

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), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0128155

Owner: PCS Phosphate Company Inc.
Address: 1101 Skokie Blvd Suite 400, Northbrook, IL 60062

Continuing Authority: PCS Phosphate Joplin Plant
Address: P.O. Box 225, Joplin, MO 64802

Facility Name: PCS Phosphate Joplin Plant
Facility Address: 301 State Line Avenue, Joplin, MO 64801

Legal Description: NW ¼, SW ¼, Sec. 2, T27N, R34W, Jasper County
UTM Coordinates: X= 356298, Y= 4106362

Receiving Stream: Unnamed Tributary to Short Creek (U)
First Classified Stream and ID: Out State Classified (U) (09999)
USGS Basin & Sub-watershed No.: (11070207-0904)

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

FACILITY DESCRIPTION

Outfall #001 – eliminated 5/2013

Outfall #002 – Feed Ingredients for Animals / Sewerage Works – SIC #2048
Scrubber Pond – receives water from the water treatment plant, French drains, and stormwater.
Design average daily flow is 41,673 GPD.

This permit authorizes only wastewater discharges 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 Sections 640.013, 621.250, and 644.051.6 of the Law.

September 1, 2013
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

March 31, 2018
Expiration Date

John Madras, Director, Water Protection Program

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				PAGE NUMBER 2 of 4		
				PERMIT NUMBER MO-0128155		
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:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #002</u>						
Flow	GPD	*		*	once/month	24 hr. estimate
Chemical Oxygen Demand	mg/L	90		60	once/month	grab
Total Suspended Solids	mg/L	100		70	once/month	grab
pH	SU	**		**	once/month	grab
Total Phosphorus as P	mg/L	1.0		*	once/month	grab
Ammonia as N (April 1 – Sept 30)	mg/L	3.7		1.4	once/month	grab
(Oct 1 – March 31)		7.5		2.8	once/month	grab
Lead, Total Recoverable	µg/L	*		*	once/month	grab
Zinc, Total Recoverable	µg/L	*		*	once/month	grab
Cadmium, Total Recoverable	µg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I standard conditions dated October 1, 1980 and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) 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:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

C. SPECIAL CONDITIONS continued

2. All outfalls must be clearly marked in the field.
3. Water Quality Standards
 - (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) 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;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) 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.
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

 - (a) That any activity has occurred or will occur which would result in the discharge 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; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
6. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
7. The permittee shall implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the department unless specifically requested. The SWPPP must be reviewed and updated, if needed, every five (5) years or as site conditions change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.
The SWPPP must include the following:

- (a) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter stormwater.
- (b) The SWPPP must include a schedule for twice per month site inspections and brief written reports. The inspections must include observation and evaluation of BMP effectiveness. Deficiencies must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report, including photographs. Any corrective measure that necessitates major construction may also need a construction permit. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to department personnel upon request.

C. SPECIAL CONDITIONS continued

- (c) A provision for designating an individual to be responsible for environmental matters.
 - (d) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the department.
8. Permittee shall adhere to the following minimum Best Management Practices:
- (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
 - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
 - (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits.
9. The purpose of the SWPPP and the BMPs listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.
10. Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 et. seq.) and the use of such pesticides shall be in a manner consistent with its label.
11. Before releasing water that has accumulated in secondary containment areas it must be examined for hydrocarbon odor and presence of sheen. When the presence of hydrocarbons is indicated and at a minimum of once/quarter, this water must be tested for Total Petroleum Hydrocarbons (TPH). The suggested analytical method for testing TPH is non-Halogenated Organic by Gas Chromatography method 8015 (also known as OA1 and OA2). However if the permittee so desires to use other approved testing methods (i.e. EPA 1664), they may do so. If the concentration for TPH exceeds 10mg/L, the water shall be taken to a WWTP for treatment.
12. 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 SWPPP and made available to the department upon request.

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL/MODIFICATION
OF
MO-0128155
PCS PHOSPHATE JOPLIN PLANT

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. 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 [40 CFR Part 124.8(a)] and [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 an Industrial Facility.

Part I – Facility Information

Facility Type: Industrial- Grain Mill Products
Facility SIC Code(s): 2048

Facility Description:

Facility has not discharged since July 2010 thus no samples were collected.

SIC #2048 - Prepared Feed and Feed Ingredients for Animals and Fowls, Except Dogs and Cats
Establishments primarily engaged in manufacturing prepared feeds and feed ingredients and adjuncts for animals and fowls, except dogs and cats. Included in this industry are poultry and livestock feed and feed ingredients, such as alfalfa meal, feed supplements, and feed concentrates and feed premixes. Also included are establishments primarily engaged in slaughtering animals for animal feed.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

- No.

Application Date: 02/13/13
Expiration Date: 08/13/13
Last Inspection: 12/27/12 In Compliance ; Non-Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#002	0.064	PRIMARY	Water treatment and stormwater

Facility Performance History & Comments:

Outfall #001 had no discharge since 7/2010 to present, but it had discharge from 9/2008 to 6/2010. This outfall has been discontinued and will be eliminated during this permit cycle as requested by the facility. DMR reported no discharge for Outfall #002 during the entire permit cycle.

Part II – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	DISTANCE TO CLASSIFIED SEGMENT	12-DIGIT HUC**
Tributary to Short Creek	U	n/a	General Criteria	0.16	11070207-0904

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW). ** - Hydrologic Unit Code

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Short Creek (U)	0	0	0

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

Part III – Rationale and Derivation of Effluent Limitations & 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.

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDegradation:

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, 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 a 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. Additional information regarding biosolids and sludge is located at the following web address:

<http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

Not applicable; This condition is not applicable to the permittee for this facility.

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.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable; A RPA was not conducted for this facility.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, 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.

Not Applicable; This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* 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 storm water 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*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water 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.

Applicable; A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

VARIANCE:

As 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 operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable; Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable; A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Not Applicable; At this time, the permittee is not required to conduct WET test for this facility.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are 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 waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Not Applicable; This facility does not discharge to a 303(d) listed stream.

Part IV – Effluent Limits Determination

Outfall #002 – Scrubber Pond

Effluent limitations derived and established in the below Effluent 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.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	*		*	NO	*
CHEMICAL OXYGEN DEMAND	MG/L	90		60	NO	90/60
TOTAL SUSPENDED SOLIDS	MG/L	100		70	NEW PARAMETER	REPLACES SETTLEABLE SOLIDS
PH	SU	6.5-9.0			NO	6.5-9.0
TOTAL PHOSPHORUS AS P	MG/L	1.0		*	NO	1.0/*
AMMONIA AS N (APRIL 1 – SEPT 30)	MG/L	3.7		1.4	YES	*
AMMONIA AS N (OCT 1 – MARCH 31)	MG/L	7.5		2.8	YES	*
LEAD, TOTAL RECOVERABLE	µg/L	*		*	NO	*
ZINC, TOTAL RECOVERABLE	µg/L	*		*	NO	*
CADMIUM, TOTAL RECOVERABLE	µg/L	*		*	NO	*

* - Monitoring requirement only.

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Chemical Oxygen Demand (COD).** The 90 mg/L daily maximum and 60 mg/L monthly average effluent limitations have been retained from the previous permit.
- **Settleable Solids.** Replaced with Total Suspended Solids.
- **Total Suspended Solids (TSS).** This conventional pollutant replaced the previous permit’s Settleable Solids. Effluent limitations of 100 mg/L daily maximum and 70 mg/L monthly average have been established since majority of the outfall’s flow is stormwater. These limits are consistent with stormwater limits for TSS.

- **pH.** The pH is limited to the range of 6.5-9.0 pH units and is not to be averaged.
- **Total Phosphorus as P.** The facility has phosphorus on the site. Kansas Department of Health and Environment have criterion for phosphorus. Another industry in the area also has a phosphorus limit in their permit. The daily maximum limit of 1.0 mg/L was previously established based on professional judgment. This limit has been exceeded as the facility's DMR showed concentrations ranging from 0.17 to 4.3 mg/L.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L (Default). OR No mixing considerations allowed; therefore, WLA = appropriate criterion.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.064 \text{ cfs} + 0.0)1.5 - (0.0 * 0.01))/0.064$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.064 \text{ cfs} + 0.0)12.1 - (0.0 * 0.01))/0.064$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L (0.780)} = \mathbf{1.2 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.9 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

MDL = 1.2 mg/L (3.11) = 3.7 mg/L [CV = 0.6, 99th Percentile]

AML = 1.2 mg/L (1.19) = 1.4 mg/L [CV = 0.6, 95th Percentile, n = 30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.064 \text{ cfs} + 0.0)3.1 - (0.0 * 0.01))/0.064 \text{ cfs}$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.064 + 0.0)12.1 - (0.0 * 0.01))/0.064$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L (0.780)} = \mathbf{2.4 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.9 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

MDL = 2.4 mg/L (3.11) = 7.5 mg/L [CV = 0.6, 99th Percentile]

AML = 2.4 mg/L (1.19) = 2.8 mg/L [CV = 0.6, 95th Percentile, n=30]

- **Dissolved Oxygen.** This parameter has been **removed** since the facility is not dechlorinating.
- **Lead, Total Recoverable.** Lead was required to be monitored during the previous permit cycle because mine tailings are present throughout the area and the water used at the facility is taken from deep wells where it is likely that these metals are located. Because Outfall #002 had no discharge during the permit cycle, thus no data to show that there is indeed no “reasonable potential” for Pb to exceed the WQS, monitoring requirement remains to determine whether a reasonable potential exists after the discharge begins.
- **Zinc, Total Recoverable.** Zinc was required to be monitored during the previous permit cycle because mine tailings are present throughout the area and the water used at the facility is taken from deep wells where it is likely that these metals are located. Outfall #002 has the same well water discharged into it as Outfall #001. Outfall #001's DMR from 9/2008 to 6/2010 showed zinc concentrations up to 1400 µg/L (1.4 mg/L) which exceed the Water Quality Criteria for zinc for the protection of AQL (165 µg/L acute/chronic; hardness of 150-174 mg/L). And because Outfall #002 had no discharge during the permit cycle, thus no data to show that there is indeed no “reasonable potential” for Zn to exceed the WQS, monitoring requirement remains to determine whether a reasonable potential exists after the discharge begins.

- **Cadmium, Total Recoverable.** Cadmium was required to be monitored during the previous permit cycle because mine tailings are present throughout the area and the water used at the facility is taken from deep wells where it is likely that these metals are located. Because Outfall #002 had no discharge during the permit cycle, thus no data to show that there is indeed no “reasonable potential” for Cd to exceed the WQS, monitoring requirement remains to determine whether a reasonable potential exists after the discharge begins.

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 that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. 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.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and 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 07/05/2013 to 08/05/2013. No responses were received.

DATE OF FACT SHEET: AUGUST 9, 2013

COMPLETED BY:

**AMANDA SAPPINGTON, CHIEF
INDUSTRIAL PERMITS UNIT
WATER PROTECTION PROGRAM
Amanda.sappington@dnr.mo.gov**



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
**FORM A – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
 UNDER MISSOURI CLEAN WATER LAW**

AD 14-57 C10964
~~No Fee Received~~ 2/13

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED 2/13/13	FEE SUBMITTED 0.00

Note PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

An operating permit and antidegradation review public notice

A construction permit following an appropriate operating permit and antidegradation review public notice

A construction permit and concurrent operating permit and antidegradation review public notice

A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)

An operating permit for a new or unpermitted facility Construction Permit # _____

An operating permit renewal: permit # MO- 0128155 Expiration Date August, 2013

An operating permit modification: permit # MO- 0128155 Reason: Eliminate Outfall 001

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

2. FACILITY

NAME PCS Phosphate Joplin Plant		TELEPHONE WITH AREA CODE (417) 624-5225	
ADDRESS (PHYSICAL) 301 State Line Avenue		FAX (417) 624-3324	
CITY Joplin	STATE MO	ZIP CODE 64801	

3. OWNER

NAME PCS Phosphate Company, Inc.		E-MAIL ADDRESS	TELEPHONE WITH AREA CODE (847) 849-4302	
ADDRESS (MAILING) 1101 Skokie Blvd Suite 400		FAX (847) 849-4692		
CITY Northbrook	STATE IL	ZIP CODE 60062		

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

4. CONTINUING AUTHORITY

NAME PCS Phosphate Joplin Plant		TELEPHONE WITH AREA CODE (417) 624-5225		
ADDRESS (MAILING) P.O. Box 225		FAX (417) 624-3324		
CITY Joplin	STATE MO	ZIP CODE 64802		

5. OPERATOR

NAME Doug Engel, Plant Manager		CERTIFICATE NUMBER N/A	TELEPHONE WITH AREA CODE (417) 626-4440	
ADDRESS (MAILING) P.O. Box 225		FAX (417) 624-3324		
CITY Joplin	STATE MO	ZIP CODE 64802		

6. FACILITY CONTACT

NAME Doug Engel		TITLE Plant Manager	TELEPHONE WITH AREA CODE (417) 626-4440	
		FAX (417) 624-3324		

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 N/A 1/4 1/4 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 NW 1/4 SW 1/4 Sec 2 T 27N R 34W Jasp County

UTM Coordinates Easting (X): 356297.73 m E Northing (Y): 4106362.45 m N

003 1/4 1/4 Sec T R County

UTM Coordinates Easting (X): Northing (Y):

004 1/4 1/4 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 and NAICS 002 – SIC 2048 and NAICS 311119

003 – SIC and NAICS 004 – SIC 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 (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
B.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C and D.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
C.	Is application for storm water discharges only? If yes, complete EPA Form 2F.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
D.	Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.		
E.	Is wastewater land applied? If yes, complete Form I.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
F.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

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

NAME Kenneth Shoemaker			
ADDRESS 8232 Woodward	CITY Overland Park	STATE KS	ZIP CODE 66204

10. 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) <i>Doug Engel Plant Manager</i>	TELEPHONE WITH AREA CODE 417-626-4440
SIGNATURE <i>Doug Engel</i>	DATE SIGNED 2-12-2013

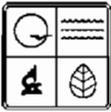
MO 780-1479 (01-09)

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?
- Map at 1" = 2000' scale?
- Signature?
- Form C, if applicable?
- Form D, if applicable?
- Form 2F, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM C – APPLICATION FOR DISCHARGE PERMIT –
MANUFACTURING, COMMERCIAL, MINING,
SILVICULTURE OPERATIONS, PROCESS & STORM WATER

FEB 13 2013

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
 PCS Phosphate Joplin Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER
 MO-0128155

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 2048 Mineral feed supplements, animal B. SECOND _____

C. THIRD _____ D. FOURTH _____

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) 002 NW 1/4 SW 1/4 SEC 2 T _____ R _____ Jasper _____ COUNTY

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST)	RECEIVING WATER
Outfall 002	Unnamed Tributary to Short Creek

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Facility produces feed grade phosphate.

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 <i>(list)</i>	2. OPERATION(S) CONTRIBUTING FLOW <i>(list)</i>	3. FREQUENCY		4. FLOW				C. DURATION <i>(in days)</i>
		A. DAYS PER WEEK <i>(specify average)</i>	B. MONTHS PER YEAR <i>(specify average)</i>	A. FLOW RATE <i>(in mgd)</i>		B. TOTAL VOLUME <i>(specify with units)</i>		
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	
002	No recorded discharges in current permit cycle	0	0	0	0	0	0	0

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)** **40 CFR 422.30 applies but contains no permit effluent limitations**

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 <i>(list outfall numbers)</i>
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. <i>(specify)</i>	

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

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS (OR OTHER ENVIRONMENTAL PROJECTS THAT MAY AFFECT YOUR DISCHARGES) YOU NOW HAVE UNDER WAY OR ARE YOU PLANNING. 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.

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)
Pace Analytical	9608 Loiret Blvd. Lenexa, KS 66219	(913)599-5665	Cadmium, Lead, Zinc, Iron, Total Suspended Solids, Total Settleable Solids, Dissolved Oxygen, pH, Biochemical Oxygen Demand (5 day), Fluoride, Sulfate, Ammonia, Phosphorus, Chemical Oxygen Demand, Total Organic Carbon

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 the information is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) <i>Doug Engel</i> Plant Manager	TELEPHONE NUMBER WITH AREA CODE 417-626-4440
SIGNATURE (SEE INSTRUCTIONS) <i>Doug Engel</i>	DATE SIGNED 2-12-2013

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

FORM C
 TABLE 1 FOR 3.00 ITEM A AND B

OUTFALL NO.
 002

INTAKE AND EFFLUENT CHARACTERISTICS

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. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						
A. Biochemical Oxygen Demand (BOD)	7.7						1	mg/L				
B. Chemical Oxygen Demand (COD)	24.3						1	mg/L				
C. Total organic Carbon (TOC)	1.5						1	mg/L				
D. Total Suspended Solids (TSS)	18.0						1	mg/L				
E. Ammonia (as N)	3.9						1	mg/L				
F. Flow	VALUE				VALUE			N/A			VALUE	
G. Temperature (winter)	VALUE				VALUE			°C			VALUE	
H. Temperature (summer)	VALUE				VALUE			°C			VALUE	
I. pH	MINIMUM 7.9	MAXIMUM 7.9	MINIMUM	MAXIMUM			1	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a 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. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						
A. Bromide (24959-67-9)		X												
B. Chlorine Total Residual		X												
C. Color														
D. Fecal Coliform		X												
E. Fluoride (16984-48-8)	X		.092						1	mg/L				
F. Nitrate—Nitrate (as N)		X												

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						
G. Nitrogen Total Organic (as N)		X												
H. Oil and Grease		X												
I. Phosphorus (as P) Total (7723-14-0)	X		21.8						1	mg/L				
J. Sulfate (as SO ₄) (14808-79-8)	X		70.0						1	mg/L				
K. Sulfide (as S)		X												
L. Sulfite (as SO ₃) (14265-45-3)		X												
M. Surfactants		X												
N. Aluminum Total (7429-90-5)		X												
O. Barium Total (7440-39-3)		X												
P. Boron Total (7440-42-8)		X												
Q. Cobalt Total (7440-48-4)		X												
R. Iron Total (7439-89-6)	X		0.14						1	mg/L				
S. Magnesium Total (7439-95-4)		X												
T. Molybdenum Total (7439-98-7)		X												
U. Manganese Total (7439-96-5)		X												
V. Tin Total (7440-31-5)		X												
W. Titanium Total (7440-32-6)		X												

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						
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)		X												
2M. Beryllium, Total (7440-41-7)		X												
3M. Magnesium, Total (7439-95-4)		X												
4M. Molybdenum, Total (7439-98-7)		X												
5M. Tin, Total (7440-31-5)		X												
6M. Titanium, Total (7440-32-6)		X												
7M. Mercury, Total (7439-97-6)		X												
8M. Selenium, Total (7782-49-2)		X												
9M. Thallium, Total (7440-28-0)		X												
10M. Phenols, Total		X												
RADIOACTIVITY														
(1) Alpha Total		X												
(2) Beta Total		X												
(3) Radium Total		X												
(4) Radium 226 Total		X												

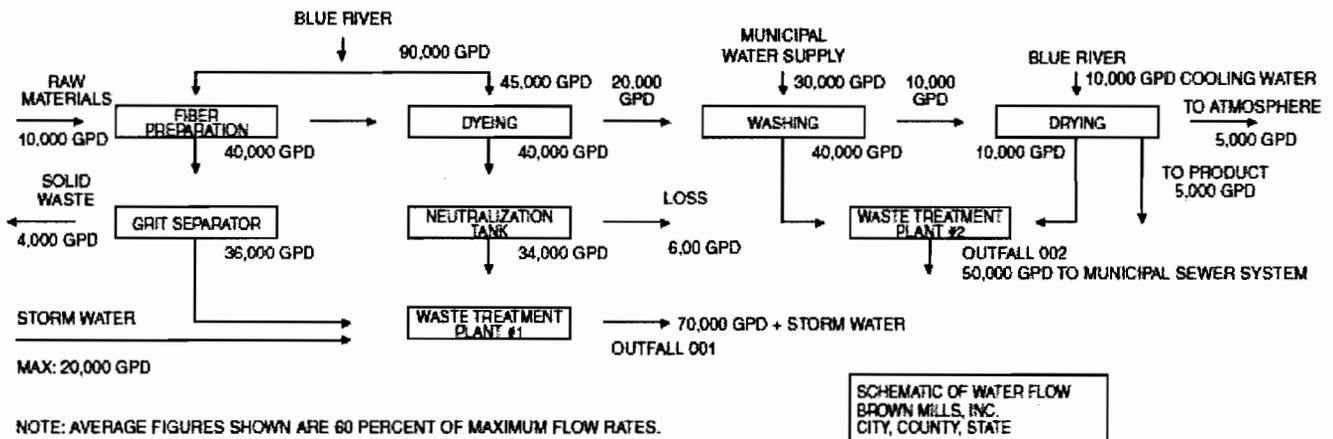
**INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE
PERMIT FORM C – MANUFACTURING, COMMERCIAL,
MINING AND SILVICULTURE OPERATIONS.**

All blanks must be filled in when the application is submitted to the appropriate regional office (see map). The form must be signed as indicated.

This application is to be completed only for wastewater facilities with a discharge. Include any facility with possibility of discharge, even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, then sufficient information should be attached so that an evaluation of the discharge can be made.

- 1.00 Name of Facility – By what title or name is this facility known locally?
- 1.10 and 1.20 Self-explanatory.
- 2.00 List in descending order of significance the four digit Standard Industrial Classification (SIC) codes that best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words.

SIC code numbers are descriptions that may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, that is available from the Government Printing Office, Washington, D.C. Use the current edition of the manual. If you have any questions concerning the appropriate SIC code for your facility, contact the Missouri Department of Natural Resources Regional office in your area (see map).
- 2.10 Point of discharge should be given in terms of the legal description of the waste treatment plant, location or sufficient information so that it may be located by the Missouri Clean Water Commission staff.
- 2.20 Receiving Water – the name of the stream to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.
- 2.30 Self-explanatory.
- 2.40 A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water and storm water runoff. You may group similar operations into a single unit labeled to correspond to the more detailed listing. The water balance should show average and maximum flows. Show all significant losses of water to products, atmosphere, discharge and public sewer systems. You should use actual measurements whenever available; otherwise, use your best estimate. An example of any acceptable line drawing appears below.



B. List all sources of wastewater to each outfall. Operations may be described in general terms (for example, "dye-making reactor" or a distillation tower"). You may estimate the flow contributed by each source if no data is available, and for storm water, you may use any reasonable measure of duration, volume or frequency. For each treatment unit, indicate its size, flow rate and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table A to fill in column 3B for each treatment unit. Insert "XX" into column 3B if no code corresponds to a treatment unit you list.

TABLE A – CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES

1-A	..... Ammonia Stripping	1-M	..... Grit Removal
1-B	..... Dialysis	1-N	..... Microstraining
1-C	..... Diatomaceous Earth Filtration	1-O	..... Mixing
1-D	..... Distillation	1-P	..... Moving Bed Filters
1-E	..... Electrodialysis	1-Q	..... Multimedia Filtration
1-F	..... Evaporation	1-R	..... Rapid Sand Filtration
1-G	..... Flocculation	1-S	..... Reverse Osmosis (Hyperfiltration)
1-H	..... Flotation	1-T	..... Screening
1-I	..... Foam Fractionation	1-U	..... Sedimentation (Settling)
1-J	..... Freezing	1-V	..... Slow Sand Filtration
1-K	..... Gas-Phase Separation	1-W	..... Solvent Extraction
1-L	..... Grinding (Comminutors)	1-X	..... Sorption

CHEMICAL TREATMENT PROCESSES

2-A	..... Carbon Absorption	2-G	..... Disinfection (Ozone)
2-B	..... Chemical Oxidation	2-H	..... Disinfection (Other)
2-C	..... Chemical Precipitation	2-I	..... Electrochemical Treatment
2-D	..... Coagulation	2-J	..... Ion Exchange
2-E	..... Dechlorination	2-K	..... Neutralization
2-F	..... Disinfection (Chlorine)	2-L	..... Reduction

BIOLOGICAL TREATMENT PROCESSES

3-A	..... Activated Sludge	3-E	..... Pre-Aeration
3-B	..... Aerated Lagoons	3-F	..... Spray Irrigation/Land Application
3-C	..... Anaerobic Treatment	3-G	..... Stabilization Ponds
3-D	..... Nitrification-Denitrification	3-H	..... Trickling Filtration

OTHER PROCESSES

4-A	..... Discharge to Surface Water	4-C	..... Reuse/Recycle of Treated Effluent
4-B	..... Ocean Discharge Through Outfall	4-D	..... Underground Injection

SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A	..... Aerobic Digestion	5-M	..... Heat Drying
5-B	..... Anaerobic Digestion	5-N	..... Heat Treatment
5-C	..... Belt Filtration	5-O	..... Incineration
5-D	..... Centrifugation	5-P	..... Land Application
5-E	..... Chemical Conditioning	5-Q	..... Landfill
5-F	..... Chlorine Treatment	5-R	..... Pressure Filtration
5-G	..... Composting	5-S	..... Pyrolysis
5-H	..... Drying Beds	5-T	..... Sludge Lagoons
5-I	..... Elutriation	5-U	..... Vacuum Filtration
5-J	..... Flotation Thickening	5-V	..... Vibration
5-K	..... Freezing	5-W	..... Web Oxidation
5-L	..... Gravity Thickening		

2.40 C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Maximum Daily" columns. Report the average of all daily values measures during days when discharge occurred within the last year in the "Long Term Average" columns.

2.50 A. All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by BPT, BCT, or BAT guidelines. If you are unsure whether you are covered by a promulgated effluent guideline, check with your Missouri Department of Natural Resources' Regional Office. You must check yes if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check no.

B. An effluent guideline is expressed in terms of production (or other measure of operation) if the limitations are expressed as mass of pollutant per operational parameter; for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

C. This item must be completed only if you checked yes to item B. The production information requested here is necessary to apply effluent guidelines to your facility and you may not claim it as confidential. However, you do not have to indicate how the reported information was calculated.

Report quantities in the units of measurement used in the applicable effluent guideline. The figures provided must be a measure of actual operation over a one month period, such as the production for the highest month during the last twelve months, or the monthly average production for the highest year of the last five years, or other reasonable measure of actual operation, but may not be based on design capacity or on predictions of future increases in operation.

2.60 A. If you check yes to this question, complete all parts of the chart, or attach a copy of any previous submission you have made containing the same information.

B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

3.00 These items require you to collect and report data on the pollutants discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

GENERAL INSTRUCTIONS. Part A requires you to report at least one analysis for each pollutant. Part B requires you to mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2A or 2B, Part B) based on your best estimate, and test for those which you believe to be present. Part C requires you to list any of a group of pollutants which you believe to be present, with a brief explanation of why you believe it to be present. (See specific instructions on the form and below Parts A through C).

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as a concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper. (Use the following abbreviations in the columns headed "Units" (column 3, Part A, and column 4, Part B).

CONCENTRATION

ppm	.....	parts per million
mg/L	.....	milligrams per liter
ppb	.....	parts per billion
ug/L	.....	micrograms per liter

MASS

lbs	.....	pounds
ton	.....	tons (English tons)
mg	.....	Milligrams
g	.....	grams
kg	.....	kilograms
T	.....	tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "number of analyses" columns (columns 2A and 2B, Part A, and columns 3A and 3D, Part B). The Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a complete sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" columns (column 2C, Part A, and column 3C, Part B), and the total number of daily values under the "Number of Analyses" columns (column 2D, Part A, and column 3D, Part B). Also, determine the average of all daily values taken during each calendar month, and report the highest average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Values" columns (column 2B, Part A, and column 3B, Part B).

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLE. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. A combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the Intake columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)
 2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)
 3. When applicable, a demonstration of the extent to which the pollutants in the intake vary physically, chemically, or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.
- 3.00 Part A must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. However, at your request, the Missouri Department of Natural Resources may waive the requirements to test for one or more of these pollutants, upon a determination that testing for the pollutant(s) is not appropriate for your effluent.
- Use composite samples for all pollutants in this part, except use grab samples for pH and temperature. See discussion in instructions above for definitions of the columns in Part A. The "Long Term Average Values" column (column 2C) and "Maximum 30 Day Values" column (column 2B) are not compulsory but should be filled out if data is available.
- 3.00 Part B must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff.
- Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease and fecal coliform. The Long Term Average Values column (column 3C) and Maximum 30 Day Values column (column 3B) are not compulsory but should be filled out if data is available.
- 3.00 List any pollutants in Table B that you believe to be present and explain why you believe them to be present in part C. No analysis is required, but you have analytical, you must report it.

TABLE B – TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT

TOXIC POLLUTANT	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Asbestos	Dichlorvos	Nalad
	Diethylamine	Napthenic acid
HAZARDOUS SUBSTANCES	Dimethylamine	Nitrotoluene
	Dintrobenzene	Parathion
Acetaldehyde	Diquat	Phenolsulfonate
Allyl alcohol	Disulfoton	Phosgene
Allyl chloride	Diuron	Propargite
Amyl acetate	Epichlorohydrin	Propylene oxide
Aniline	Ethion	Pyrethrins
Benzonitrile	Ethylene diamine	Quinoline
Benzyl chloride	Ethylene dibromide	Resorcinol
Butyl acetate	Formaldehyde	Strontium
Butylamine	Furfural	Strychnine
Captan	Guthion	Styrene

TABLE B – (continued)

HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Carbaryl	Isoprene	2, 4, 5-T (2,4,5-Trichloro- phenoxyacetic acid)
Carbofuran	Isopropanolamine	TDE (Tetrachlorodiphenyl ethane)
Carbon disulfide	Kelthane	2, 4, 5-TP (2-(2,4,5-Trichloro- phenoxy) propanoic acid)
Chlorpyrifos	Kepone	Trichlorofon
Coumaphos	Malathion	Triethanolamine
Cresol	Mercaptodimethur	Triethylamine
Crotonaldehyde	Methoxychlor	Uranium
2,4-D (2,4-Dichloro- Phenoxyacetic acid)	Methyl mercaptan	Vanadium
Diazinon	Methyl parathion	Vinyl acetate
Dicamba	Mevinphos	Xylene
Dichlobenil	Mexacarbate	Xylenol
2,2-Dichloropropionic acid	Monethyl amine	Zirconium
	Monomethyl amine	

3.10 Self-explanatory. Additional information may be requested by the Missouri Department of Natural Resources.

3.20 Self-explanatory.

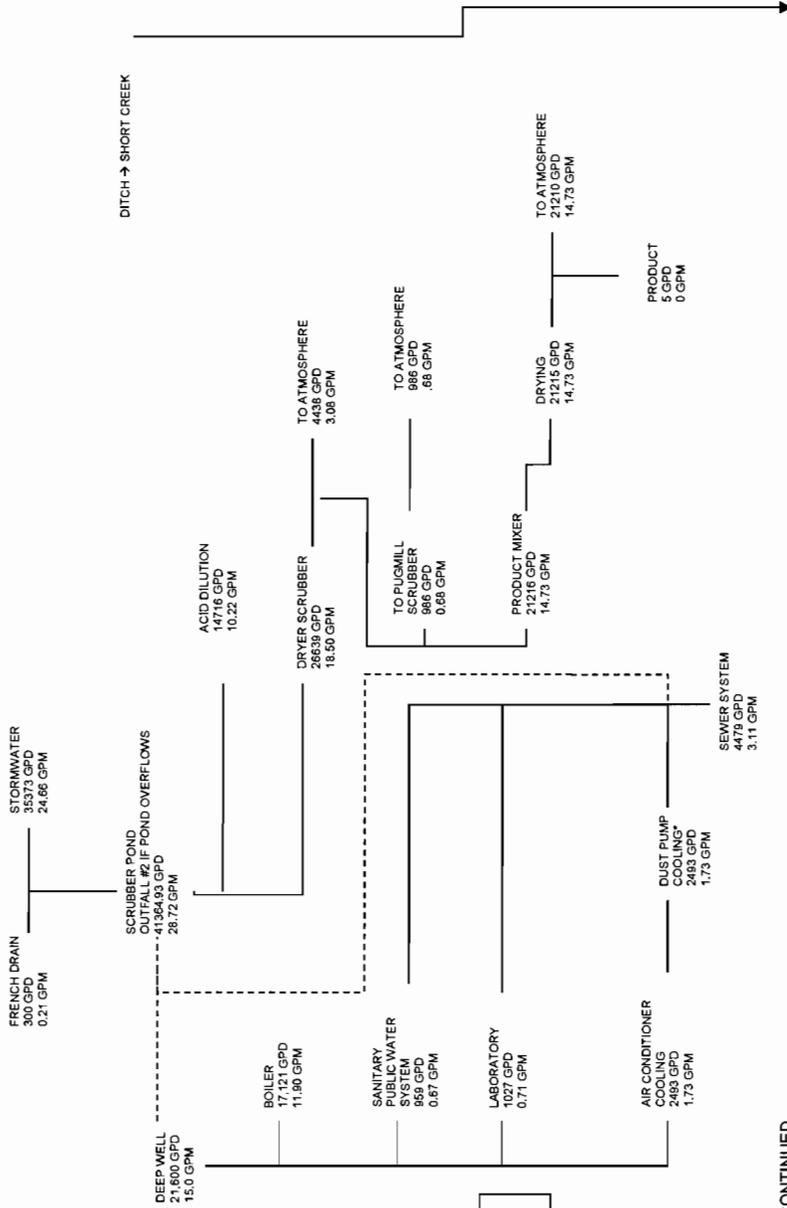
3.30 The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application . . . shall upon conviction, be punished by a fine of no more \$10,000 or by imprisonment for not more than six months, or both.

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.

**DIAGRAM OF WATER FLOW
PCS PHOSPHATE – JOPLIN PLANT
JOPLIN, JASPER COUNTY, MO**

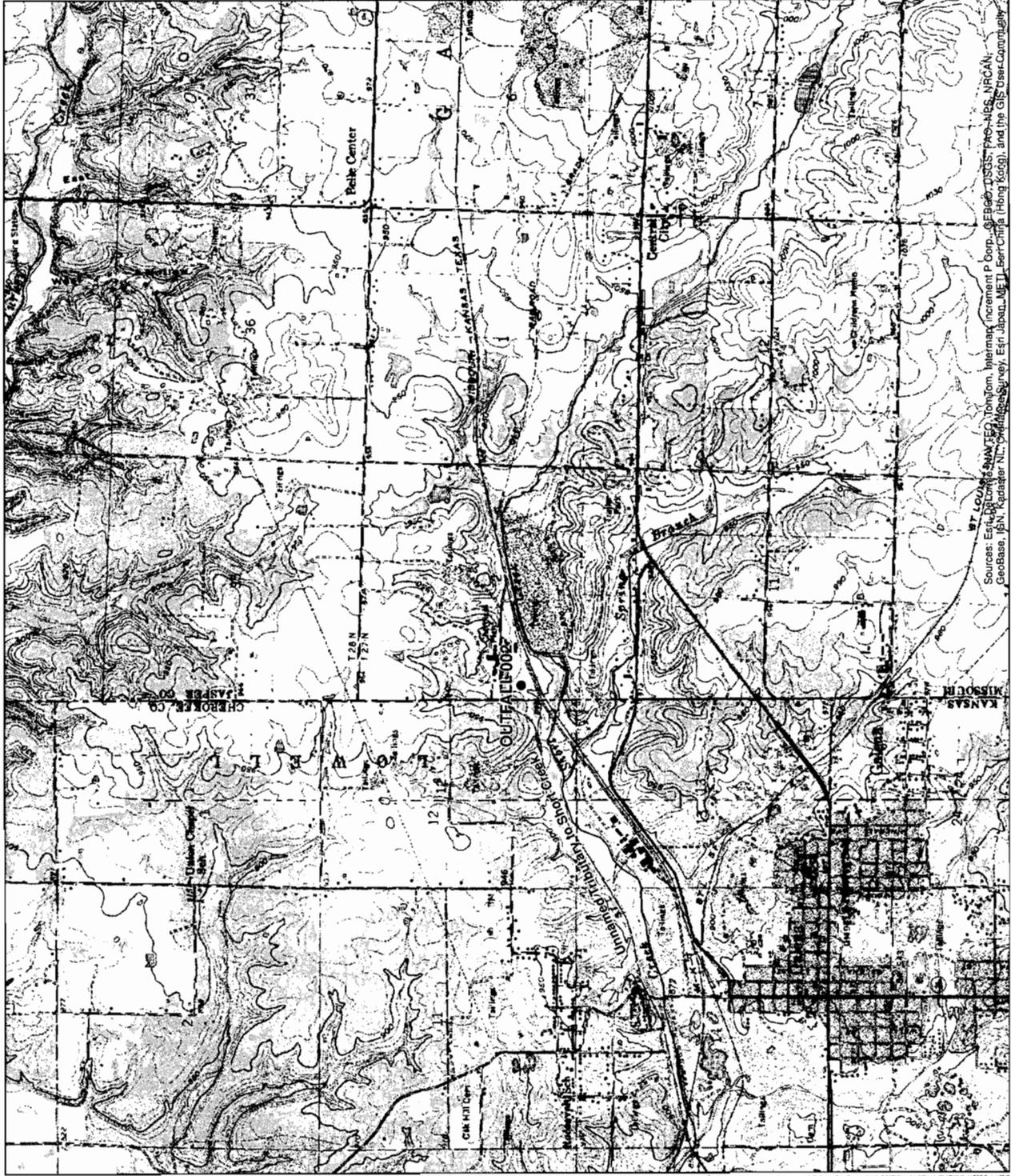


**NOTE: AVERAGE FIGURES SHOWN ARE
30 PERCENT OF MAXIMUM FLOW
RATES**

OUTFALL #1 HAS BEEN DISCONTINUED

- Water flow
- - - - - Make-up water during dry weather

JAN 2013



PCS Phosphate Joplin Plant
 Permit No. MO-0128555
 PCS Phosphate Company, Inc.
 Jasper County, MO

WT LOU, L. SHAW, INC., TomTom, Inermax, increment P Corp., GEBCO, DSSS, PAC-NDS, NRCAN,
 Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, DSSS, PAC-NDS, NRCAN,
 GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community



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

January 28, 2013

Keith Brown
PCS Phosphate Company Inc.
PO Box 225
301 State Line Road
Joplin, MO 64802

RE: Project: OUTFALL 002
Pace Project No.: 60137295

Dear Keith Brown:

Enclosed are the analytical results for sample(s) received by the laboratory on January 22, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,

Sherri Rosenstangle

sherri.rosenstangle@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Page 1 of 18

Pace Pkg., Page 1 of 20



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

CERTIFICATIONS

Project: OUTFALL 002
Pace Project No.: 60137295

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2

REPORT OF LABORATORY ANALYSIS

Page 2 of 18

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



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

SAMPLE SUMMARY

Project: OUTFALL 002
Pace Project No.: 60137295

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60137295001	OUTFALL 002	Water	01/21/13 13:30	01/22/13 08:20

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



SAMPLE ANALYTE COUNT

Project: OUTFALL 002
Pace Project No.: 60137295

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60137295001	OUTFALL 002	EPA 200.7	NDJ	4
		SM 2540D	AJM	1
		SM 2540F	JML	1
		SM 4500-O G	NDL	1
		SM 4500-H+B	NDL	1
		SM 5210B	JML	1
		EPA 300.0	AJM	2
		EPA 350.1	SEL	1
		EPA 365.4	SEL	1
		EPA 410.4	JML	1
		SM 5310C	SEL	1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



ANALYTICAL RESULTS

Project: OUTFALL 002
 Pace Project No.: 60137295

Sample: OUTFALL 002		Lab ID: 60137295001	Collected: 01/21/13 13:30	Received: 01/22/13 08:20	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7						
Cadmium	ND	mg/L	0.0050	1	01/24/13 15:30	01/28/13 10:59	7440-43-9	
Iron	0.14	mg/L	0.050	1	01/24/13 15:30	01/28/13 10:59	7439-89-6	
Lead	ND	mg/L	0.0050	1	01/24/13 15:30	01/28/13 10:59	7439-92-1	
Zinc	0.081	mg/L	0.050	1	01/24/13 15:30	01/28/13 10:59	7440-66-6	
2540D Total Suspended Solids		Analytical Method: SM 2540D						
Total Suspended Solids	18.0	mg/L	5.0	1		01/24/13 15:09		
2540F Total Settleable Solids		Analytical Method: SM 2540F						
Total Settleable Solids	ND	mL/L/hr	0.20	1		01/22/13 14:00		
4500 OG Oxygen, Dissolved		Analytical Method: SM 4500-O G						
Oxygen, Dissolved	10.3	mg/L	0.10	1		01/23/13 12:44	7782-44-7	H6
4500H+ pH, Electrometric		Analytical Method: SM 4500-H+B						
pH at 25 Degrees C	7.9	Std. Units	0.10	1		01/23/13 11:50		H6
5210B BOD, 5 day		Analytical Method: SM 5210B Preparation Method: SM 5210B						
BOD, 5 day	7.7	mg/L	2.0	1	01/23/13 09:32	01/28/13 09:26		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0						
Fluoride	0.92	mg/L	0.20	1		01/23/13 11:37	16984-48-8	
Sulfate	70.0	mg/L	5.0	5		01/23/13 11:53	14808-79-8	
350.1 Ammonia		Analytical Method: EPA 350.1						
Nitrogen, Ammonia	3.9	mg/L	0.10	1		01/24/13 11:16	7664-41-7	
365.4 Total Phosphorus		Analytical Method: EPA 365.4						
Phosphorus	21.8	mg/L	0.50	5		01/23/13 17:00	7723-14-0	
410.4 COD		Analytical Method: EPA 410.4						
Chemical Oxygen Demand	24.3	mg/L	10.0	1		01/23/13 10:54		
5310C TOC		Analytical Method: SM 5310C						
Total Organic Carbon	1.5	mg/L	1.0	1		01/23/13 18:14	7440-44-0	



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

QC Batch: MPRP/21277 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Associated Lab Samples: 60137295001

METHOD BLANK: 1130055 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	mg/L	ND	0.0050	01/25/13 11:13	
Iron	mg/L	ND	0.050	01/25/13 11:13	
Lead	mg/L	ND	0.0050	01/25/13 11:13	
Zinc	mg/L	ND	0.050	01/25/13 11:13	

LABORATORY CONTROL SAMPLE: 1130056

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/L	1	1.0	104	85-115	
Iron	mg/L	10	10.7	107	85-115	
Lead	mg/L	1	1.1	110	85-115	
Zinc	mg/L	1	1.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1130057 1130058

Parameter	Units	60137243002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Cadmium	mg/L	0.10	1	1	1.1	1.1	96	96	70-130	0	10	
Iron	mg/L	321	10	10	10.8	10.4	104	101	70-130	3	10	
Lead	mg/L	0.017	1	1	1.0	1.0	101	101	70-130	0	10	
Zinc	mg/L	0.74	1	1	1.6	1.6	85	84	70-130	1	11	



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

QC Batch: WET/39376	Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B	Analysis Description: 4500H+B pH
Associated Lab Samples: 60137295001	

SAMPLE DUPLICATE: 1129545

Parameter	Units	60137264001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	5	H6



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

QC Batch: WET/39372 Analysis Method: SM 5210B
 QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
 Associated Lab Samples: 60137295001

METHOD BLANK: 1129418 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	01/28/13 09:16	

LABORATORY CONTROL SAMPLE: 1129419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	226	114	85-115	

SAMPLE DUPLICATE: 1129420

Parameter	Units	60137310001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	419	419	0	17	



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

QC Batch: WETA/23280 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 60137295001

METHOD BLANK: 1129345 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.20	01/23/13 11:05	
Sulfate	mg/L	ND	1.0	01/23/13 11:05	

METHOD BLANK: 1130304 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	01/24/13 14:53	

METHOD BLANK: 1130893 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.20	01/25/13 11:07	

LABORATORY CONTROL SAMPLE: 1129346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 1130305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 1130894

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.3	93	90-110	



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

MATRIX SPIKE SAMPLE:		1129347						
Parameter	Units	60137295001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers	
Fluoride	mg/L	0.92	2.5	3.1	87	75-110		
Sulfate	mg/L	70.0	25	92.3	89	61-119		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		1129348			1129349							
Parameter	Units	60137231002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Fluoride	mg/L	31.7	25	25	64.2	53.4	130	87	75-110	18	10	D6,M6
Sulfate	mg/L	15000	10000	10000	23200	22900	82	79	61-119	1	10	



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

QC Batch: WETA/23294 Analysis Method: EPA 350.1
 QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
 Associated Lab Samples: 60137295001

METHOD BLANK: 1130084 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	01/24/13 10:59	

LABORATORY CONTROL SAMPLE: 1130085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	2	2.2	108	90-110	

MATRIX SPIKE SAMPLE: 1130086

Parameter	Units	60136992001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	ND	2	1.2	59	90-110	M1

MATRIX SPIKE SAMPLE: 1130088

Parameter	Units	60136950001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	4.2	2	4.8	32	90-110	M1

SAMPLE DUPLICATE: 1130087

Parameter	Units	60136994001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	ND	ND		18	



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

QC Batch: WETA/23259 Analysis Method: EPA 365.4
 QC Batch Method: EPA 365.4 Analysis Description: 365.4 Phosphorus
 Associated Lab Samples: 60137295001

METHOD BLANK: 1129150 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/L	ND	0.10	01/23/13 15:52	

LABORATORY CONTROL SAMPLE: 1129151

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2	2.1	104	90-110	

MATRIX SPIKE SAMPLE: 1129152

Parameter	Units	60136316004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	2.0	2	5.2	157	90-110	M1

MATRIX SPIKE SAMPLE: 1129154

Parameter	Units	60137024001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	1.4	2	3.2	90	90-110	

SAMPLE DUPLICATE: 1129153

Parameter	Units	60137105007 Result	Dup Result	RPD	Max RPD	Qualifiers
Phosphorus	mg/L	2.8	2.8	1	10	



QUALITY CONTROL DATA

Project: OUTFALL 002
 Pace Project No.: 60137295

QC Batch: WETA/23258 Analysis Method: EPA 410.4
 QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
 Associated Lab Samples: 60137295001

METHOD BLANK: 1129124 Matrix: Water
 Associated Lab Samples: 60137295001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	10.0	01/23/13 10:46	

LABORATORY CONTROL SAMPLE: 1129125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	50	50.6	101	90-110	

MATRIX SPIKE SAMPLE: 1129126

Parameter	Units	60136618001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	25.2	50	63.6	77	90-110	M1

SAMPLE DUPLICATE: 1129127

Parameter	Units	60137022001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chemical Oxygen Demand	mg/L	7.6J	6.7J		25	



QUALIFIERS

Project: OUTFALL 002
Pace Project No.: 60137295

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

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.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: OUTFALL 002
Pace Project No.: 60137295

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60137295001	OUTFALL 002	EPA 200.7	MPRP/21277	EPA 200.7	ICP/17166
60137295001	OUTFALL 002	SM 2540D	WET/39393		
60137295001	OUTFALL 002	SM 2540F	WET/39364		
60137295001	OUTFALL 002	SM 4500-O G	WET/39377		
60137295001	OUTFALL 002	SM 4500-H+B	WET/39376		
60137295001	OUTFALL 002	SM 5210B	WET/39372	SM 5210B	WET/39439
60137295001	OUTFALL 002	EPA 300.0	WETA/23280		
60137295001	OUTFALL 002	EPA 350.1	WETA/23294		
60137295001	OUTFALL 002	EPA 365.4	WETA/23259		
60137295001	OUTFALL 002	EPA 410.4	WETA/23258		
60137295001	OUTFALL 002	SM 5310C	WETA/23288		



Sample Condition Upon Receipt

WO#: 60137295



Client Name: PCS

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 794560354320 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 2PAC

Thermometer Used: T-112 / T-194 Type of Ice: Wet Blue None Samples received on ice, cooling process has begun. (circle one)

Cooler Temperature: 3.2

Optional
Proj Due Date:
Proj Name:

Date and Initials of person examining contents: NI-22-13

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>pl Do Rod S.S</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12.
Sample labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Includes date/time/ID/analyses Matrix:	<u>WT</u>	13.
All containers needing preservation have been checked	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17. List State:

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: SAR Date: 1.22.13



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	PCS Phosphate Co.	Report To:	Keith Brown	Attention:	
Address:	301 State Line Ave. Joplin, MO 64802	Copy To:		Company Name:	
Email To:	kdbrown@pcsposphate.com	Purchase Order No.:		Address:	
Phone:	(417) 626-4445	Project Name:	Sherril Guess	Site Location:	
Requested Due Date:	1-28-13	Project Number:	1782-1	STATE:	MO

ITEM #	Valid Matrix Codes MATRIX DRINKING WATER WASTE WATER PRODUCT SOLID WASTE AIR OTHER TISSUE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives HCl HNO ₃ H ₂ SO ₄ Unpreserved	Analysis Test pH, Diss. O ₂ F, Fluoride, sulfate NH ₃ , COD T, Phosphorus Pb, Zn, Cd, Fe by 200.7 BOD, TSS Sett. Solids TOC	Requested Analysis Filtered (Y/N)	Temp in °C	Received on	Custody Sealed	Samples Intact
		COMPOSITE START	COMPOSITE END/GRAB										
1	100355 Outfall 002 100355	DATE	1-21-13 13:30	WT	✓	7				10/2/13 5	15 APR - 2013	✓	✓
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Pace Pkg., Page 20 of 20	Michael Henry	1-21-13	1400	Michael Henry	1-21-13	0820 3.2	Y X Y
SAMPLER NAME AND SIGNATURE							
PRINT Name of SAMPLER: Michael Henry							
SIGNATURE of SAMPLER: Michael Henry							
DATE Signed (MM/DD/YYYY): 1-21-13							

Missouri Department of Natural Resources
Water Protection Program – Water Pollution Permits
1101 Riverside Drive
Jefferson City, MO 65101

Att: Chris Wieberg

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FEB 18 2013
WATER PROTECTION PROGRAM

January 31, 2013

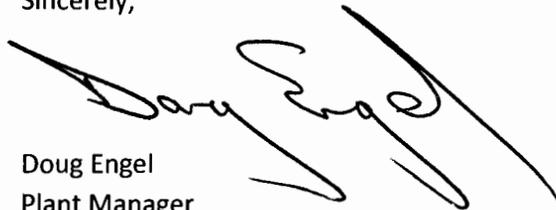
Chris Wieberg
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102

Dear Mr. Wieberg,

Enclosed is a permit renewal application for the PCS Phosphate Joplin Plant (permit number MO-0128155). By this letter PCS provides notification that that the plant has eliminated Outfall 001 and requests that it be removed at the time of permit renewal.

If you have any questions, please feel free to contact me at (417)626-4440.

Sincerely,



Doug Engel
Plant Manager

Enclosure

PCS Phosphate - Joplin
FEB 13 2013
WATER PROTECTION PROGRAM