ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
ANNUAL FACILITY INSPECTION REPORT
NPDES PERMIT FOR STORM WATER DISCHARGES
FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)

Complete each section of this report.

REPORT PERIOD:	FROM: MARCH 2015	TO: MARCH 2016

MS4 OPERATOR INFORMATION: (As it appears on the current permit)

NAME: City of Crystal Lake		TELEPHONE NUMBER: 815-459-2020
MAILING ADDRESS: 100 Woodstock Street		
CITY: Crystal Lake	STATE: IL	ZIP: 60039
CONTACT PERSON: Victor Ramirez (Person responsible for Annual Report)		

NAME(S) OF GOVERNMENTAL ENTITY(IES) IN WHICH MS4 IS LOCATED: (As it appears on the current permit)

McHenry County	

THE FOLLOWING ITEMS MUST BE ADDRESSED.

A. CHANGES TO BEST MANAGEMENT PRACTICES (check appropriate BMP change(s) and attach information regarding change(s) to BMP and measurable goals.)

1. Public Education and Outreach	☐	4. Construction Site Runoff Control	☐
2. Public Participation/Involvement	☐	5. Post-Construction Runoff Control	☐
3. Illicit Discharge Detection & Elimination	☐	6. Pollution Prevention/Good Housekeeping	☐

B.
Attach the status of compliance with permit conditions, an assessment of the appropriateness of your identified best management practices and progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP, and your identified measurable goals for each of the minimum control measures.

C.
Attach results of information collected and analyzed, including monitoring data, if any during the reporting period.

D.
Attach a summary of the storm water activities you plan to undertake during the next reporting cycle (including an implementation schedule.)

E.
Attach notice that you are relying on another government entity to satisfy some of your permit obligations (if applicable).

F.
Attach a list of construction projects that your entity has paid for during the reporting period.

SIGNATURE:	DATE: May 30, 2016

Information required by this form must be provided to comply with 415 ILCS 5/39 (1996). Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

IL 532 2585
WPC 691 JANUARY-2003

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Part A. Changes to Best Management Practices

Note: X indicates BMPs performed that were proposed in your NPDES permit
✓ indicates changes to BMPs proposed in your NPDES permit

Year 11	Year 12	Year 13	Year 14	Year 15	MS4
A. Public Education and Outreach					
X	X	X	X	X	A.1 Distributed Paper Material
					A.2 Speaking Engagement
X	X	X	X	X	A.3 Public Service Announcement
X	X	X	X	X	A.4 Community Event
					A.5 Classroom Education Material
X	X	X	X	X	A.6 Other Public Education
B. Public Participation/Involvement					
					B.1 Public Panel
X	X	X	X	X	B.2 Educational Volunteer
X	X	X	X	X	B.3 Stakeholder Meeting
					B.4 Public Hearing
					B.5 Volunteer Monitoring
X	X	X	X	X	B.6 Program Coordination
X	X	X	X	X	B.7 Other Public Involvement
C. Illicit Discharge Detection and Elimination					
X	X	X	X	X	C.1 Storm Sewer Map Preparation
X	X	X	X	X	C.2 Regulatory Control Program
X	X	X	X	X	C.3 Detection/Elimination Prioritization Plan
X	X	X	X	X	C.4 Illicit Discharge Tracing Procedures
X	X	X	X	X	C.5 Illicit Source Removal Procedures
X	X	X	X	X	C.6 Program Evaluation and Assessment
X	X	X	X	X	C.7 Visual Dry Weather Screening
X	X	X	X	X	C.8 Pollutant Field Testing
					C.9 Public Notification
					C.10 Other Illicit Discharge Controls

Year 11	Year 12	Year 13	Year 14	Year 15	MS4
D. Construction Site Runoff Control					
X	X	X	X	X	D.1 Regulatory Control Program
X	X	X	X	X	D.2 Erosion and Sediment Control BMPs
					D.3 Other Waste Control Program
X	X	X	X	X	D.4 Site Plan Review Procedures
X	X	X	X	X	D.5 Public Information Handling Procedures
X	X	X	X	X	D.6 Site Inspection/Enforcement Procedures
					D.7 Other Construction Site Runoff Controls
E. Post-Construction Runoff Control					
					E.1 Community Control Strategy
X	X	X	X	X	E.2 Regulatory Control Program
X	X	X	X	X	E.3 Long Term O&M Procedures
X	X	X	X	X	E.4 Pre-Const Review of BMP Designs
X	X	X	X	X	E.5 Site Inspections During Construction
					E.6 Post-Construction Inspections
					E.7 Other Post-Const Runoff Controls
F. Pollution Prevention/Good Housekeeping					
X	X	X	X	X	F.1 Employee Training Program
X	X	X	X	X	F.2 Inspection and Maintenance Program
X	X	X	X	X	F.3 Municipal Operations Storm Water Control
X	X	X	X	X	F.4 Municipal Operations Waste Disposal
X	X	X	X	X	F.5 Flood Management/Assess Guidelines
X	X	X	X	X	F.6 Other Municipal Operations Controls

Part B. Status of Compliance with Permit Conditions

(Provide the status of compliance with permit conditions, an assessment of the appropriateness of your identified best management practices and progress towards achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable [MEP], and your identified measurable goals for each of the minimum control measures.)

The status of BMPs and measurable goals performed in Year 13 are described below.

1) PUBLIC EDUCATION AND OUTREACH

The City and McHenry County both perform a variety of activities that meet the requirements of the Public Education and Outreach minimum control measure. These activities include BMP's A.1, A.3, A.4 and A.6. A brief description and status is provided below.

BMP No. A.1 – Distibuted Paper Material
Brief Description of BMP:
The City of Crystal Lake (City) and McHenry County will continue to produce and make available brochures on a variety of stormwater related topics. These brochures and informational materials are made available for the public at the City facilities and events.

BMP No. A.3 – Public Service Announcement
Brief Description of BMP:
The City will continue to include a stormwater and/or ambient water quality related articles in the City's monthly newsletter at least once a year.

BMP No. A.4 – Community Event
Brief Description of BMP:
The City has designed and constructed a rain garden with the Wildflower Preservation and Propagation Committee. The City will continue to maintain the existing rain garden as an educational and demonstration tool and seek out additional partnerships as funding allows. The City has also attended and supported the annual Drug Take Back Initiative Program sponsored by the Police Department. This provides an opportunity to engage the public on stormwater related issues. The City will also continue this outreach activity.

BMP No. A.6 – Other Public Involvement
Brief Description of BMP:
The City will continue to utilize other available outlets such as the City website, library, etc. to reach residents regarding stormwater and water quality information. The City will update and modify their approach as need to stay current and keep residents informed.

2) PUBLIC PARTICIPATION AND INVOLVEMENT

The City and McHenry County both perform a variety of activities that meet the requirements of the Public Participation and Involvement minimum control measure. These activities include BMP's B.2, B.3, B.6 and B.7. A brief description and status is provided below.

BMP No. B.2, – Educational Volunteer

Brief Description of BMP:
The City regularly participates in volunteering activities that provide opportunities to interact with residents and educate them on the importance of stormwater and water quality. City staff will continue to perform these activities and work to increase participation from its staff and attendance by residents.

BMP No. B.3 – Stakeholder Meeting

Brief Description of BMP:
The City will work to conduct stakeholder meetings to connect directly with impacted residents and distribute information. The City will continue to hold the stakeholder meetings as needed with a goal of at least one per year. The City is actively involved in the newly formed Silver and Sleepy Hollow Creeks Watershed Coalition including attending the monthly meetings.

BMP No. B.6 – Program Involvement

Brief Description of BMP:
The City has coordinated with other local municipalities and agencies on regional stormwater related issues. The City will continue to partner with the County and other agencies to coordinate efforts such as watershed studies and other regional issues impacting multiple jurisdictions.

BMP No. B.7 – Other Public Involvement

Brief Description of BMP:
The City has hosted elementary schools and other residents with tours through various City departments. These tours allow the City to educate the participants on various functions of the City, as well as educate them on issues pertaining to stormwater and water quality, such as what is the difference between stormwater and sanitary and why keeping them separate is important. The age groups for the tours ranged from elementary through college.

3) ILLICIT DISCHARGE DETECTION AND ELIMINATION

The City and McHenry County both perform a variety of activities that meet the requirements of the Illicit Discharge Detection and Elimination minimum control measure. These activities include BMP's C.1, C.2, C.3, C.4, C.5, C.6, C.7, and C.8. A brief description and status is provided below.

BMP No. C.1 – Storm Sewer Map Preparation

Brief Description of BMP:
The City is working to develop an extensive, GIS based storm sewer atlas map and inventory of the storm sewer system outfalls. The City will continue the work to update the system and

inventory as needed based on development and other stormwater improvements. The City is moving forward with the plans and commitment to develop the system and is currently updating the GIS consortium to include the outfall locations.

BMP No. C.2 – Regulatory Control Program

Brief Description of BMP:
The City and County both have ordinances in place to allow for enforcement action if an illicit discharge is observed, reported or discovered. The City will continue to enforce the ordinance to prevent or eliminate non-stormwater discharges from the municipal separate storm sewer system.

BMP No. C.3 – Detection/Elimination Prioritization Plan

Brief Description of BMP:
The City has policies and procedures to identify, trace, and eliminate illicit discharges, as well as addressing those potential illicit discharges reported by the public. The City will continue these activities to reduce or eliminate illicit discharges to the municipal separate storm sewer system. The City has implemented an Inflow and Infiltration (I/I) Program to identify and eliminate cross connections to the sanitary sewer system. These programs reduce the potential for surcharging of sanitary sewers and the potential discharge of sanitary waste into the MS4.

BMP No. C.4 – Illicit Discharge Tracing Procedures

Brief Description of BMP:
The City has existing policies and procedures in place to trace and eliminate illicit discharges to the municipal separate storm sewer system. These procedures include the utilization of the GIS outfall mapping system, existing design plans and other available data to locate the source of potential pollutants. The City will continue these tracing activities as needed to reduce or eliminate non-stormwater discharges to the MS4.

BMP No. C.5 – Illicit Source Removal Procedures

Brief Description of BMP:
The City and County both have regulatory mechanisms in place to allow for enforcement actions to eliminate illicit discharges. The City will continue to utilize these procedures as needed to eliminate non-stormwater discharges to the MS4.

BMP No. C.6 – Program Evaluation and Assessment

Brief Description of BMP:
The City will continue to conduct the annual program evaluation and assessment for the IDDE program. The evaluation and assessment provides awareness and opportunity for improvement to the policies and procedures based on experience and staff feedback.

BMP No. C.7 – Visual Dry Weather Screening

Brief Description of BMP:
The City regularly performs dry weather screening of the municipally owned outfalls for potential stormwater concerns as part of its maintenance activities. The City will continue to perform these activities and has developed a form for formalizing this process. The City will continue to perform these activities and utilize the inspection form for future permit years.

BMP No. C.8 – Pollutant Field Testing

Brief Description of BMP:
The City regularly samples, tests, analyzes and documents the results of influent and effluent flow to various waterbodies throughout the community as part of an ongoing monitoring and assessment program. These procedures provide a baseline condition for these natural resources in the event of a potential illicit discharge. The City will continue these procedures in future permit years as funding allows.

4) CONSTRUCTION SITE RUNOFF CONTROL

The City and McHenry County both have ordinances and activities in place that meet the requirements of the Construction Site Runoff Control minimum control measure. These activities include BMP's D.1, D.2, D.4, D.5, and D.6. A brief description and status is provided below.

BMP No. D.1 – Regulatory Control Program

Brief Description of BMP:
The City and County have ordinances in place to require the review, inspection and enforcement of construction site runoff controls. The City will continue with these policies/procedures and update as needed based on the impending MS4 permit.

BMP No. D.2 – Erosion and Sediment Control BMPs

Brief Description of BMP:
The City and County have ordinances in place to require the review, inspection and enforcement of soil erosion and sediment control best management practices. The City will continue these procedures to reduce or prevent the discharge of soil and other potential pollutants from construction sites and amend as needed based on the impending permit.

BMP No. D.4 – Site Plan Review Procedures

Brief Description of BMP:
The City has procedures that require the review of site plan for proposed developments for compliance. The City will continue the review procedures for developments to verify compliance with applicable NDPES regulations.

BMP No. D.5 – Public Information Handling Procedures

Brief Description of BMP:
The City has procedures in place to receive, log and address publicly reported issues. The City will continue these procedures and respond and/or investigate as needed.

BMP No. D.6 – Site Inspection/Enforcement Procedures

Brief Description of BMP:
The City and County regulatory control programs all for the inspection and enforcement for construction site runoff control. The City and County will continue the inspection and enforcement program to prevent the discharge of pollutants from construction sites.

5) POST-CONSTRUCTION RUNOFF CONTROL

The City and McHenry County both have ordinances and activities in place that meet the requirements of the Post-Construction Runoff Control minimum control measure. These activities include BMP's E.2, E.3, E.4, and E.5. A brief description and status is provided below.

BMP No. E.2 – Regulatory Control Program

Brief Description of BMP:
The City and County have ordinances in place that require the review, inspection and enforcement of post-construction runoff control measures. The City will continue to enforce the ordinances and verify compliance of all developments following construction to reduce or prevent the discharge of pollutants to the MS4.

BMP No. E.3 – Long Term O&M Procedures

Brief Description of BMP:
The City has procedures for assisting and evaluating long term maintenance of stormwater best management practices. The City will continue to assist developers, residents and other target audiences by providing sample maintenance plans and conducting inspections as needed.

BMP No. E.4 – Pre-Construction Review of BMP Designs

Brief Description of BMP:
The City's existing practices include the pre-construction review of BMP designs. These procedures include pre-application meetings for large scale developments. The City will continue the review procedures and modify as necessary to maintain compliance.

BMP No. E.5 – Site Inspections During Construction

Brief Description of BMP:
The City performs site inspections during and after construction at new development and redevelopment projects to verify compliance with the runoff control requirements. The City will continue these procedures aimed at preventing the discharge of pollutants to the MS4.

6) POLLUTION PREVENTION AND GOOD HOUSEKEEPING

The City and McHenry County perform a number of activities that meet the requirements of the Pollution Control and Good Housekeeping minimum control measure. These activities include BMP's F.1, F.2, F.3, F.4, F.5 and F.6. A brief description and status is provided below.

BMP No. F.1 – Employee Training Program

Brief Description of BMP:
The City has procedures that provide guidance and training for employees to reduce or eliminate the discharge of pollutants from City owned facilities to the storm sewer system. The City will continue the training program and maintains current certifications for pesticide applications.

BMP No. F.2 - Inspection and Maintenance Program

Brief Description of BMP:
The City has an inspection and maintenance program in place to evaluate and maintain the municipal stormwater facilities. These activities include the City's extensive street sweeping program. The City will continue this program aimed at reducing the amount of debris and other potential pollutants entering the municipal separate storm sewer system.

BMP No. F.3 – Municipal Operations Storm Water Control

Brief Description of BMP:
The City has procedures and policies to prevent the discharge of pollutants to the MS4 from municipal operations. These policies include dewatering procedures, pumping activities and waste disposal. The City will continue these operations and re-evaluate and/or modify as needed to prevent the discharge of pollutants to the MS4.

BMP No. F.4 – Municipal Operations Waste Disposal

Brief Description of BMP:
The City has procedures that require the appropriate disposal of all wastes generated during municipal operations. The City will continue these procedures as needed to maintain compliance with the disposal program.

BMP No. F.5 – Flood Management/Assess Guidelines

Brief Description of BMP:
The City, County, and State have development procedures related to floodplain management and the evaluation of potential development in these areas. The City will continue to enforce these requirements in special flood hazard areas and update as needed to maintain compliance.

BMP No. F.6 – Other Municipal Operations Controls

Brief Description of BMP:

The City regularly evaluates their municipal activities for additional ways to reduce or eliminate pollutants from entering the stormwater system including salt reduction, additional de-icing techniques and other actions. The City will continue to analyze their existing practices and methods for potential alternatives that may reduce or eliminate potential pollutants.

Part C. Information and Data Collection Results

(Provide information and water quality sampling/monitoring data related to illicit discharge detection and elimination collected during the reporting period.)

Illicit Discharge Detection and Elimination

1) Businesses and Commercial Areas

- Potential Storm Water Discharge at Mayfair Furniture and Carpet (March 12, 2015)

Sanitary wastes from a broken private line servicing Mayfair Furniture and Carpet discharged into the ditch and storm drain coming from the property. Cleanouts along the parkway may have been damaged during road construction along Main Street. The storm drains discharge to a detention basin on the east side of the business. However it did not appear that any of the sanitary waste made it to the detention basin. The area was cleaned-up and the piping was subsequently repaired.

- Storm Water Discharge at Kal's Cars (April 2, 2015)

The City observed a hose coming from the business washing machine located inside the building that was discharging wash water into the street and storm drain. The washing machine is used to wash oily shop towels. Although the sanitary drain does not work well the hose was brought back into the building and connected to the sanitary drain.

- Storm Water Discharge at Crystal Lake Country Club (August and October 2015)

The City observed a greenish blue dye discharging into Crystal Creek that parallels the north edge of the Crystal Lake Country Club. The dye is used to suppress the growth of aquatic weeds and algae growing from the bottom of the two ponds located at the country club. The City issued the country club a violation because the material was discharging into Crystal Creek. The country club indicated they will keep the material from entering the creek in the future.

- Circle K Shell Gasoline Service Station (September 2, 2015)

The spill location was at Shell Oil (Circle K Station #6804) on 4811 Northwest Hwy. A sanitary sewer force main leak was observed near the same location of a sanitary break the previous year. A contractor for the service station was called in and the piping was again cleaned and repaired with little impact to the storm water detention ditch behind the property. Once road construction is completed the potential for this type of accident should be alleviated.

- Storm Water Discharge from Old Walmart Lift Station (September 4, 2015)

The City responded to a citizen observation of leaking sanitary sewerage at the old Walmart lift station. The privately owned lift station was inoperable and malfunctioning. Raw sewerage and food grease was flowing from the lift station to the nearby storm water sewer conveyance system. The issue was eventually resolved and a Notice of Violation was issued to the current

owner. Ownership has since changed and improved maintenance and management has been implemented with the City's approval. Otherwise there is a long history of issues at this location.

- Sanitary Sewer Overflow at 210 Elmhurst Road (December 3, 2015)

The City responded to a sanitary sewer overflow from the private manhole which was caused from a blockage between two City manholes. The blockage included a large volume of grease. A portion of this overflow was absorbed into the soil on the private property, and the remainder of the overflow entered into the City storm sewer catch basin. The City cleaned the storm catch basin and storm sewer pipe where the overflow entered. The City's sanitary sewer main was cleaned and televised. The City will monitor sanitary sewer mains in this area to reduce the possibility of backups in the future.

- Potential Storm Water Discharge at KFB Inc. on March 3, 2016

KFB is located at 6207 Commercial Road. The business reclaims engine parts for scrap and reuse. There is the potential for leaking petroleum and antifreeze fluids from old vehicles to discharge into the ground and adjacent ditch area. Old vehicles are stored outside. The ground is composed of dirt and gravel. Old stains were observed but none of the current vehicles appeared to be leaking. The City advised the ownership to bring vehicles inside as soon as possible and provide containment for storage totes of waste oil and transmission fluid, which are located near the service dock and garage door.

2) Storm Water Receiving Bodies – Monitoring

- Crystal Lake – samples were collected once per month at the following locations:
  - Cove Pond discharge pipe into the lake off of North Shore Drive
  - Lake influent into Crystal Creek at Riverside Dr. and Lake Avenue
  - Pinewood and Honeysuckle Dr. inlet into Crystal Lake
  - Effluent discharge manhole from Lippold Park wetlands (off Thornwood Lane)
  - Influent discharge manhole adjacent to Lippold Park golf driving range and wetlands (collected quarterly)
  - Lippold Park – East, Center, and West (all are adjacent to Route 176)

- Cove Pond – samples are collected every other week at the following locations:
  - Influent culvert pipe into Cove Pond near Green Oaks Drive / Crystal Lake Avenue
  - Effluent discharge pipe from Cove Pond along North Shore Drive

- Groundwater Monitoring
  - Six (6) watershed wells northwest of Crystal Lake are monitored quarterly.

Note: Water elevations are recorded at some of the above locations during the monitoring events. Water volumes and depths are recorded at each well location.

The parameters analyzed at the above locations include the following:

- Total Suspended Solids (TSS)
- Carbonaceous Biological Oxygen Demand (CBOD)
- Ammonia-N
- Total Phosphorous
- Fecal Coliform
- Total Coliform
- Chlorides
- Zinc

The following locations from the wastewater plants are sampled weekly.

1) Drainage Ditch to Squaw Creek /unnamed ditch to Sleepy Hollow along railroad tracks, downstream from Sanitary Treatment Plant #3 (collected once per week). Parameters include the following:

   - Temperature
   - pH

2) Sanitary Treatment Plant #2 (collected once per week) – Crystal Creek (Upstream), (Cooling Pond Outfall to Crystal Creek), and Downstream

The parameters analyzed in the receiving stream include the following:

- Dissolved Oxygen (DO)
- Ammonia-N
- Total Phosphorous
- Total Suspended Solids (TSS)
- TKN (Monthly)

The following locations into Sleepy Hollow Creek from Wastewater Plant #3 are sampled quarterly.

1) Effluent to Drainage Ditch (Squaw Creek / unnamed ditch to Sleepy Hollow)
2) Terra Cotta Road downstream of drainage pond
3) Illinois Route 31 north of east Brighton Lane
4) Illinois Route 31 between Squaw Creek Road and Half Mile Road
5) Along Ames Road downstream of Thunderbird Lake
6) Where Sleepy Hollow crosses on Colby Point Road

The parameters analyzed for Sleepy Hollow Creek include the following:

- Total Phosphorous
- Sulfate
- Chloride
- Total Dissolved Solids (TDS)
- Total Suspended Solids (TSS)

- Hardness
- pH
- Temperature

The following location is sampled from Silver Creek once per month as part of the Fox River Study and managed by the Friends of the Fox.

1) Lake Shore Drive and East Park Lane

Three Oaks Recreation Area (TORA)

- ❖ Three samples are collected from the South Lake for clarity (Secchi Disks) and analyzed for the same parameters as the Crystal Lake samples.
- ❖ Three samples are collected from the North Lake for clarity (Secchi Disks) and analyzed for the same parameters as the Crystal Lake samples.

Note: the monitoring at TORA is part of the Volunteer Lake Management Program (VLMP), which is managed through the Illinois Environmental Protection Agency (IEPA)

Other Receiving Waters with no Documented Monitoring

- Kishwaukee River
- Hampton Hills Unnamed Wetlands
- Woods Creek – North & South Branches
- Veterans Acres Pond

<u>Pollution Prevention /Good Housekeeping</u>
(March 2015 thru March 2016)

1) The City has a Storm Water Management Ordinance (No. 6535). The Storm Water Ordinance documents an illicit discharge and connection section.

2) All public works divisions have prepared and implemented Spill Prevention Control and Countermeasure Plans (SPCC). As a requirement of the SPCC Plan, quarterly inspections are conducted and documented at each of the facility divisions.

3) All employees in Public Works are trained in spill and clean-up procedures. This includes storm water control and flood management practices.

4) Chemicals and waste products in each division are stored following the SPCC guidelines.

5) Crystal Lake businesses with the potential for accidental or illicit discharges are required at a minimum to fill out a Wastewater Discharge Questionnaire, and in some

cases a Slug Control Plan or Accidental Spill Plan. The Plans document the potential for spills and the prevention of pollutants into both sanitary and storm water sources.

6) All employees are trained in observing the potential for illicit discharges from industrial, commercial, and residential sources.

Education and Outreach

The City has been attending and participating in the Silver Creek and Sleepy Hollow Creek Watershed planning coalition meetings, which are held quarterly. School groups are also given tours and conduct water monitoring for their science classes at Sanitary Treatment Plant #2 in the receiving stream (Crystal Creek).

Thursday, November 19, 2015

Ms. Emma Kohl

Crystal Lake, City of - WWTP
PO Box 597
Crystal Lake, IL 60014

TEL: (815) 459-2020

FAX: (815) 477-0163

RE: Sleepy Hollow Creek PAS WO: 15K0284

Prairie Analytical Systems, Inc. received 6 sample(s) on 11/16/2015 for the analyses presented in the following report.

All applicable quality control procedures met method specific acceptance criteria unless otherwise noted.

If you have any questions, please feel free to contact me at (217) 753-1148.

Respectfully submitted,

Christina E. Pierce
Project Manager

Certifications: NELAP/NELAC - IL #100323

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek
Lab Order: 15K0284
Client Sample ID: Ames
Lab ID: 15K0284-01
Collection Date: 11/16/15 10:50
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**0.854**	0.250		mg/L	10	11/17/15 16:00	11/17/15 23:46	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	11/17/15 16:00	11/17/15 23:46	EPA300.0	JKK
Nitrate-Nitrite (as N)	**0.854**	0.500		mg/L	10	11/17/15 16:00	11/17/15 23:46	EPA 300.0	JKK

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek
Lab Order: 15K0284
Client Sample ID: Colby
Lab ID: 15K0284-02
Collection Date: 11/16/15 11:05
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**0.815**	0.250		mg/L	10	11/17/15 16:00	11/18/15 0:05	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	11/17/15 16:00	11/18/15 0:05	EPA300.0	JKK
Nitrate-Nitrite (as N)	**0.815**	0.500		mg/L	10	11/17/15 16:00	11/18/15 0:05	EPA 300.0	JKK

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek
Lab Order: 15K0284
Client Sample ID: Eff Grab
Lab ID: 15K0284-03
Collection Date: 11/16/15 9:50
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**23.0**	2.50		mg/L	100	11/17/15 16:00	11/18/15 10:05	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	11/17/15 16:00	11/18/15 0:24	EPA300.0	JKK
Nitrate-Nitrite (as N)	**23.0**	2.75		mg/L	100	11/17/15 16:00	11/18/15 10:05	EPA 300.0	JKK

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek
Client Sample ID: Half Mile
Collection Date: 11/16/15 10:35

Lab Order: 15K0284
Lab ID: 15K0284-04
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**1.05**	0.250		mg/L	10	11/17/15 16:00	11/18/15 0:43	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	11/17/15 16:00	11/18/15 0:43	EPA300.0	JKK
Nitrate-Nitrite (as N)	**1.05**	0.500		mg/L	10	11/17/15 16:00	11/18/15 0:43	EPA 300.0	JKK

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek
Client Sample ID: IL 31
Collection Date: 11/16/15 10:20

Lab Order: 15K0284
Lab ID: 15K0284-05
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**4.61**	0.250		mg/L	10	11/17/15 16:00	11/18/15 1:02	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	11/17/15 16:00	11/18/15 1:02	EPA300.0	JKK
Nitrate-Nitrite (as N)	**4.61**	0.500		mg/L	10	11/17/15 16:00	11/18/15 1:02	EPA 300.0	JKK

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek
Lab Order: 15K0284
Client Sample ID: Terra Cotta
Lab ID: 15K0284-06
Collection Date: 11/16/15 10:05
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**12.1**	2.50		mg/L	100	11/17/15 16:00	11/18/15 10:24	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	11/17/15 16:00	11/18/15 1:21	EPA300.0	JKK
Nitrate-Nitrite (as N)	**12.1**	2.75		mg/L	100	11/17/15 16:00	11/18/15 10:24	EPA 300.0	JKK

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek **Lab Order:** 15K0284

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y006350 - EPA 300.0/SW 9056A Anions										
Blank (Y006350-BLK1)				Prepared & Analyzed: 11/17/2015						
Nitrate (as N)	U	0.0250	mg/L							
Nitrite (as N)	U	0.0250	mg/L							
LCS (Y006350-BS1)				Prepared & Analyzed: 11/17/2015						
Nitrate (as N)	0.117	0.0250	mg/L	0.11295		103	90-110			
Nitrite (as N)	0.160	0.0250	mg/L	0.15223		105	90-110			
Matrix Spike (Y006350-MS1)		**Source: 15K0300-03**		Prepared & Analyzed: 11/17/2015						
Nitrate (as N)	2.80	0.263	mg/L	1.1889	1.63	99	90-110			
Nitrite (as N)	1.70	0.263	mg/L	1.6024	0.109	99	90-110			
Matrix Spike (Y006350-MS2)		**Source: 15K0276-01**		Prepared & Analyzed: 11/17/2015						
Nitrate (as N)	0.752	0.128	mg/L	0.57923	0.198	96	90-110			
Nitrite (as N)	0.829	0.128	mg/L	0.78067	0.0345	102	90-110			
Matrix Spike Dup (Y006350-MSD1)		**Source: 15K0300-03**		Prepared & Analyzed: 11/17/2015						
Nitrate (as N)	2.80	0.263	mg/L	1.1889	1.63	98	90-110	0.2	20	
Nitrite (as N)	1.71	0.263	mg/L	1.6024	0.109	100	90-110	0.5	20	
Matrix Spike Dup (Y006350-MSD2)		**Source: 15K0276-01**		Prepared & Analyzed: 11/17/2015						
Nitrate (as N)	0.756	0.128	mg/L	0.57923	0.198	96	90-110	0.6	20	
Nitrite (as N)	0.824	0.128	mg/L	0.78067	0.0345	101	90-110	0.6	20	

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek **Lab Order:** 15K0284

Notes and Definitions

*	NELAC certified compound.
U	Analyte not detected (i.e. less than RL or MDL).

Chain of Custody Record

Central IL - 1210 Capital Airport Drive - Springfield, IL 62707-8490 - Phone (217) 753-1148 - Facsimile (217) 753-1152
Chicago IL Office - 9114 Virginia Rd., Ste 112 - Lake in the Hills, IL 60156 - Phone (847) 651-2604 - Facsimile (847) 458-9680
Central/Southern IL Office - Phone (217) 414-7762 - Facsimile (217) 223-7922

Prairie Analytical Systems, INCORPORATED
www.prairieanalytical.com

Client	City of Crystal Lake (WWTP)
Address	100 W. Woodstock
City, State, Zip Code	Crystal Lake IL 60039
Phone / Facsimile	(815) 459-2020
Project Name / Number	~~Special Projects~~ Sleepy Hollow Creek
Project Location	Sleepy Hollow Creek
P.O. # or Invoice To	Special Projects
Contact Person	Emma

Reporting: TACO ☐ Resid ☐ Ind/Comm; CALM ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F; RISC ☐ Resid ☐ Indust

Sample Description	Sampling Date	Sampling Time	Matrix Code	Preserv Code	No. of Containers	Sample Type Comp	Sample Type Grab	Analysis and/or Method Requested: Nitrate	Sampler Comments
AMES	11/16/15	~~10:50~~ 10:40	A	1	1		✓	✓	
COLBY		11:05		1	1		✓	✓	
Eff3 grab		9:50		1	1		✓	✓	
Half-mile		10:35		1	1		✓	✓	
IL 31		10:20		1	1		✓	✓	
Terra Cotta	11/16/15	10:05	A	1	1		✓	✓	

Matrix Code	A - Aqueous	DW - Drinking Water	GW - Ground Water	NA - Non-Aqueous Liquid	S - Solid	O - Oil	X - Other (Specify)
Preserv Code	0 - None	1 - HCl	2 - H2SO4	3 - HNO3	4 - NaOH	5 - 5035 Kit	X - Other (Specify)

Relinquished By	Date	Time	Received By	Date	Time	Method of Shipment
[signature]	11/16/15	1445	[signature]	11/16/15	1445	
[signature]	11/16/15	1530	[signature]	11/16/15	1530	
[signature]	11/16/15	1715	[signature]	11-17-15	11:15	UPS

Special Instructions:

Turnaround Time: Standard ☒ Rush ☐
Date Required:

QC Level: 1 ☐ 2 ☒ 3 ☐ 4 ☐

On wet ice? Yes / No

Temperature (°C): 2.3

PAS COC Rev. 3

Page 1 of 1

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Thursday, March 17, 2016

Ms. Emma Kohl

Crystal Lake, City of - WWTP
PO Box 597
Crystal Lake, IL 60014

TEL: (815) 459-2020

FAX: (815) 477-0163

RE: Sleepy Hollow Creek Watershed PAS WO: 16C0224

Prairie Analytical Systems, Inc. received 6 sample(s) on 3/9/2016 for the analyses presented in the following report.

All applicable quality control procedures met method specific acceptance criteria unless otherwise noted.

This report shall not be reproduced, except in full, without the prior written consent of Prairie Analytical Systems, Inc.

If you have any questions, please feel free to contact me at (217) 753-1148.

Respectfully submitted,

Christina E. Pierce
Project Manager

Certifications: NELAP/NELAC - IL #100323

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed
Client Sample ID: Effluent STP 3
Collection Date: 3/8/16 8:50

Lab Order: 16C0224
Lab ID: 16C0224-01
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**1.61**	0.250		mg/L	10	3/16/16 16:00	3/17/16 2:12	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	3/16/16 16:00	3/17/16 2:12	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	**2.34**	1.00		mg/L	10	3/16/16 16:00	3/17/16 2:12	EPA300.0/SM	KSH
***Total Kjeldahl Nitrogen**	**0.729**	0.500		mg/L	1	3/14/16 12:29	3/15/16 15:29	SM4500NH3-	KSH

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed
Client Sample ID: Terra Cotta Dr
Collection Date: 3/8/16 9:15

Lab Order: 16C0224
Lab ID: 16C0224-02
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**8.43**	2.50		mg/L	100	3/16/16 16:00	3/17/16 8:17	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	3/16/16 16:00	3/17/16 2:31	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	**9.95**	3.25		mg/L	100	3/16/16 16:00	3/17/16 8:17	EPA300.0/SM	KSH
***Total Kjeldahl Nitrogen**	**1.52**	0.500		mg/L	1	3/14/16 12:29	3/15/16 15:29	SM4500NH3-	KSH

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed
Client Sample ID: Rte 31/ Brighton Ln
Collection Date: 3/8/16 9:35

Lab Order: 16C0224
Lab ID: 16C0224-03
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**3.63**	0.250		mg/L	10	3/16/16 16:00	3/17/16 2:50	EPA300.0	JKK
***Nitrite (as N)**	**0.979**	0.250		mg/L	10	3/16/16 16:00	3/17/16 2:50	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	**5.65**	1.00		mg/L	10	3/16/16 16:00	3/17/16 2:50	EPA300.0/SM	KSH
***Total Kjeldahl Nitrogen**	**1.04**	0.500		mg/L	1	3/14/16 12:29	3/15/16 15:29	SM4500NH3-	KSH

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed
Client Sample ID: Half Mile Rd
Collection Date: 3/8/16 9:55

Lab Order: 16C0224
Lab ID: 16C0224-04
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**1.61**	0.250		mg/L	10	3/16/16 16:00	3/17/16 3:09	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	3/16/16 16:00	3/17/16 3:09	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	**2.28**	1.00		mg/L	10	3/16/16 16:00	3/17/16 3:09	EPA300.0/SM	KSH
***Total Kjeldahl Nitrogen**	**0.667**	0.500		mg/L	1	3/14/16 12:29	3/15/16 15:29	SM4500NH3-	KSH

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed
Client Sample ID: Ames Rd
Collection Date: 3/8/16 10:15

Lab Order: 16C0224
Lab ID: 16C0224-05
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**1.12**	0.250		mg/L	10	3/16/16 16:00	3/17/16 3:28	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	3/16/16 16:00	3/17/16 3:28	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	**1.85**	1.00		mg/L	10	3/16/16 16:00	3/17/16 3:28	EPA300.0/SM	KSH
***Total Kjeldahl Nitrogen**	**0.723**	0.500		mg/L	1	3/14/16 12:29	3/15/16 15:29	SM4500NH3-	KSH

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed
Lab Order: 16C0224
Client Sample ID: Colby Point Rd
Lab ID: 16C0224-06
Collection Date: 3/8/16 10:35
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Anions by Ion Chromatography									
***Nitrate (as N)**	**0.996**	0.250		mg/L	10	3/16/16 16:00	3/17/16 3:47	EPA300.0	JKK
*Nitrite (as N)	U	0.250		mg/L	10	3/16/16 16:00	3/17/16 3:47	EPA300.0	JKK
Conventional Chemistry Parameters									
Total Nitrogen	**1.86**	1.00		mg/L	10	3/16/16 16:00	3/17/16 3:47	EPA300.0/SM	KSH
***Total Kjeldahl Nitrogen**	**0.865**	0.500		mg/L	1	3/14/16 12:29	3/15/16 15:29	SM4500NH3-	KSH

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed **Lab Order:** 16C0224

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Z001387 - EPA 300.0/SW 9056A Anions										
Blank (Z001387-BLK1)				Prepared & Analyzed: 03/16/2016						
Nitrate (as N)	U	0.0250	mg/L							
Nitrite (as N)	U	0.0250	mg/L							
LCS (Z001387-BS1)				Prepared & Analyzed: 03/16/2016						
Nitrate (as N)	0.112	0.0250	mg/L	0.11295		99	90-110			
Nitrite (as N)	0.162	0.0250	mg/L	0.15223		107	90-110			
Matrix Spike (Z001387-MS1)	**Source: 16C0351-01**			Prepared & Analyzed: 03/16/2016						
Nitrate (as N)	1.54	0.250	mg/L	1.1295	0.517	90	90-110			
Nitrite (as N)	1.58	0.250	mg/L	1.5223	ND	104	90-110			
Matrix Spike (Z001387-MS2)	**Source: 16C0352-01**			Prepared: 03/16/2016 Analyzed: 03/17/2016						
Nitrate (as N)	1.29	0.250	mg/L	1.1295	0.264	91	90-110			
Nitrite (as N)	1.58	0.250	mg/L	1.5223	ND	104	90-110			
Matrix Spike Dup (Z001387-MSD1)	**Source: 16C0351-01**			Prepared & Analyzed: 03/16/2016						
Nitrate (as N)	1.53	0.250	mg/L	1.1295	0.517	90	90-110	0.3	20	
Nitrite (as N)	1.60	0.250	mg/L	1.5223	ND	105	90-110	2	20	
Matrix Spike Dup (Z001387-MSD2)	**Source: 16C0352-01**			Prepared: 03/16/2016 Analyzed: 03/17/2016						
Nitrate (as N)	1.28	0.250	mg/L	1.1295	0.264	90	90-110	1	20	
Nitrite (as N)	1.58	0.250	mg/L	1.5223	ND	104	90-110	0.4	20	

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed **Lab Order:** 16C0224

Conventional Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Z001316 - EPA 351.4/SM 4500-Norg C TKN										
Blank (Z001316-BLK1)				Prepared: 03/14/2016 Analyzed: 03/15/2016						
Total Kjeldahl Nitrogen	U	0.500	mg/L							
LCS (Z001316-BS1)				Prepared: 03/14/2016 Analyzed: 03/15/2016						
Total Kjeldahl Nitrogen	4.38	0.500	mg/L	5.0000		88	70-130			
LCS Dup (Z001316-BSD1)				Prepared: 03/14/2016 Analyzed: 03/15/2016						
Total Kjeldahl Nitrogen	4.18	0.500	mg/L	5.0000		84	70-130	5	20	
Duplicate (Z001316-DUP1)	**Source: 16C0260-01**			Prepared: 03/14/2016 Analyzed: 03/15/2016						
Total Kjeldahl Nitrogen	34.2	2.50	mg/L		35.7			4	20	
Matrix Spike (Z001316-MS1)	**Source: 16C0260-01**			Prepared: 03/14/2016 Analyzed: 03/15/2016						
Total Kjeldahl Nitrogen	57.6	5.00	mg/L	25.000	35.7	88	70-130			
Matrix Spike Dup (Z001316-MSD1)	**Source: 16C0260-01**			Prepared: 03/14/2016 Analyzed: 03/15/2016						
Total Kjeldahl Nitrogen	56.9	5.00	mg/L	25.000	35.7	85	70-130	1	20	

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Sleepy Hollow Creek Watershed **Lab Order:** 16C0224

Notes and Definitions

*	NELAC certified compound.
U	Analyte not detected (i.e. less than RL or MDL).

Chain of Custody Record

Central IL - 1210 Capital Airport Drive - Springfield, IL 62707-8490 - Phone (217) 753-1148 - Facsimile (217) 753-1152
Chicago IL Office - 9114 Virginia Rd., Ste 112 - Lake in the Hills, IL 60156 - Phone (847) 651-2604 - Facsimile (847) 458-9680
Central/Southern IL Office - Phone (217) 414-7762 - Facsimile (217) 223-7922

Prairie Analytical Systems, INCORPORATED
www.prairieanalytical.com

Client	CITY OF CRYSTAL LAKE
Address	100 WEST WOODSTOCK ST.
City, State, Zip Code	CRYSTAL LAKE, IL 60039-0597
Phone / Facsimile	815-459-2020 EXT. 4167
Project Name / Number	SLEEPY HOLLOW CREEK WATERSHED
Project Location	SLEEPY HOLLOW CREEK
P.O. # or Invoice To	
Contact Person	EMMA KOHL - 4199

Analysis and/or Method Requested: TOTAL NITROGEN (NITRATE-NITRITE, TKN)

Reporting: TACO ☐ Resid ☐ Ind/Comm; CALM ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F; RISC ☐ Resid ☐ Indust

Sample Description	Sampling Date	Sampling Time	Matrix Code	Preserv Code	No. of Containers	Sample Type Comp	Sample Type Grab	TOTAL NITROGEN	Sampler Comments
EFFLUENT-STP3	3-8-16	0850	A	2	1		✓	✓	
TERRA COTTA DR.	3-8-16	0915	A	2	1		✓	✓	
RTE 31/BRIGHTON LN	3-8-16	0935	A	2	1		✓	✓	
HALF MILE RD.	3-8-16	~~1015~~ 0955	A	2	1		✓	✓	
AMES RD.	3-8-16	1015	A	2	1		✓	✓	
COLBY POINT RD.	3-8-16	1035	A	2	1		✓	✓	

Matrix Code	A - Aqueous	DW - Drinking Water	GW - Ground Water	NA - Non-Aqueous Liquid	S - Solid	O - Oil	X - Other (Specify)
Preserv Code	0 - None	1 - HCl	2 - H2SO4	3 - HNO3	4 - NaOH	5 - 5035 Kit	X - Other (Specify)

Relinquished By	Date	Time	Received By	Date	Time	Method of Shipment
Ken Krueger	3-8-16	1110	Emma Kohl	3-8-16	1110	
Emma Kohl	3-9-16	10:30	Matthew Allen	3/9/16	1030	
M Allen	3/9/16	1220	M Allen	3/9/16	1220	UPS
M Allen	3/9/16	1700				

Special Instructions:

Turnaround Time: Standard ☒ Rush ☐ Date Required:

QC Level: 1 ☒ 2 ☐ 3 ☐ 4 ☐

On wet ice? Yes No

Temperature (°C): 2.6

3-10-16 10:10

PAS COC Rev. 3

Page 1 of 1

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Prairie Analytical Systems, INCORPORATED

Friday, May 22, 2015

Ms. Emma Kohl

Crystal Lake, City of - WWTP
PO Box 597
Crystal Lake, IL 60014

TEL: (815) 459-2020

FAX: (815) 477-0163

RE: Lippold Park Effluent / Manhole PAS WO: 15E0103

Prairie Analytical Systems, Inc. received 2 sample(s) on 5/5/2015 for the analyses presented in the following report.

All applicable quality control procedures met method specific acceptance criteria unless otherwise noted.

If you have any questions, please feel free to contact me at (217) 753-1148.

Respectfully submitted,

Jean-Pierre Rouanet For Kristen A. Potter
Project Manager

Certifications: NELAP/NELAC - IL #100323

Prairie Analytical Systems, Inc. **Date:** 5/22/2015

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103
Client Sample ID: Manhole Grabs (Comp) **Lab ID:** 15E0103-01
Collection Date: 5/4/15 14:30 **Matrix:** Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Volatile Organic Compounds by GC-MS									
Acrolein	U	50.0		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Acrylonitrile	U	50.0		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Benzene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Bromodichloromethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Bromoform	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Bromomethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Carbon disulfide	U	10.0		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Carbon tetrachloride	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Chlorobenzene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Chloroethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
2-Chloroethyl vinyl ether	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Chloroform	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Chloromethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Dibromochloromethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
1,1-Dichloroethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
1,2-Dichloroethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
1,1-Dichloroethene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
cis-1,2-Dichloroethene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
trans-1,2-Dichloroethene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
1,2-Dichloropropane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
cis-1,3-Dichloropropene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
trans-1,3-Dichloropropene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Ethylbenzene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Methylene chloride	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
1,1,2,2-Tetrachloroethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Tetrachloroethene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Toluene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
1,1,1-Trichloroethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
1,1,2-Trichloroethane	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Trichloroethene	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Vinyl acetate	U	10.0		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Vinyl chloride	U	5.00		µg/L	1	5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Surrogate: 4-Bromofluorobenzene		*100 %*		*70-110*		5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Surrogate: Fluorobenzene		*99 %*		*85-105*		5/14/15 15:35	5/14/15 23:03	EPA624	JLS
Surrogate: Pentafluorobenzene		*100 %*		*85-110*		5/14/15 15:35	5/14/15 23:03	EPA624	JLS

Client Sample ID: Manhole Comp **Lab ID:** 15E0103-02
Collection Date: 5/5/15 10:15 **Matrix:** Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Semi-Volatile Organic Compounds by GC-MS									
Acenaphthene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Acenaphthylene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Anthracene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Benzidine	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Benzo(a)anthracene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Benzo(b)fluoranthene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Benzo(k)fluoranthene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD

Prairie Analytical Systems, Inc. **Date:** 5/22/2015

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103
Client Sample ID: Manhole Comp **Lab ID:** 15E0103-02
Collection Date: 5/5/15 10:15 **Matrix:** Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
Benzo(g,h,i)perylene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Benzo(a)pyrene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Benzyl alcohol	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Bis(2-chloroethoxy)methane	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Bis(2-chloroethyl)ether	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Bis(2-chloroisopropyl)ether	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Bis(2-ethylhexyl)phthalate	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
4-Bromophenyl phenyl ether	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Butyl benzyl phthalate	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
4-Chloro-3-methylphenol	U	21.5		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2-Chloronaphthalene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2-Chlorophenol	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
4-Chlorophenyl phenyl ether	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Chrysene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Di-n-butyl phthalate	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Di-n-octyl phthalate	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Dibenz(a,h)anthracene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
1,2-Dichlorobenzene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
1,3-Dichlorobenzene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
1,4-Dichlorobenzene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
3,3'-Dichlorobenzidine	U	21.5		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2,4-Dichlorophenol	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Diethyl phthalate	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Dimethyl phthalate	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2,4-Dimethylphenol	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
4,6-Dinitro-2-methylphenol	U	53.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2,4-Dinitrophenol	U	53.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2,4-Dinitrotoluene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2,6-Dinitrotoluene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
1,2-Diphenylhydrazine	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Fluoranthene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Fluorene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Hexachlorobenzene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Hexachlorobutadiene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Hexachlorocyclopentadiene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Hexachloroethane	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Indeno(1,2,3-cd)pyrene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Isophorone	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Naphthalene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Nitrobenzene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
N-Nitroso-di-n-propylamine	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
N-Nitrosodimethylamine	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
N-Nitrosodiphenylamine	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
2-Nitrophenol	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
4-Nitrophenol	U	53.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Pentachlorophenol	U	53.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Phenanthrene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Phenol	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Pyrene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
1,2,4-Trichlorobenzene	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD

Prairie Analytical Systems, Inc. **Date:** 5/22/2015

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103
Client Sample ID: Manhole Comp **Lab ID:** 15E0103-02
Collection Date: 5/5/15 10:15 **Matrix:** Water

Analyses	Result	Limit	Qual	Units	DF	Date Prepared	Date Analyzed	Method	Analyst
2,4,6-Trichlorophenol	U	10.8		µg/L	1	5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Surrogate: 2-Fluorobiphenyl		*78 %*		*38-149*		5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Surrogate: 2-Fluorophenol		*27 %*		*10-95*		5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Surrogate: Nitrobenzene-d5		*72 %*		*50-115*		5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Surrogate: Phenol-d6		*12 %*		*10-23*		5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Surrogate: 4-Terphenyl-d14		*76 %*		*45-115*		5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Surrogate: 2,4,6-Tribromophenol		*53 %*		*30-100*		5/7/15 10:22	5/15/15 1:11	EPA625	AJD
Pesticides and PCBs by GC-ECD									
Aldrin	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
alpha-BHC	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
beta-BHC	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
gamma-BHC	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
delta-BHC	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
alpha-Chlordane	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
gamma-Chlordane	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
4,4'-DDD	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
4,4'-DDE	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
4,4'-DDT	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Dieldrin	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Endosulfan I	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Endosulfan II	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Endosulfan sulfate	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Endrin	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Endrin aldehyde	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Heptachlor	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Heptachlor epoxide	U	1.03		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Toxaphene	U	3.09		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Aroclor 1016	U	0.515		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Aroclor 1221	U	0.515		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Aroclor 1232	U	0.515		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Aroclor 1242	U	0.515		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Aroclor 1248	U	0.515		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Aroclor 1254	U	0.515		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Aroclor 1260	U	0.515		µg/L	1	5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Surrogate: Decachlorobiphenyl		*27 %*	C1, S	*60-130*		5/7/15 10:19	5/11/15 20:28	EPA608	AJD
Surrogate: Tetrachloro-m-xylene		*37 %*	C1, S	*60-130*		5/7/15 10:19	5/11/15 20:28	EPA608	AJD

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002479 - EPA 624 VOA										
Blank (Y002479-BLK1)				Prepared & Analyzed: 05/14/201						
Acrolein	U	50.0	µg/L							
Acrylonitrile	U	50.0	µg/L							
Benzene	U	5.00	µg/L							
Bromodichloromethane	U	0.166	µg/L							M
Bromoform	U	5.00	µg/L							
Bromomethane	U	5.00	µg/L							
Carbon disulfide	U	10.0	µg/L							
Carbon tetrachloride	U	5.00	µg/L							
Chlorobenzene	U	5.00	µg/L							
Chloroethane	U	5.00	µg/L							
2-Chloroethyl vinyl ether	U	5.00	µg/L							
Chloroform	U	5.00	µg/L							
Chloromethane	U	5.00	µg/L							
Dibromochloromethane	U	5.00	µg/L							
1,1-Dichloroethane	U	5.00	µg/L							
1,2-Dichloroethane	U	5.00	µg/L							
1,1-Dichloroethene	U	5.00	µg/L							
cis-1,2-Dichloroethene	U	5.00	µg/L							
trans-1,2-Dichloroethene	U	5.00	µg/L							
1,2-Dichloropropane	U	5.00	µg/L							
cis-1,3-Dichloropropene	U	5.00	µg/L							
trans-1,3-Dichloropropene	U	5.00	µg/L							
Ethylbenzene	U	5.00	µg/L							
Methylene chloride	U	5.00	µg/L							
1,1,2,2-Tetrachloroethane	U	5.00	µg/L							
Tetrachloroethene	U	5.00	µg/L							
Toluene	U	5.00	µg/L							
1,1,1-Trichloroethane	U	5.00	µg/L							
1,1,2-Trichloroethane	U	5.00	µg/L							
Trichloroethene	U	5.00	µg/L							
Vinyl acetate	U	10.0	µg/L							
Vinyl chloride	U	5.00	µg/L							
Surrogate: 4-Bromofluorobenzene	*30.3*		*µg/L*	*30.000*		*101*	*70-110*			
Surrogate: Fluorobenzene	*29.9*		*µg/L*	*30.000*		*100*	*85-105*			
Surrogate: Pentafluorobenzene	*29.4*		*µg/L*	*30.000*		*98*	*85-110*			

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002479 - EPA 624 VOA										
LCS (Y002479-BS1)				Prepared & Analyzed: 05/14/201						
Acrolein	94.4	50.0	µg/L	100.00		94	68-149			
Acrylonitrile	104	50.0	µg/L	100.00		104	21-157			
Benzene	19.9	5.00	µg/L	20.000		100	78-126			
Bromodichloromethane	20.6	0.166	µg/L	20.000		103	82-126			
Bromoform	20.6	5.00	µg/L	20.000		103	45-169			
Bromomethane	16.2	5.00	µg/L	20.000		81	76-130			
Carbon disulfide	46.3	10.0	µg/L	40.000		116	70-130			
Carbon tetrachloride	20.6	5.00	µg/L	20.000		103	70-136			
Chlorobenzene	19.3	5.00	µg/L	20.000		97	80-124			
Chloroethane	17.9	5.00	µg/L	20.000		89	70-148			
2-Chloroethyl vinyl ether	45.7	5.00	µg/L	40.000		114	45-180			
Chloroform	20.5	5.00	µg/L	20.000		102	74-134			
Chloromethane	15.8	5.00	µg/L	20.000		79	61-143			
Dibromochloromethane	20.1	5.00	µg/L	20.000		101	80-121			
1,1-Dichloroethane	20.3	5.00	µg/L	20.000		102	75-137			
1,2-Dichloroethane	20.3	5.00	µg/L	20.000		101	80-135			
1,1-Dichloroethene	19.8	5.00	µg/L	20.000		99	75-130			
cis-1,2-Dichloroethene	19.9	5.00	µg/L	20.000		100	70-130			
trans-1,2-Dichloroethene	19.7	5.00	µg/L	20.000		98	74-136			
1,2-Dichloropropane	20.5	5.00	µg/L	20.000		103	77-133			
cis-1,3-Dichloropropene	20.0	5.00	µg/L	20.000		100	77-132			
trans-1,3-Dichloropropene	20.3	5.00	µg/L	20.000		102	75-133			
Ethylbenzene	19.6	5.00	µg/L	20.000		98	80-120			
Methylene chloride	19.8	5.00	µg/L	20.000		99	74-134			
1,1,2,2-Tetrachloroethane	19.0	5.00	µg/L	20.000		95	82-123			
Tetrachloroethene	18.3	5.00	µg/L	20.000		91	77-122			
Toluene	20.1	5.00	µg/L	20.000		100	78-126			
1,1,1-Trichloroethane	20.6	5.00	µg/L	20.000		103	74-130			
1,1,2-Trichloroethane	19.5	5.00	µg/L	20.000		97	80-129			
Trichloroethene	20.1	5.00	µg/L	20.000		100	75-135			
Vinyl acetate	38.5	10.0	µg/L	40.000		96	70-130			
Vinyl chloride	21.5	5.00	µg/L	20.000		108	73-157			
Surrogate: 4-Bromofluorobenzene	*30.3*		*µg/L*	*30.000*		*101*	*70-110*			
Surrogate: Fluorobenzene	*30.4*		*µg/L*	*30.000*		*101*	*85-105*			
Surrogate: Pentafluorobenzene	*30.6*		*µg/L*	*30.000*		*102*	*85-110*			

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002325 - EPA 625 SVOC										
Blank (Y002325-BLK1)				Prepared: 05/07/201 Analyzed: 05/15/201						
Acenaphthene	U	10.0	µg/L							
Acenaphthylene	U	10.0	µg/L							
Anthracene	U	10.0	µg/L							
Benzidine	U	10.0	µg/L							
Benzo(a)anthracene	U	10.0	µg/L							
Benzo(b)fluoranthene	U	10.0	µg/L							
Benzo(k)fluoranthene	U	10.0	µg/L							
Benzo(g,h,i)perylene	U	10.0	µg/L							
Benzo(a)pyrene	U	10.0	µg/L							
Benzyl alcohol	U	10.0	µg/L							
Bis(2-chloroethoxy)methane	U	10.0	µg/L							
Bis(2-chloroethyl)ether	U	10.0	µg/L							
Bis(2-chloroisopropyl)ether	U	10.0	µg/L							
Bis(2-ethylhexyl)phthalate	U	10.0	µg/L							
4-Bromophenyl phenyl ether	U	10.0	µg/L							
Butyl benzyl phthalate	U	10.0	µg/L							
4-Chloro-3-methylphenol	U	20.0	µg/L							
2-Chloronaphthalene	U	10.0	µg/L							
2-Chlorophenol	U	10.0	µg/L							
4-Chlorophenyl phenyl ether	U	10.0	µg/L							
Chrysene	U	10.0	µg/L							
Di-n-butyl phthalate	U	10.0	µg/L							
Di-n-octyl phthalate	U	10.0	µg/L							
Dibenz(a,h)anthracene	U	10.0	µg/L							
1,2-Dichlorobenzene	U	10.0	µg/L							
1,3-Dichlorobenzene	U	10.0	µg/L							
1,4-Dichlorobenzene	U	10.0	µg/L							
3,3'-Dichlorobenzidine	U	20.0	µg/L							
2,4-Dichlorophenol	U	10.0	µg/L							
Diethyl phthalate	U	10.0	µg/L							
Dimethyl phthalate	U	10.0	µg/L							
2,4-Dimethylphenol	U	10.0	µg/L							
4,6-Dinitro-2-methylphenol	U	50.0	µg/L							
2,4-Dinitrophenol	U	50.0	µg/L							
2,4-Dinitrotoluene	U	10.0	µg/L							
2,6-Dinitrotoluene	U	10.0	µg/L							
1,2-Diphenylhydrazine	U	10.0	µg/L							
Fluoranthene	U	10.0	µg/L							
Fluorene	U	10.0	µg/L							
Hexachlorobenzene	U	10.0	µg/L							
Hexachlorobutadiene	U	10.0	µg/L							
Hexachlorocyclopentadiene	U	10.0	µg/L							
Hexachloroethane	U	10.0	µg/L							
Indeno(1,2,3-cd)pyrene	U	10.0	µg/L							

Prairie Analytical Systems, Inc. **Date:** 5/22/2015

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002325 - EPA 625 SVOC										
Blank (Y002325-BLK1)				Prepared: 05/07/201 Analyzed: 05/15/201						
Isophorone	U	10.0	µg/L							
Naphthalene	U	10.0	µg/L							
Nitrobenzene	U	10.0	µg/L							
N-Nitroso-di-n-propylamine	U	10.0	µg/L							
N-Nitrosodimethylamine	U	10.0	µg/L							
N-Nitrosodiphenylamine	U	10.0	µg/L							
2-Nitrophenol	U	10.0	µg/L							
4-Nitrophenol	U	50.0	µg/L							
Pentachlorophenol	U	50.0	µg/L							
Phenanthrene	U	10.0	µg/L							
Phenol	U	10.0	µg/L							
Pyrene	U	10.0	µg/L							
1,2,4-Trichlorobenzene	U	10.0	µg/L							
2,4,6-Trichlorophenol	U	10.0	µg/L							
Surrogate: 2-Fluorobiphenyl	*17.0*		*µg/L*	*20.000*		*85*	*38-149*			
Surrogate: 2-Fluorophenol	*8.59*		*µg/L*	*30.000*		*29*	*10-95*			
Surrogate: Nitrobenzene-d5	*15.0*		*µg/L*	*20.000*		*75*	*50-115*			
Surrogate: Phenol-d6	*3.53*		*µg/L*	*30.000*		*12*	*10-23*			
Surrogate: 4-Terphenyl-d14	*18.5*		*µg/L*	*20.000*		*92*	*45-115*			
Surrogate: 2,4,6-Tribromophenol	*15.0*		*µg/L*	*30.000*		*50*	*30-100*			
LCS (Y002325-BS1)				Prepared: 05/07/201 Analyzed: 05/15/201						
Acenaphthene	17.3	10.0	µg/L	20.000		87	47-145			
Acenaphthylene	17.8	10.0	µg/L	20.000		89	33-145			
Anthracene	18.1	10.0	µg/L	20.000		90	27-133			
Benzidine	14.8	10.0	µg/L	40.000		37	15-130			
Benzo(a)anthracene	20.5	10.0	µg/L	20.000		103	33-143			
Benzo(b)fluoranthene	18.6	10.0	µg/L	20.000		93	24-159			
Benzo(k)fluoranthene	20.2	10.0	µg/L	20.000		101	11-162			
Benzo(g,h,i)perylene	23.8	10.0	µg/L	20.000		119	5-219			
Benzo(a)pyrene	20.4	10.0	µg/L	20.000		102	17-163			
Bis(2-chloroethoxy)methane	13.7	10.0	µg/L	20.000		69	33-184			
Bis(2-chloroethyl)ether	13.8	10.0	µg/L	20.000		69	12-158			
Bis(2-chloroisopropyl)ether	13.2	10.0	µg/L	20.000		66	36-166			
Bis(2-ethylhexyl)phthalate	18.4	10.0	µg/L	20.000		92	8-158			
4-Bromophenyl phenyl ether	18.3	10.0	µg/L	20.000		91	53-127			
Butyl benzyl phthalate	18.5	10.0	µg/L	20.000		92	5-152			
4-Chloro-3-methylphenol	16.2	20.0	µg/L	20.000		81	22-147			
2-Chloronaphthalene	17.6	10.0	µg/L	20.000		88	60-118			
2-Chlorophenol	13.1	10.0	µg/L	20.000		66	23-134			
4-Chlorophenyl phenyl ether	17.7	10.0	µg/L	20.000		88	25-158			
Chrysene	18.3	10.0	µg/L	20.000		91	17-168			
Di-n-butyl phthalate	18.5	10.0	µg/L	20.000		93	1-118			
Di-n-octyl phthalate	19.6	10.0	µg/L	20.000		98	4-146			
Dibenz(a,h)anthracene	22.2	10.0	µg/L	20.000		111	5-227			

Prairie Analytical Systems, Inc. **Date:** 5/22/2015

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002325 - EPA 625 SVOC										
LCS (Y002325-BS1)				Prepared: 05/07/201 Analyzed: 05/15/201						
1,2-Dichlorobenzene	13.3	10.0	µg/L	20.000		67	32-129			
1,3-Dichlorobenzene	13.7	10.0	µg/L	20.000		69	5-172			
1,4-Dichlorobenzene	12.6	10.0	µg/L	20.000		63	20-124			
3,3'-Dichlorobenzidine	43.4	20.0	µg/L	40.000		108	5-262			
2,4-Dichlorophenol	15.8	10.0	µg/L	20.000		79	39-135			
Diethyl phthalate	18.7	10.0	µg/L	20.000		93	5-114			
Dimethyl phthalate	18.4	10.0	µg/L	20.000		92	5-112			
2,4-Dimethylphenol	14.2	10.0	µg/L	20.000		71	32-119			
4,6-Dinitro-2-methylphenol	18.5	50.0	µg/L	20.000		93	5-181			
2,4-Dinitrophenol	19.4	50.0	µg/L	20.000		97	5-191			
2,4-Dinitrotoluene	18.9	10.0	µg/L	20.000		94	39-139			
2,6-Dinitrotoluene	19.0	10.0	µg/L	20.000		95	50-158			
1,2-Diphenylhydrazine	18.0	10.0	µg/L	20.000		90	15-130			
Fluoranthene	18.9	10.0	µg/L	20.000		94	26-137			
Fluorene	17.9	10.0	µg/L	20.000		90	59-121			
Hexachlorobenzene	18.5	10.0	µg/L	20.000		93	5-152			
Hexachlorobutadiene	16.4	10.0	µg/L	20.000		82	24-116			
Hexachlorocyclopentadiene	16.3	10.0	µg/L	20.000		81	15-130			
Hexachloroethane	13.0	10.0	µg/L	20.000		65	40-113			
Indeno(1,2,3-cd)pyrene	22.1	10.0	µg/L	20.000		110	5-171			
Isophorone	15.3	10.0	µg/L	20.000		76	21-196			
Naphthalene	15.8	10.0	µg/L	20.000		79	21-133			
Nitrobenzene	13.0	10.0	µg/L	20.000		65	35-180			
N-Nitroso-di-n-propylamine	13.6	10.0	µg/L	20.000		68	5-230			
N-Nitrosodimethylamine	6.34	10.0	µg/L	20.000		32	15-130			
N-Nitrosodiphenylamine	18.4	10.0	µg/L	20.000		92	15-130			
2-Nitrophenol	15.1	10.0	µg/L	20.000		76	29-182			
4-Nitrophenol	22.2	50.0	µg/L	20.000		111	5-132			
Pentachlorophenol	23.2	50.0	µg/L	20.000		116	14-176			
Phenanthrene	17.3	10.0	µg/L	20.000		86	54-120			
Phenol	5.24	10.0	µg/L	20.000		26	5-112			
Pyrene	18.6	10.0	µg/L	20.000		93	52-115			
1,2,4-Trichlorobenzene	14.6	10.0	µg/L	20.000		73	44-142			
2,4,6-Trichlorophenol	19.1	10.0	µg/L	20.000		95	37-144			
Surrogate: 2-Fluorobiphenyl	*18.1*		*µg/L*	*20.000*		*91*	*38-149*			
Surrogate: 2-Fluorophenol	*8.07*		*µg/L*	*30.000*		*27*	*10-95*			
Surrogate: Nitrobenzene-d5	*13.5*		*µg/L*	*20.000*		*68*	*50-115*			
Surrogate: Phenol-d6	*4.36*		*µg/L*	*30.000*		*15*	*10-23*			
Surrogate: 4-Terphenyl-d14	*19.6*		*µg/L*	*20.000*		*98*	*45-115*			
Surrogate: 2,4,6-Tribromophenol	*17.8*		*µg/L*	*30.000*		*59*	*30-100*			

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002325 - EPA 625 SVOC										
Matrix Spike (Y002325-MS1)	**Source: 15E0103-02**			Prepared: 05/07/201 Analyzed: 05/15/201						
Acenaphthene	17.4	11.1	µg/L	22.222	ND	78	47-145			
Acenaphthylene	18.0	11.1	µg/L	22.222	ND	81	33-145			
Anthracene	18.6	11.1	µg/L	22.222	ND	84	27-133			
Benzidine	U	11.1	µg/L	44.444	ND		15-130			S
Benzo(a)anthracene	20.3	11.1	µg/L	22.222	ND	91	33-143			
Benzo(b)fluoranthene	19.5	11.1	µg/L	22.222	ND	88	24-159			
Benzo(k)fluoranthene	20.6	11.1	µg/L	22.222	ND	93	11-162			
Benzo(g,h,i)perylene	23.5	11.1	µg/L	22.222	ND	106	5-219			
Benzo(a)pyrene	21.2	11.1	µg/L	22.222	ND	95	17-163			
Bis(2-chloroethoxy)methane	14.2	11.1	µg/L	22.222	ND	64	33-184			
Bis(2-chloroethyl)ether	11.0	11.1	µg/L	22.222	ND	49	12-158			
Bis(2-chloroisopropyl)ether	13.5	11.1	µg/L	22.222	ND	61	36-166			
Bis(2-ethylhexyl)phthalate	19.7	11.1	µg/L	22.222	ND	89	8-158			
4-Bromophenyl phenyl ether	18.8	11.1	µg/L	22.222	ND	84	53-127			
Butyl benzyl phthalate	18.8	11.1	µg/L	22.222	ND	85	5-152			
4-Chloro-3-methylphenol	16.5	22.2	µg/L	22.222	ND	74	22-147			
2-Chloronaphthalene	17.4	11.1	µg/L	22.222	ND	78	60-118			
2-Chlorophenol	13.4	11.1	µg/L	22.222	ND	60	23-134			
4-Chlorophenyl phenyl ether	17.5	11.1	µg/L	22.222	ND	79	25-158			
Chrysene	18.9	11.1	µg/L	22.222	ND	85	17-168			
Di-n-butyl phthalate	20.1	11.1	µg/L	22.222	1.13	85	1-118			
Di-n-octyl phthalate	21.0	11.1	µg/L	22.222	ND	94	4-146			
Dibenz(a,h)anthracene	22.0	11.1	µg/L	22.222	ND	99	5-227			
1,2-Dichlorobenzene	13.4	11.1	µg/L	22.222	ND	60	32-129			
1,3-Dichlorobenzene	13.7	11.1	µg/L	22.222	ND	62	5-172			
1,4-Dichlorobenzene	12.8	11.1	µg/L	22.222	ND	58	20-124			
3,3'-Dichlorobenzidine	33.1	22.2	µg/L	44.444	ND	74	5-262			
2,4-Dichlorophenol	16.1	11.1	µg/L	22.222	ND	73	39-135			
Diethyl phthalate	19.6	11.1	µg/L	22.222	ND	88	5-114			
Dimethyl phthalate	18.7	11.1	µg/L	22.222	ND	84	5-112			
2,4-Dimethylphenol	14.9	11.1	µg/L	22.222	ND	67	32-119			
4,6-Dinitro-2-methylphenol	18.6	55.6	µg/L	22.222	ND	84	5-181			
2,4-Dinitrophenol	20.3	55.6	µg/L	22.222	ND	92	5-191			
2,4-Dinitrotoluene	19.3	11.1	µg/L	22.222	ND	87	39-139			
2,6-Dinitrotoluene	19.0	11.1	µg/L	22.222	ND	85	50-158			
1,2-Diphenylhydrazine	18.0	11.1	µg/L	22.222	ND	81	15-130			
Fluoranthene	19.5	11.1	µg/L	22.222	ND	88	26-137			
Fluorene	18.2	11.1	µg/L	22.222	ND	82	59-121			
Hexachlorobenzene	19.2	11.1	µg/L	22.222	ND	86	5-152			
Hexachlorobutadiene	16.3	11.1	µg/L	22.222	ND	73	24-116			
Hexachlorocyclopentadiene	8.21	11.1	µg/L	22.222	ND	37	15-130			
Hexachloroethane	8.21	11.1	µg/L	22.222	ND	37	40-113			S
Indeno(1,2,3-cd)pyrene	22.2	11.1	µg/L	22.222	ND	100	5-171			
Isophorone	15.2	11.1	µg/L	22.222	ND	68	21-196			

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Semi-Volatile Organic Compounds by GC-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002325 - EPA 625 SVOC										
Matrix Spike (Y002325-MS1)	**Source: 15E0103-02**			Prepared: 05/07/201 Analyzed: 05/15/201						
Naphthalene	15.7	11.1	µg/L	22.222	ND	71	21-133			
Nitrobenzene	14.1	11.1	µg/L	22.222	ND	63	35-180			
N-Nitroso-di-n-propylamine	13.2	11.1	µg/L	22.222	ND	60	5-230			
N-Nitrosodimethylamine	6.21	11.1	µg/L	22.222	ND	28	15-130			
N-Nitrosodiphenylamine	18.6	11.1	µg/L	22.222	ND	84	15-130			
2-Nitrophenol	15.6	11.1	µg/L	22.222	ND	70	29-182			
4-Nitrophenol	22.6	55.6	µg/L	22.222	ND	102	5-132			
Pentachlorophenol	24.1	55.6	µg/L	22.222	ND	108	14-176			
Phenanthrene	17.4	11.1	µg/L	22.222	ND	78	54-120			
Phenol	5.16	11.1	µg/L	22.222	ND	23	5-112			
Pyrene	18.7	11.1	µg/L	22.222	ND	84	52-115			
1,2,4-Trichlorobenzene	14.8	11.1	µg/L	22.222	ND	67	44-142			
2,4,6-Trichlorophenol	18.9	11.1	µg/L	22.222	ND	85	37-144			
Surrogate: 2-Fluorobiphenyl	*17.8*		*µg/L*	*22.222*		*80*	*38-149*			
Surrogate: 2-Fluorophenol	*7.66*		*µg/L*	*33.333*		*23*	*10-95*			
Surrogate: Nitrobenzene-d5	*13.8*		*µg/L*	*22.222*		*62*	*50-115*			
Surrogate: Phenol-d6	*4.62*		*µg/L*	*33.333*		*14*	*10-23*			
Surrogate: 4-Terphenyl-d14	*19.7*		*µg/L*	*22.222*		*89*	*45-115*			
Surrogate: 2,4,6-Tribromophenol	*18.6*		*µg/L*	*33.333*		*56*	*30-100*			

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Pesticides and PCBs by GC-ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002323 - EPA 608 OCP/PCB										
Blank (Y002323-BLK1)				Prepared: 05/07/201 Analyzed: 05/11/201						
Aldrin	U	1.00	µg/L							
alpha-BHC	U	1.00	µg/L							
beta-BHC	U	1.00	µg/L							
gamma-BHC	U	1.00	µg/L							
delta-BHC	U	1.00	µg/L							
alpha-Chlordane	U	1.00	µg/L							
gamma-Chlordane	U	1.00	µg/L							
4,4'-DDD	U	1.00	µg/L							
4,4'-DDE	U	1.00	µg/L							
4,4'-DDT	U	1.00	µg/L							
Dieldrin	U	1.00	µg/L							
Endosulfan I	U	1.00	µg/L							
Endosulfan II	U	1.00	µg/L							
Endosulfan sulfate	U	1.00	µg/L							
Endrin	U	1.00	µg/L							
Endrin aldehyde	U	1.00	µg/L							
Heptachlor	U	1.00	µg/L							
Heptachlor epoxide	U	1.00	µg/L							
Toxaphene	U	3.00	µg/L							
Aroclor 1016	U	0.500	µg/L							
Aroclor 1221	U	0.500	µg/L							
Aroclor 1232	U	0.500	µg/L							
Aroclor 1242	U	0.500	µg/L							
Aroclor 1248	U	0.500	µg/L							
Aroclor 1254	U	0.500	µg/L							
Aroclor 1260	U	0.500	µg/L							
Surrogate: Decachlorobiphenyl	*0.650*		*µg/L*	*2.0000*		*32*	*60-130*			*C1, S*
Surrogate: Tetrachloro-m-xylene	*0.890*		*µg/L*	*2.0000*		*44*	*60-130*			*C1, S*

Prairie Analytical Systems, Inc. **Date:** 5/22/2015

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Pesticides and PCBs by GC-ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch Y002323 - EPA 608 OCP/PCB										
LCS (Y002323-BS1)				Prepared: 05/07/201 Analyzed: 05/11/201						
Aldrin	2.71	1.00	µg/L	5.0000		54	42-122			
alpha-BHC	2.70	1.00	µg/L	5.0000		54	37-134			
beta-BHC	2.92	1.00	µg/L	5.0000		58	17-147			
gamma-BHC	2.68	1.00	µg/L	5.0000		54	32-127			
delta-BHC	2.78	1.00	µg/L	5.0000		56	19-140			
alpha-Chlordane	2.67	1.00	µg/L	5.0000		53	45-119			
gamma-Chlordane	2.79	1.00	µg/L	5.0000		56	45-119			
4,4'-DDD	3.19	1.00	µg/L	5.0000		64	31-141			
4,4'-DDE	2.74	1.00	µg/L	5.0000		55	30-145			
4,4'-DDT	2.28	1.00	µg/L	5.0000		46	25-160			
Dieldrin	2.77	1.00	µg/L	5.0000		55	36-146			
Endosulfan I	2.81	1.00	µg/L	5.0000		56	45-153			
Endosulfan II	2.78	1.00	µg/L	5.0000		56	5-202			
Endosulfan sulfate	2.31	1.00	µg/L	5.0000		46	26-144			
Endrin	3.10	1.00	µg/L	5.0000		62	30-147			
Endrin aldehyde	2.62	1.00	µg/L	5.0000		52	60-130			S
Heptachlor	2.72	1.00	µg/L	5.0000		54	34-111			
Heptachlor epoxide	2.88	1.00	µg/L	5.0000		58	37-142			
Surrogate: Decachlorobiphenyl	*0.640*		*µg/L*	*2.0000*		*32*	*60-130*			*C1, S*
Surrogate: Tetrachloro-m-xylene	*0.960*		*µg/L*	*2.0000*		*48*	*60-130*			*C1, S*
Matrix Spike (Y002323-MS1)		**Source: 15E0103-02**		Prepared: 05/07/201 Analyzed: 05/11/201						
Aldrin	2.56	1.09	µg/L	5.4348	ND	47	42-122			
alpha-BHC	2.74	1.09	µg/L	5.4348	ND	50	37-134			
beta-BHC	3.33	1.09	µg/L	5.4348	ND	61	17-147			
gamma-BHC	2.77	1.09	µg/L	5.4348	ND	51	32-127			
delta-BHC	3.17	1.09	µg/L	5.4348	ND	58	19-140			
alpha-Chlordane	2.73	1.09	µg/L	5.4348	ND	50	45-119			
gamma-Chlordane	2.82	1.09	µg/L	5.4348	ND	52	45-119			
4,4'-DDD	3.41	1.09	µg/L	5.4348	ND	63	31-141			
4,4'-DDE	2.71	1.09	µg/L	5.4348	ND	50	30-145			
4,4'-DDT	2.22	1.09	µg/L	5.4348	ND	41	25-160			
Dieldrin	2.88	1.09	µg/L	5.4348	ND	53	36-146			
Endosulfan I	3.05	1.09	µg/L	5.4348	ND	56	45-153			
Endosulfan II	3.01	1.09	µg/L	5.4348	ND	55	5-202			
Endosulfan sulfate	2.17	1.09	µg/L	5.4348	ND	40	26-144			
Endrin	3.39	1.09	µg/L	5.4348	ND	62	30-147			
Endrin aldehyde	2.79	1.09	µg/L	5.4348	ND	51	60-130			S
Heptachlor	2.35	1.09	µg/L	5.4348	ND	43	34-111			
Heptachlor epoxide	3.44	1.09	µg/L	5.4348	ND	63	37-142			
Surrogate: Decachlorobiphenyl	*0.658*		*µg/L*	*2.1739*		*30*	*60-130*			*C1, S*
Surrogate: Tetrachloro-m-xylene	*0.848*		*µg/L*	*2.1739*		*39*	*60-130*			*C1, S*

LABORATORY RESULTS

Client: Crystal Lake, City of - WWTP
Project: Lippold Park Effluent / Manhole **Lab Order:** 15E0103

Notes and Definitions

S	Spike recovery outside acceptance limits.
M	Reporting limit set between LOQ and MDL.
C1	Analyte result confirmed by second analysis.
*	NELAC certified compound.
U	Analyte not detected (i.e. less than RL or MDL).

Chain of Custody Record

Central IL - 1210 Capital Airport Drive - Springfield, IL 62707-8490 - Phone (217) 753-1148 - Facsimile (217) 753-1152
Chicago IL Office - 9114 Virginia Rd., Ste 112 - Lake in the Hills, IL 60156 - Phone (847) 651-2604 - Facsimile (847) 458-9680
Central/Southern IL Office - Phone (217) 414-7762 - Facsimile (217) 223-7922

Prairie Analytical Systems, INCORPORATED
www.prairieanalytical.com

Client	CITY OF CRYSTAL LAKE
Address	100 WEST WOODSTOCK STREET P.O. BOX 597
City, State, Zip Code	CRYSTAL LAKE, IL 60039-0597
Phone / Facsimile	(815) 459-2020 EXT. 4167
Project Name / Number	LIPPOLD PARK EFFLUENT - PRIORITY POLLUTANTS
Project Location	LIPPOLD EFFLUENT - MANHOLE (MH)
P.O. # or Invoice To	ENGINEERING
Contact Person	KEN KRUEGER / EMMA KOHL

Reporting: TACO ☐ Resid ☐ Ind/Comm; CALM ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F; RISC ☐ Resid ☐ Indust

Sample Description	Sampling Date	Sampling Time	Matrix Code	Preserv Code	No. of Containers	Sample Type Comp	Sample Type Grab	Volatile Organic Compounds (Priority Pollutants)	(608) Pest. / PCB's	(625) Semi-Volatiles	Semi-Volatile (Extra MS)	Semi-Volatile (Extra MS)	Sampler Comments
MANHOLE													
1st set of 4	5-4-15	0830	A	1	2		✓	X					
2nd set of 4	5-4-15	1030	A	1	2		✓	X					
3rd set of 4	5-4-15	1250	A	1	2		✓	X	Comp into 1 sample				
4th set of 4	5-4-15	1430	A	1	2		✓	X					
Bottle 1 of #608	5-5-15	1015	A		1	✓			X				
Bottle 1 of #625	5-5-15	1015	A		1	✓				X			
Bottle 1 of MS	5-5-15	1015	A		1	✓					X		
Bottle 2 of MS	5-5-15	1015	A		1	✓						X	

Matrix Code	A - Aqueous	DW - Drinking Water	GW - Ground Water	NA - Non-Aqueous Liquid	S - Solid	O - Oil	X - Other (Specify)
Preserv Code	0 - None	1 - HCl	2 - H2SO4	3 - HNO3	4 - NaOH	5 - 5035 Kit	X - Other (Specify)

Relinquished By	Date	Time	Received By	Date	Time	Method of Shipment
Ken Krueger	5-5-15	1040	K. Kohl	5/5/15	10:40	
[signature]	5/5/15	1245	[signature]	5/5/15	1345	
[signature]	5/5/15	1410	[signature]	5/5/15	1418	UPS

Special Instructions: RAIN OVERNIGHT - WATER HAS SEDIMENT & DARK COLOR (THIS IS STORM SEWER)

Turnaround Time: Standard ☒ Rush ☐ Date Required:

QC Level: 1 ☐ 2 ☒ 3 ☐ 4 ☐

On wet ice? Yes No

Temperature (°C): 5.7

[signature] 5/5/15 1700

[signature] 5-7-15 7:20

Copies: White - Client / Yellow - PAS, Inc. / Pink - Sampler

Part D. Summary of Year 14 Stormwater Activities

(Present a summary of the storm water activities you plan to undertake during the next reporting cycle, including an implementation schedule in the sections following the table.)

The table shown below summarizes the BMPs committed to for Year 14. Specific BMPs and measurable goals for Year 14 program development activities are presented in the sections following the table.

Note: X indicates BMPs committed to for Year 14.

Year 14 MS4	
A. Public Education and Outreach	
X	A.1 Distributed Paper Material
	A.2 Speaking Engagement
X	A.3 Public Service Announcement
X	A.4 Community Event
	A.5 Classroom Education Material
X	A.6 Other Public Education
B. Public Participation/Involvement	
	B.1 Public Panel
X	B.2 Educational Volunteer
X	B.3 Stakeholder Meeting
	B.4 Public Hearing
	B.5 Volunteer Monitoring
X	B.6 Program Coordination
X	B.7 Other Public Involvement
C. Illicit Discharge Detection and Elimination	
X	C.1 Storm Sewer Map Preparation
X	C.2 Regulatory Control Program
X	C.3 Detection/Elimination Prioritization Plan
X	C.4 Illicit Discharge Tracing Procedures
X	C.5 Illicit Source Removal Procedures
X	C.6 Program Evaluation and Assessment
X	C.7 Visual Dry Weather Screening
X	C.8 Pollutant Field Testing
	C.9 Public Notification
	C.10 Other Illicit Discharge Controls

Year 14 MS4	
D. Construction Site Runoff Control	
X	D.1 Regulatory Control Program
X	D.2 Erosion and Sediment Control BMPs
	D.3 Other Waste Control Program
X	D.4 Site Plan Review Procedures
X	D.5 Public Information Handling Procedures
X	D.6 Site Inspection/Enforcement Procedures
	D.7 Other Construction Site Runoff Controls
E. Post-Construction Runoff Control	
	E.1 Community Control Strategy
X	E.2 Regulatory Control Program
X	E.3 Long Term O&M Procedures
X	E.4 Pre-Const Review of BMP Designs
X	E.5 Site Inspections During Construction
	E.6 Post-Construction Inspections
	E.7 Other Post-Const Runoff Controls
F. Pollution Prevention/Good Housekeeping	
X	F.1 Employee Training Program
X	F.2 Inspection and Maintenance Program
X	F.3 Municipal Operations Storm Water Control
X	F.4 Municipal Operations Waste Disposal
X	F.5 Flood Management/Assess Guidelines
X	F.6 Other Municipal Operations Controls

1. Public Education and Outreach

The City is committing to conduct Public Education and Outreach as part of its permit. Public Education and Outreach requires implementation of a program to distribute educational material to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants to stormwater runoff. The City commits to implementation of BMPs related to A.1, A.3, A.4 and A.6 as described below.

BMP No. A.1
Brief Description of BMP:

The City and McHenry County distribute a variety of paper materials from a number of sources informing the public about stormwater or water quality and why they are important.

Measurable Goal(s), including frequencies:

The materials chosen will be targeted toward residents, businesses and other potential pollutant sources to create better awareness and knowledge of the issue.

Milestones: **Year 14:** The City will continue to distribute the educational materials and will work to increase distribution by 5%.

BMP No. A.3
Brief Description of BMP:

The City publishes information about stormwater or water quality in the City newsletter and on the City website.

Measurable Goal(s), including frequencies:

The articles chosen will be selected to increase the resident's knowledge and awareness regarding stormwater and water quality.

Milestones: **Year 14:** Publish information articles in the City newsletter at least once a year.

BMP No. A.4
Brief Description of BMP:

The City has designed and constructed a rain garden with the Wildflower Preservation and Propagation Committee (WPPC). The City will also continue its presence and support for the annual Drug Take Back Initiative Program sponsored by the Police Department. This activity provides another opportunity to engage the public on stormwater related issues and why they are important to all residents and businesses.

Measurable Goal(s), including frequencies:

The City will continue to maintain and enhance the rain garden as an education tool for residents and to demonstrate their value for managing stormwater runoff.

Milestones: **Year 14:** Maintain existing rain garden and seek additional partnerships as funding allows.

BMP No. A.6

Brief Description of BMP:

The City will utilize other means such as the City website, library, etc. as conduits for reaching additional residents.

Measurable Goal(s), including frequencies:

The City will provide specific information to the targeted residents on stormwater and water quality issues.

Milestones: **Year 14:** The City will update and modify the information provided as needed to stay current and informative.

2. Public Participation/Involvement

The City will perform activities and services related to the Public Participation/Involvement minimum control measure. BMPs will be implemented under BMP numbers B.2, B.3, B.6 and B.7 as described below.

BMP No. B.2

Brief Description of BMP:

City staff regularly participates in volunteering activities that provide opportunities to interact with residents and educate them on the importance of stormwater and water quality.

Measurable Goal(s), including frequencies:

City staff will continue to perform these activities and work to increase participation from its staff and attendance by residents.

Milestones: **Year 14:** The City will participate in at least one volunteering activity each year and work to increase attendance by 5%.

BMP No. B.3

Brief Description of BMP:

The City will work to conduct stakeholder meetings as needed to connect directly with impacted residents and to distribute information.

Measurable Goal(s), including frequencies:

Stakeholder meetings offer direct input on issues impacting residents and provide an opportunity to gather feedback as well as disseminate stormwater related information.

Milestones: **Year 14:** The City will work to hold one stakeholder meeting.

BMP No. B.6

Brief Description of BMP:

The City has coordinated with other local municipalities and agencies on regional stormwater related issues.

Measurable Goal(s), including frequencies:

The City will continue to partner with the County and other agencies to coordinate efforts such as watershed studies and other issues that impact more than one individual municipality.

Milestones: **Year 14:** The City will work to coordinate with other local agencies regarding stormwater related issues.

BMP No. B.7

Brief Description of BMP:

The City has hosted elementary schools and other residents with tours through various departments of the City.

Measurable Goal(s), including frequencies:

The tours allow the City to educate the participants on the various functions of the City, as well as specifically provide them with knowledge of stormwater vs sanitary, why we treat sanitary and why keeping stormwater is important.

Milestones: **Year 14:** The City will continue with the education tour program for students ranging from elementary to college ages.

3. Illicit Discharge Detection and Elimination

The City commits to performing some activities related to the Illicit Discharge Detection and Elimination minimum control. BMPs will be implemented under BMP numbers C.1, C.2, C.3, C.4, C.5, C.6, C.7 and C.8 as described below.

BMP No. C.1

Brief Description of BMP:

The City has a GIS based mapping system of the receiving streams and outfalls.

Measurable Goal(s), including frequencies:

The City will work to finalize the GIS system and outfall inventory mapping.

Milestones: **Year 14:** The City will complete 20% more of the mapping and outfall inventory.

BMP No. C.2

Brief Description of BMP:

The City and County have ordinances in place to allow for regulatory action if an illicit discharge is observed, reported or discovered.

Measurable Goal(s), including frequencies:

The City will continue to enforce the existing ordinances that prevent non-stormwater discharges to reduce or eliminate pollutants from entering the municipal separate storm sewer system.

Milestones: **Year 14:** The City will continue to enforce the existing ordinances.

BMP No. C.3

Brief Description of BMP:

The City utilizes various departments to identify and report potential illicit discharges. The City also investigates reports of illicit discharges.

Measurable Goal(s), including frequencies:

The City will continue to identify and investigate potential illicit discharges to reduce or eliminate the impact on local stormwater systems and receiving streams.

Milestones: **Year 14:** The City will continue to identify and investigate potential illicit discharges.

BMP No. C.4

Brief Description of BMP:

The City uses all information available including development plans and the GIS system to trace and eliminate illicit discharges.

Measurable Goal(s), including frequencies:

The City will track, investigate and eliminate illicit discharges as reported, observed or identified

Milestones: **Year 14:** The City will trace and eliminate illicit discharges as needed.

BMP No. C.5

Brief Description of BMP:

The City and County both have enforcement procedures in place to assist with the removal of an identified illicit discharge.

Measurable Goal(s), including frequencies:

The City will utilize enforcement procedures as needed to eliminate illicit discharges to reduce or eliminate the amount of pollutants entering the municipal separate storm sewer system.

Milestones: **Year 14:** The City will utilize enforcement procedures as needed to eliminate illicit discharges.

BMP No. C.6

Brief Description of BMP:

The City will evaluate the illicit discharge and detection program for effectiveness and possible improvements.

Measurable Goal(s), including frequencies:

Regular evaluation of the program can provide valuable input and opportunity for improvement.

Milestones: **Year 14:** The City will evaluate the program at least once a year.

BMP No. C.7

Brief Description of BMP:

The City regularly performs dry weather screening as part of its maintenance activities.

Measurable Goal(s), including frequencies:

The City will work to utilize inspection forms while performing the dry weather screening inspections.

Milestones: **Year 14:** The City will evaluate its dry weather inspection form and procedures.

BMP No. C.8

Brief Description of BMP:

The City regularly samples, test and documents the results of influent and effluent flow to various lakes and streams throughout the community. The City will continue or expand the program as needed to meet the ILR40 permit requirements and conditions.

Measurable Goal(s), including frequencies:

The City analyzes the stormwater quality to determine acceptable levels of water quality of its lakes and streams.

Milestones: **Year 14:** The City will continue the testing program and expand by 5% or as funding allows.

4. Construction Site Runoff Control

The City will perform activities and services related to the Construction Site Runoff Control minimum control measure. BMPs will be implemented under BMP numbers D.1, D.2, D.4, D.5 and D.6 as described below.

BMP No. D.1

Brief Description of BMP:

The City and County have ordinances in place to allow for review, inspection, and enforcement of construction site runoff controls.

Measurable Goal(s), including frequencies:

The City will continue to review, inspect and enforce the ordinance regulations to prevent or reduce the discharge of sediment or other pollutants from construction sites.

Milestones: **Year 14:** The City will enforce the regulatory procedures.

BMP No. D.2

Brief Description of BMP:

The City and County have ordinances in place to allow for review, inspection, and enforcement of construction site runoff control BMP's.

Measurable Goal(s), including frequencies:

The City will continue to review, inspect and enforce the ordinance regulations to prevent or reduce the discharge of sediment or other pollutants from construction sites as it relates to BMP's.

Milestones: **Year 14:** The City will enforce the regulatory procedures.

BMP No. D.4

Brief Description of BMP:

The City has procedures that proposed development plans to be reviewed for compliance.

Measurable Goal(s), including frequencies:

The City will continue to require all developments to be reviewed for compliance with NPDES regulations and other City ordinance standards.

Milestones: **Year 14:** The City will enforce the review procedures.

BMP No. D.5

Brief Description of BMP:

The City has produces in place for receiving, logging and addressing publicly reported issues.

Measurable Goal(s), including frequencies:

The City will continue to respond to publicly reported issues in a timely manner and investigate as needed to address them.

Milestones: **Year 14:** The City will respond accordingly.

BMP No. D.6

Brief Description of BMP:

The City and County regulatory programs allow for inspection and enforcement procedures for construction site runoff control.

Measurable Goal(s), including frequencies:

The City will continue to inspect all new developments for compliance with the City and County ordinances.

Milestones: **Year 14:** The City will enforce the ordinance.

5. Post-Construction Runoff Control

The City will perform activities and services related to the Post-Construction Site Runoff Control minimum control measure. BMPs will be implemented under BMP number E.2, E.3, E.4, and E.5 as described below.

BMP No. E.2

Brief Description of BMP:

The City and County have ordinances in place that allow for the review, inspection and enforcement of post-construction runoff control measures.

Measurable Goal(s), including frequencies:

The City will continue to enforce the ordinances for compliance with post construction runoff controls to prevent or reduce the discharge of contaminants from construction sites.

Milestones: **Year 14:** The City will enforce the ordinances.

BMP No. E.3

Brief Description of BMP:

The City has procedures in place for assisting and evaluating the long term maintenance of stormwater best management practices.

Measurable Goal(s), including frequencies:

The City will continue to assist developers, residents and other target audiences by providing sample maintenance plans and conducting inspections.

Milestones: **Year 14:** The City will increase distribution of the sample maintenance by 10% and conduct approximately 20% of the inspections.

BMP No. E.4

Brief Description of BMP:

The City has procedures in place for the pre-construction review of BMP designs. These procedures include pre-application meetings for large scale developments.

Measurable Goal(s), including frequencies:

The City will continue the review procedures and modify or evaluate as needed to maintain compliance.

Milestones: **Year 14:** The City will continue the BMP review procedures.

BMP No. E.5

Brief Description of BMP:

The City has procedures in place to perform site inspections during construction by qualified personnel.

Measurable Goal(s), including frequencies:

The City will continue with the site inspections procedures to verify compliance of BMP's in reducing and/or preventing the discharge of contaminants to local waterways and storm sewers.

Milestones: **Year 14:** The City will continue with the site inspection procedures.

6. Pollution Prevention/Good Housekeeping

This minimum control measure involves the development and implementation of an operation and maintenance program to reduce the discharge of pollutants from municipal operations. This program must include a training program for municipal employees. The City will perform BMPs under BMP numbers F.1, F.2, F.3, F.4, F.5 and F.6 as described below.

BMP No. F.1

Brief Description of BMP:

The City regularly provides training to staff regarding a variety of topics aimed at reducing or preventing the discharge of contaminants from municipal operations.

Measurable Goal(s), including frequencies:

The City will continue with the training program aimed at educating City staff on ways to reduce or prevent stormwater pollution from City activities.

Milestones: **Year 14:** The City will continue with the training program..

BMP No. F.2

Brief Description of BMP:

The City has an inspection and maintenance program in place to evaluate and maintain stormwater facilities. These activities include the City's extensive street sweeping program.

Measurable Goal(s), including frequencies:

The City will continue the inspection and maintenance program of stormwater facilities to reduce the amount of debris and pollutants that enter the stormwater system.

Milestones: **Year 14:** The City will continue the inspection program and evaluate approximately 20% of the stormwater system.

BMP No. F.3

Brief Description of BMP:

The City has procedures in place to reduce or prevent the discharge of contaminants to the stormwater system from municipal operations

Measurable Goal(s), including frequencies:

The City will continue to be proactive in evaluating municipal activities that could potentially introduce pollutants to the stormwater system and develop methods to reduce or prevent them.

Milestones: **Year 14:** The City will continue with the municipal control measures and evaluate additional methods as needed.

BMP No. F.4

Brief Description of BMP:

The City has procedures that require appropriate disposal of all wastes generated during municipal operations.

Measurable Goal(s), including frequencies:

The City will continue with the disposal program and requirements to reduce or eliminate the release of pollutants from municipal operations.

Milestones: **Year 14:** The City will continue with the municipal operations disposal program.

BMP No. F.5

Brief Description of BMP:

The City, County and State have strict development regulations related to floodplain management and the evaluation of potential development in these areas.

Measurable Goal(s), including frequencies:

The City will continue to enforce the requirements for potential development is special flood hazard areas.

Milestones: **Year 14:** The City will continue to enforce the flood management requirements.

BMP No. F.6

Brief Description of BMP:

The City regularly evaluates their municipal activities for additional ways to reduce or eliminate pollutants from entering the stormwater system including salt reduction, additional de-icing alternatives and other actions.

Measurable Goal(s), including frequencies:

The City will continue to evaluate and develop methods or changes to existing practices that can reduce or eliminate pollutants from entering the stormwater system from municipal activities.

Milestones: **Year 14:** The City will continue the evaluation and monitoring program.

Part E. Notice of Qualifying Local Program

The City of Crystal Lake established an efficient and effective stormwater management program that is well beyond the minimum requirements of the federally mandated NPDES Phase II program during the previous 10-year permit period. The City will continue to monitor the existing program and modify it as necessary to continue to maintain compliance with the NPDES requirements.

1. Public Education and Outreach:

The City of Crystal Lake developed a comprehensive program during the previous 10 year NOI permit period that provides Public Education and Outreach resources to its residents through printed materials and the City website. The City will continue this program and the associated activities.

This program relates to BMP numbers A.1, A.3, A.4 and A.6.

2.Public Participation/Involvement:

The City and McHenry County developed a comprehensive program to address the Public Participation/Involvement requirement developed during the initial 10 years of the NPDES Phase II permit. The details are outlined in the previous sections of this annual report.

These programs relate to BMP numbers B.2, B.3, B.6 and B.7.

3. Illicit Discharge Detection and Elimination:

The City developed a comprehensive program during the previous 10 year NOI permit period that addresses the Illicit Discharge Detection and Elimination requirements of the NPDES Phase II program. The applicable program details are outlined in the previous sections of this report.

These programs relate to BMP numbers C.1, C.2, C.3, C.4, C.5, C.6, C.7 and C.8.

4. Construction Site Runoff Control:

The City developed a comprehensive program during the previous 10 year NOI permit period that addresses the Construction Site Runoff Control requirements of the NPDES Phase II program. The applicable program details are outlined in the previous sections of this report.

These programs relate to BMP numbers D.1, D.2, D.4, D.5 and D.6.

5. Post-Construction Runoff Control:

The City developed a comprehensive program during the previous 10 year NOI permit period that addresses the Post-Construction Runoff Control requirements of the NPDES Phase II program. The applicable program details are outlined in the previous sections of this report.

These programs relate to BMP numbers E.2, E.3, E.4, and E.5.

6. Pollution Prevention/Good Housekeeping:

The City developed a comprehensive program during the previous 10 year NOI permit period that addresses the Pollution Prevention/Good Housekeeping requirements of the NPDES Phase II program. The goal of this BMP is to identify current practices that contribute to stormwater pollution and implement programs and procedures for municipal activities that curtail the discharge of pollutants to storm sewer systems. The applicable program details are outlined in the previous sections of this report.

These programs relate to BMP number F.1, F.2, F.3, F.4, F.5 and F.6.

Part F. Construction Projects Conducted During Year 13

(Provide a list of construction projects your entity has paid for during the reporting period.)

Project Name	Project Size (acres)	Construction Start Date	Construction End Date
S Main Street	5.4	2/2015	Ongoing