Samples: 60236211001, 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	1.0	01/27/17 12:56	

LABORATORY CONTROL SAMPLE: 1896529

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	50	53.5	107	90-110	

MATRIX SPIKE SAMPLE: 1896530

Parameter	Units	60236146001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	3150	2150	4280	53	80-120	M1

SAMPLE DUPLICATE: 1896531

Parameter	Units	60236211001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/kg	467	469	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 462515 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 60236211001, 60236211002

METHOD BLANK: 1893490 Matrix: Solid
Associated Lab Samples: 60236211001, 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	ND	50.0	01/20/17 10:49	

LABORATORY CONTROL SAMPLE: 1893491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	500	512	102	90-110	

MATRIX SPIKE SAMPLE: 1893492

Parameter	Units	60236146001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	37500	10900	48200	99	90-110	

SAMPLE DUPLICATE: 1893493

Parameter	Units	60236211001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	16500	15200	9	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 463669
QC Batch Method: EPA 365.4
Analysis Method: EPA 365.4
Analysis Description: 365.4 Total Phosphorus
Associated Lab Samples: 60236211001, 60236211002

METHOD BLANK: 1898188 Matrix: Solid
Associated Lab Samples: 60236211001, 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/kg	ND	10.0	01/30/17 14:49	

LABORATORY CONTROL SAMPLE: 1898189

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	200	192	96	90-110	

MATRIX SPIKE SAMPLE: 1898190

Parameter	Units	60236211001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	9740	638	13600	607	90-110	M1

SAMPLE DUPLICATE: 1898191

Parameter	Units	60236294001 Result	Dup Result	RPD	Max RPD	Qualifiers
Phosphorus	mg/kg	9950	9640	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Land Applied Sludge
Pace Project No.: 60236211

QC Batch: 462941 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60236211001, 60236211002

METHOD BLANK: 1895445 Matrix: Solid
Associated Lab Samples: 60236211001, 60236211002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/kg	ND	10.0	01/25/17 09:09	

LABORATORY CONTROL SAMPLE: 1895446

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/kg	200	205	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895448 1895449

Parameter	Units	60236232001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/kg	ND	8310	8310	8550	8510	103	102	80-120	0	15	

SAMPLE DUPLICATE: 1895447

Parameter	Units	60236146001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrate as N	mg/kg	74.7	74.8	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd,
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: Land Applied Sludge
Pace Project No.: 60236211

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-I	Pace Analytical Services - Indianapolis
PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Land Applied Sludge
Pace Project No.: 60236211

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236211001	SOUTH CONCRETE LAGOON	EPA 3050	463488	EPA 6010	463521
60236211002	NW LAGOON	EPA 3050	463488	EPA 6010	463521
60236211001	SOUTH CONCRETE LAGOON	EPA 7471	462954	EPA 7471	463024
60236211002	NW LAGOON	EPA 7471	462955	EPA 7471	463026
60236211001	SOUTH CONCRETE LAGOON	ASTM D2974	462530		
60236211002	NW LAGOON	ASTM D2974	462530		
60236211001	SOUTH CONCRETE LAGOON	SM 2540G	462528		
60236211002	NW LAGOON	SM 2540G	462528		
60236211001	SOUTH CONCRETE LAGOON	EPA 3060A	370889	EPA 7196A	371064
60236211002	NW LAGOON	EPA 3060A	370889	EPA 7196A	371064
60236211001	SOUTH CONCRETE LAGOON	EPA 9045	463730		
60236211002	NW LAGOON	EPA 9045	463730		
60236211001	SOUTH CONCRETE LAGOON	Trivalent Chromium Calculation	463863		
60236211002	NW LAGOON	Trivalent Chromium Calculation	463863		
60236211001	SOUTH CONCRETE LAGOON	EPA 350.1	463299		
60236211002	NW LAGOON	EPA 350.1	463299		
60236211001	SOUTH CONCRETE LAGOON	EPA 351.2	462515		
60236211002	NW LAGOON	EPA 351.2	462515		
60236211001	SOUTH CONCRETE LAGOON	EPA 365.4	463669	EPA 365.4	463679
60236211002	NW LAGOON	EPA 365.4	463669	EPA 365.4	463679
60236211001	SOUTH CONCRETE LAGOON	EPA 9056	462941	EPA 9056	462943
60236211002	NW LAGOON	EPA 9056	462941	EPA 9056	462943

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60236211

60236211

Client Name: So St. Joe I.S.

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☑ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: CF +1.5 CF -0.5 T-266 / T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read -0.7 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 0.8

Date and initials of person examining contents: 1/18/17

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: SL	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	
Cyanide water sample checks: ☑N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 1-18-17

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	South St Joe Industrial Sewer	Report To:	Chad Coleman	Attention:	Chad Coleman
Address:	1409 Lower Lake Road	Copy To:		Company Name:	South St Joe Industrial Sewer
	St Joseph, MO 64504			Address:	
Email To:	ssjisd@stjoewireless.net	Purchase Order No.:		Pace Quote Reference:	
Phone:	816-238-3959 Fax: 816-238-2750	Project Name:	Land Applied Sludge	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:	STANDARD	Project Number:		Pace Profile #:	303 Line 6

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Missouri

Requested Analysis Filtered (Y/N)

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (use valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Total Metals*/Total Hg	pH	Ammonia/Nitrate/TKN	Total Phosphorus	Total Solids/Dry Weight	Trivalent Chromium	Hexavalent Chromium**	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	South Concrete Lagoon	SL				1-18-17	10 AM		3	3									X	X	X	X	X	X	X		6023624 001
2	NW Lagoon	SL				1-18-17	10 AM		3	3									X	X	X	X	X	X	X		002
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*As-Cd-Cr-Fe-Pb-Ni-K-Se	Tiffany Edson	1-18-17	11 AM	PKSI	1/18/17	1027	0.8	Y	Y	Y
**Subcontract to Pace-Indy (7196)							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Tiffany Edson

SIGNATURE of SAMPLER: Tiffany Edson DATE Signed (MM/DD/YY): 1-18-17

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 60236211 **Workorder Name:** Land Applied Sludge **Owner Received Date:** 1/18/2017 **Results Requested By:** 1/31/2017

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Indianapolis 7726 Moller Road Indianapolis, IN 46268 Phone (317)875-5894

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpres	7196 Hexavalent Chromium	Requested Analysis	LAB USE ONLY
1	SOUTH CONCRETE LAGOON	PS	1/18/2017 10:00	60236211001	Solid	1	X		001
2	NW LAGOON	PS	1/18/2017 10:10	60236211002	Solid	1	X		002
3									
4									
5									

S0163191

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature]	1/18/17 1700	Fedex	
2	Fedex		[signature]	1-19-17 0858
3				

Comments:

Cooler Temperature on Receipt 0.8 °C **Custody Seal** (X) or N **Received on Ice** (X) or N **Samples Intact** (X) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Sample Condition Upon Receipt

Pace Analytical

Client Name: Pace-KS

Project # 50163191

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 7044 6658 6844

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals Intact: ☑ yes ☐ no

Date/Time 5035A kits placed in freezer: _____

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer: 1 2 3 4 5 6 A B C D E F

Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature (Initial/Corrected): 0.8 / 0.8

Ice Visible in Sample Containers: ☐ yes ☒ no

Temp should be above freezing to 6°C

Date and initials of person examining contents: JLK 1-19-17

			Comments:
Are samples from West Virginia? Document any containers out of temp.	☐Yes	☑No	1.
Chain of Custody Present:	☑Yes	☐No	2.
Chain of Custody Filled Out:	☑Yes	☐No	3.
Chain of Custody Relinquished:	☑Yes	☐No	4.
Sampler Name & Signature on COC:	☐Yes	☑No	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	6.
Rush Turn Around Time Requested:	☐Yes	☑No	7.
Containers Intact:	☑Yes	☐No	8.
Sample Labels match COC: -Includes date/time/ID/Analysis	☑Yes	☐No	9.
All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, TOC, O&G	☐Yes	☐No ☑N/A	10 (Circle) HNO3 H2SO4 NaOH NaOH/ZnAc
All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted.			
Residual Chlorine Check (SVOC 625 Pest/PCB 608)			11. Present Absent
Residual Chlorine Check (Total/Amenable/Free Cyanide)			12. Present Absent
Headspace in VOA Vials (>6mm):	☐Yes	☐No ☑N/A	13
Headspace Wisconsin Sulfide	☐Yes	☐No	14
Trip Blank Present:	☐Yes	☑No	15
Trip Blank Custody Seals Present	☐Yes	☐No	
Project Manager Review:			
Samples Arrived within Hold Time:	☐Yes	☐No	15.
Sufficient Volume:	☐Yes	☐No	16.
Correct Containers Used:	☐Yes	☐No	17.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 1/19/17

Sample Container Count

CLIENT: Pace-KS

COC PAGE 1 of 1

COC ID#

SBS / Bulk / DI / Kit

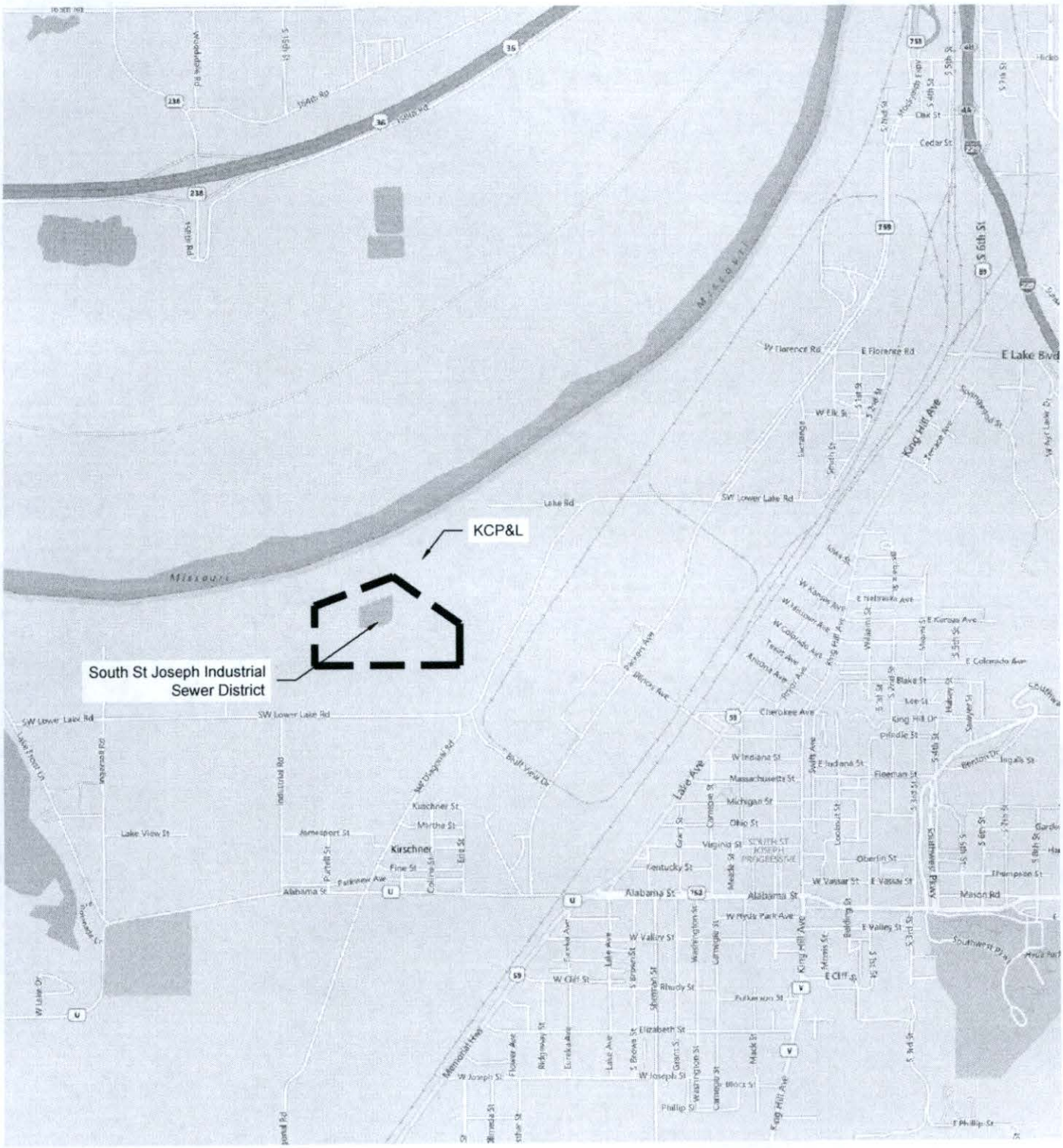
Project # 50163191

Sample Line Item	DG9H VG9H	AG1U	WGFU	AG0U	R	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	BP3C	BP1U	SP5T	AG2U				Matrix SW&NAL (Soil/Water/Non-Aqueous Liquid)	pH <2	pH >9	pH>12
1			1																		SL			
2			1																		↓			
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Container Codes

DG9H	40mL HCL amber voa vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber glass	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	SP5T	120mL Colform Na Thiosulfate
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber glass	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber glass	AF	Air Filter	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear glass	C	Air Cassettes	VSG	Headspace septa vial & HCL
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

FILENAME: \\wellsserver\shared folder\01 THE WELLS RESOURCE\2017 JOBS\South St. Joe Monitoring Wells, 17-04-02\DRAWING FILES\WORKING DRAWINGS\For Operating Permit\Outfall Map.dwg
DATE PLOTTED: 12/6/2017 11:11 AM DRAWN BY: JLB PLOT SCALE: 1:1



Site Vicinity Map
SCALE: 1" = 2000'-0"

N

TWR

The Wells Resource LLC
Consulting Engineers
3919 Cuming St.
Omaha, NE 68131
Phone: 402-556-4504

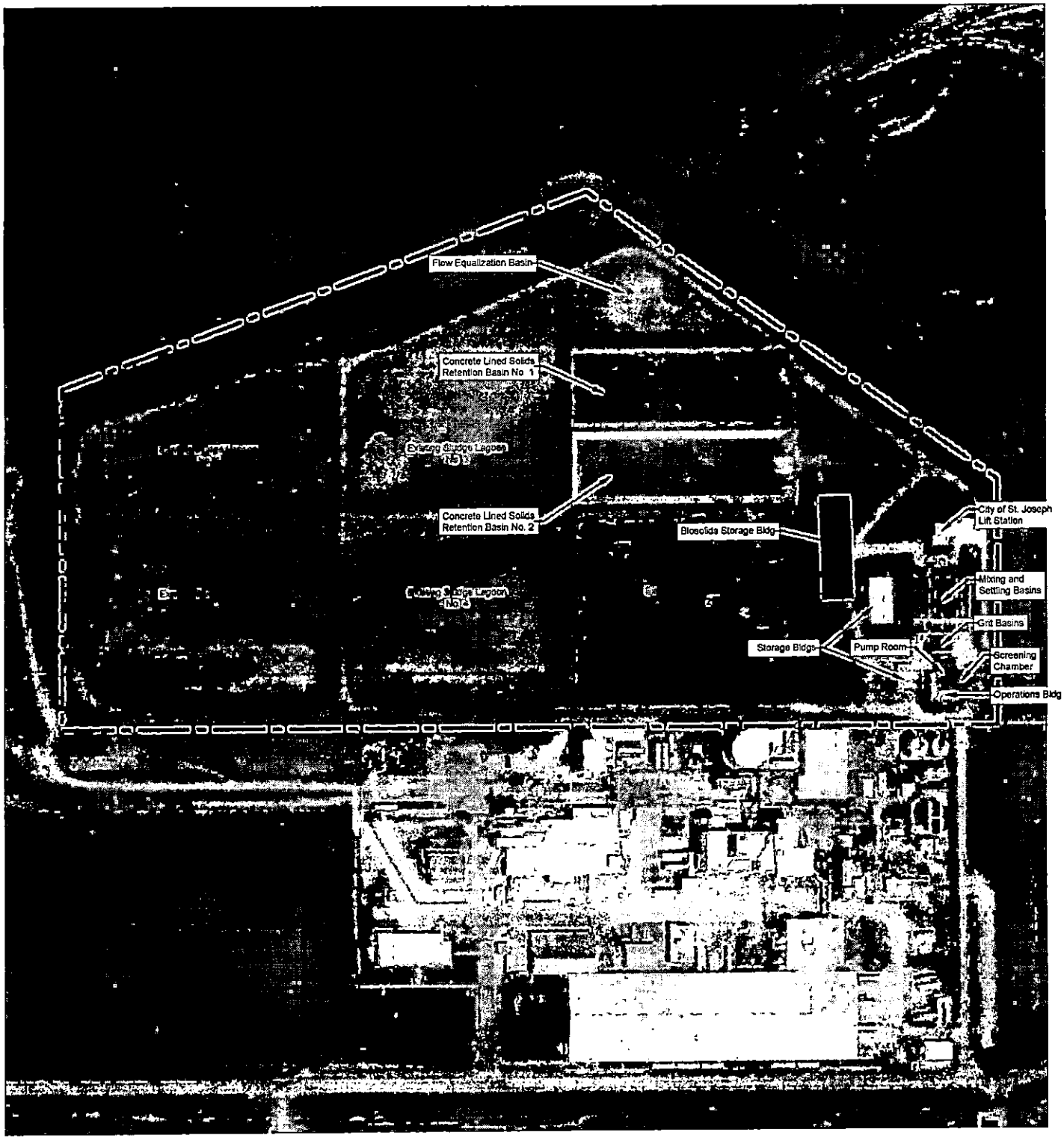
South St Joseph Industrial Sewer District

PROJECT NO: 17-04-02
LOCATION: St. Joseph, MO
DRAWN BY:

DATE: 12-06-17

DRAWING:

FILENAME: \\WELLSSERVER\Shared Folder\01 THE WELLS RESOURCE\2017 JOBS\South St. Joe Monitoring Wells, 17-04-02\DRAWING FILES\WORKING DRAWINGS\For Operating Permit\Facility Layout.dwg
DATE PLOTTED: 12/6/2017 12:15 PM DRAWN BY: JLB PLOT SCALE: 1:1



Facility Map
SCALE: 1" = 300'-0"

N

TWR

The Wells Resource LLC
Consulting Engineers
3919 Cuming St.
Omaha, NE 68131
Phone: 402-556-4504

South St Joseph Industrial Sewer District

PROJECT NO: 17-04-02
LOCATION: St. Joseph, MO
DRAWN BY:

DATE: 12-06-17

DRAWING: