Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-34

STYLE AND FORMAT GUIDE FOR

LETTERS, MEMORANDA, AND REPORTS

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STYLE AND FORMAT GUIDE FOR LETTERS, MEMORANDA, AND REPORTS

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LIST OF ABBREVIATIONS AND ACRONYMS

Monitoring and Research Department Abbreviations and Acronyms

Certain abbreviations have been approved for use in M&R Department correspondence. The first list identifies abbreviations and acronyms acceptable for use in Group A: Interoffice Memos (IO Memos) without first defining their meaning. When using acronyms to identify water reclamation plant (WRP) names (Pages 12 and 13), spell out the "Common" name of the WRP(s) and then proceed to use the abbreviated form of the name throughout the balance of the IO Memo. If the IO Memo contains attachments, the attachments should be formatted as stand-alone documents, using the acronyms or abbreviations shown on Pages xi-xiv. Be consistent in the use of an acronym or abbreviation within the document.

Special abbreviations and acronyms are also approved when using District Department names in Group A: IO Memos. The name shown below may be used without first defining the full department name. The one caveat to this procedure is that the word Department must be spelled out after the use of the shortened department name i.e., M&O Department, IT Department, Engineering Department, Finance Department, etc., also the names of M&R Department Divisions are not included in this list and should continue to be spelled out at first use.

Approved Abbreviations/Acronyms for Group A: IO Memos		
District	MWRD	WRP
TARP	Illinois EPA (IEPA)	United States EPA (USEPA)
Calumet WRP (CWRP)	Stickney WRP (SWRP)	John E. Egan WRP (EWRP)
James C. Kirie WRP (KWRP)	Hanover Park WRP (HPWRP)	Lemont WRP (LWRP)
Terrence J. O'Brien WRP (OWRP)		
Engineering Department	Finance Department	GA Department
HR Department	IT Department	Law Department
M&O Department	M&R Department	P&MM Department
Treasury Department	Board of Commissioners (Board)	

Abbreviations/Acronyms for Use in Reports and Other Department Documents

The abbreviations and acronyms shown below have been approved for use in all other documents (Special IO Memos, Letters, Non-Routine Documents and Reports).

All acronyms used in reports should be included in a List of Acronyms and located at the beginning of the report after the List of Figures page.

LIST OF ABBREVIATIONS AND ACRONYMS (Continued)

Following is the list of acronyms and abbreviations for use in M&R Department reports, correspondence, or informational documents. If the correspondence contains attachments, the attachments should be formatted as stand-alone documents using the acronym style shown below.

Approved Abbreviations/Acronyms for Reports and Correspondence

Abbreviation/Acronym	Definition
ALD	Analytical Laboratories Division
BASTE	Bay Area Sewage Toxics Emissions
BMPs	Best management practices
BOD	Biochemical oxygen demand
BOD_5	five-day biochemical oxygen demand
Cal-Sag	Calumet-Sag Channel
Calumet WRP	Calumet Water Reclamation Plant
CAWS	Chicago Area Waterway System
CFU	colony-forming units
CH_4	methane
$CBOD_5$	carbonaceous biochemical demand
CO_2	carbon dioxide
COD	chemical oxygen demand
CRCW	Chicago River Controlling Works
CSSC	Chicago Sanitary and Ship Canal
CSOs	combined sewer overflows
CST	capillary suction time
CUP	Chicagoland Underflow Plan
DO	dissolved oxygen
ED	Executive Director
Egan WRP	John E. Egan Water Reclamation Plant
EM&RD	Environmental Monitoring and Research Division
EMS	Environmental Management System
Engineering Department	Engineering Department
FC	fecal coliform
FOG	Fats, Oils, and Grease
$FeCl_3$	ferric chloride
FSS	Field Services Section

LIST OF ABBREVIATIONS AND ACRONYMS (Continued)

Approved Abbreviations/Acronyms for Reports and Correspondence	
Abbreviation/Acronym	Definition
GBT	gravity belt thickener
gpcd	gallons per capita per day
gpd	gallons per day
gpm	gallon per minute
H_2S	hydrogen sulfide
HAPs	hazardous air pollutants
HASMA	Harlem Avenue Solids Management Area
Hanover Park WRP	Hanover Park Water Reclamation Plant
HR Department	Human Resources Department
HRT	Hydraulic residence time
I&I	infiltration and inflow
IAWA	Illinois Association of Wastewater Agencies
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency
IRSSW	Illinois Recommended Standards for Sewage Works
IWD	Industrial Waste Division
Kirie WRP	James C. Kirie Water Reclamation Plant
LASMA	Lawndale Avenue Solids Management Area
LIMS	Laboratory Information Management System
LCIU	Large Commercial Industrial User
Lemont WRP	Lemont Water Reclamation Plant
Law Department	Law Department
M&O Department	Maintenance and Operations Department
M&R Department	Monitoring and Research Department
MPN	Most Probable Number
MSPS	Mainstream Pumping Station
District or MWRD	Metropolitan Water Reclamation District of Greater Chicago
MOB	Main Office Building
MOBA	McMillan Pavilion or Main Office Building Annex
MGD	million gallons per day
mL	milliliter

LIST OF ABBREVIATIONS AND ACRONYMS (Continued)

Approved Abbreviations/Acronyms for Reports and Correspondence	
Abbreviation/Acronym	Definition
ML	Mixed liquor
NACWA	National Association of Clean Water Agencies
NBCR	North Branch of the Chicago River
NH_3	ammonia
NH_3-N	ammonia nitrogen
NBPS	North Branch Pumping Station
NO_3-N	nitrate nitrogen
NPDES Permit(s)	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSC	North Shore Channel
O'Brien WRP	Terrence J. O'Brien Water Reclamation Plant
Org-P	Organic phosphorus
Ortho-P	orthophosphate
OTE	oxygen transfer efficiency
OURs	oxygen uptake rates
P	phosphorus
PCT	Pollution Control Technician
PFU	Plaque forming unit
P&MM Department	Procurement and Materials Management Department
POTW	publicly-owned treatment works
QAC	Quality Assurance Coordinator
RASMA	Ridgeland Avenue Solids Management Area
RAS	Return Activated Sludge
RAPS	Racine Avenue Pumping Station
SBCR	South Branch of the Chicago River
SMA	Solids Management Area
SEPA	Sidestream Elevated Pool Aeration
SIU	Significant Industrial User
Sol-P	Soluble phosphorus
SOW	scope of work
SRTs	solids retention times
SS	suspended solids

LIST OF ABBREVIATIONS AND ACRONYMS (Continued)

Approved Abbreviations/Acronyms for Reports and Correspondence

Abbreviation/Acronym	Definition
Stickney WRP	Stickney Water Reclamation Plant
SVI	sludge volume index
TARP	Tunnel and Reservoir Plan
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TN	Total nitrogen
TP	total phosphorus
TS	total solids
TSS	total suspended solids
UAA	Use Attainability Analysis
UIUC	University of Illinois at Urbana-Champaign
UCTS Section	User Charge Technical Services Section
USEPA	United States Environmental Protection Agency
USDA	United States Department of Agriculture
UV	ultraviolet
VS	volatile solids
VSS	volatile suspended solids
WAS	waste activated sludge
WEF	Water Environment Federation
WERF	Water Environment Research Foundation
WRP	water reclamation plant (lower case when used alone)
WTPR	Wastewater Treatment Process Research

ACKNOWLEDGEMENT

Letters, memoranda, and reports originating from the Monitoring and Research Department (M&R Department) have been regarded by other departments as being correct, precise, and professional. As we update this guidebook to include current styles and computer applications, it is with great appreciation to the staff before us who have diligently strived to achieve the highest level of proficiency in document preparation and presentation.

Special thanks are extended to staff from the Analytical Laboratories, the Environmental Monitoring and Research, and the Industrial Waste Divisions, and the Budget and Administrative Section, who participated in the M&R Department Document and Redesign Task Force and collaborated to produce specific document identification, filing protocols, and document review procedures in order to achieve an efficient workflow within the Department.

We also wish to thank Ms. Anna Eliopoulos for her essential contribution to this endeavor.

DISCLAIMER

The contents of this guide constitute the state of knowledge and recommendations developed by the M&R Department at the time of publication, and are subject to change as additional reviews are completed and experience is attained.

SUMMARY OF DOCUMENTS

Group A: Interoffice Memos

Interoffice Memos (IO Memos) – All IO Memo Templates and Guidelines are located in Appendices A0 through AVIII. Group A: IO Memos originate from the M&R Department and do not require a blind courtesy copy (bcc) list. Samples of various IO Memos are located at the end of the Appendix A.

The IO Memos in this group, listed below, may include the use of special acronyms or abbreviations indicated in the LIST OF ABBREVIATIONS AND ACRONYMS shown on Page x.

Interoffice Memos for the Department Director's Signature. (Templates A0 and AI.) These IO Memos are signed by the M&R Department Director (Department Director) or Assistant Directors and prepared to convey Department responses and information to other District Departments, or as transmittal or cover memo for reports and work plans.

- Informational IO Memos originating from the M&R Department to the Executive Director (ED) or other Department Directors.
- Responses to task assignments or requests from other departments.
- Requests or responses to the Budget Office, the P&MM Department, or other District Departments.
- Request for information or assistance from the Maintenance and Operations (M&O) or Engineering Departments.
- Engineering Department: construction and design or miscellaneous review responses.
- Law Department: Responses to permit reviews, technical reviews and other requests.
- M&O Department: Transmittal of Permit review responses.
- P&MM Department: Transmittal IO Memo for Service Agreements/Contracts.

Interoffice Memos with Signature Approval Line. (Template AII.) Used when written approval is required from the Department Director, the ED, or another Department Director.

- M&R Department: Memos requesting written approval from the Department Director, approving reports, special purchases or various requests, etc.
- ED: Requests to present a special report, abstract, or manuscript, or attend a special event.
- ED: Request for approval of Seminar topics, travel, or Speakers, etc.

- ED: Job Order Contract (JOC) over $50,000 requires ED Signature Approval.
- P&MM Department: JOC approvals (Under $50,000) requires Department Director Signature Approval.
- P&MM Department: JOC Change Orders requires ED Signature Approval.

Interoffice Memos with Fillable Content. (Templates AIII – AVIII.) Used when specific information must be conveyed to others. The IO Memo may also require an Approval Signature line.

- ED: Request to Fill a vacant or new position, or Request for a Position Change w/Signature Approval (Template AIII).
- ED: Recommendation to Fill w/Signature Approval (Template AIV).
- P&MM Department: Request for Professional Services-RFP w/ED Signature Approval (Template AV).
- P&MM Department: Sole Source Certificate of Good Standing-Out of State Co. (Template AVI) (no approval line required).
- P&MM Department: Request for Sole Source Supplier Illinois Co. (Template AVII) (no approval line required).
- P&MM Department: Contract Bid Proposal Recommendation (Appendix AVIII) (no approval line required).

Group B: Special Interoffice Memos

This group of memoranda are prepared by the M&R Department and consist of IO Memos for the ED's signature, or Technical IO Memos, which are currently prepared by various Task Forces, though may be converted to Technical Memorandum Reports. Memos for the ED's Office follow the formatting guidelines described in Appendix B**.** Use the appropriate department name in the IO Memo logo. Samples of Special IO Memos are located at the end of Appendix B.

Group B memos will incorporate the abbreviations or acronyms shown on Pages xi – xiv.

Executive Director Memos to the Board of Commissioners. Use ED IO Memo Logo and Department name (General Administration). These memos have a limited courtesy copy (cc) list. The signature line includes the initials of the Department Director, the author, and the typist on the signature page, and the initials of all other contributors in the initial line of the Reader's copy. If the IO Memo contains a bcc list, an extra copy of the Signature page listing all cc and bcc recipients, is submitted with the original Signature page and provided to the ED's Office so copies may be distributed to recipients on the bcc. All IO Memos signed by the ED should follow the guidelines below.

- ED IO Memo addressed to "The President and Members of the Board of Commissioners" (BOC) conveying information or responses to Commissioner or Constituent inquiries. (Template BIa).
- Board Meeting Summary Request responses are addressed to the BOC and signed by the ED. (Template BIb).

Technical Memos. Technical memos (TMs) are initiated by various departments and distributed throughout the District upon completion. With the Department Director's approval, the M&R Department will assign the TM a report number and convert the TM to a TM Report for posting on the District Website. If M&R Department staff prepares TMs, follow the guidance provided in Template BII and the Technical Memorandum Report guidelines shown in Appendix EVII.

Group C: Letters

Letters follow the guidelines described here, using the appropriate letterhead (and envelopes). Always check to ensure that the most current version of letterhead is being used. All letters in this group will incorporate the abbreviations and/or acronyms shown on Pages xi – xiv. Samples of letters are located at the end of the Appendix C.

Letters Prepared for the Department Director or Other Department Director's Signature. Letters are submitted to the Department Director's office in final, signature-ready format (Templates CIa and CIb), using the appropriate letterhead with the 100 East Erie Street address. Letterhead with the Stickney address may be used for correspondence signed by the Assistant Directors and Plain Letterhead (No name) can be used for letters signed by supervising staff, if approved by the respective Assistant Director. No bcc list is necessary for M&R Department letters.

- Letters to the IEPA or other regulatory agencies conveying data pertaining to WRP NPDES Permits. (Template CIa). These letters are later converted to Monitoring Reports (Appendix EIV) and posted on the District Website.
- User Charge Letters, Department Director's IWD letterhead (Template CI).

Letters for Other Department Director's Signature. (Template CIb), require the use the appropriate Department's letterhead. If printing a letter for a department other than the P&MM Department, it will be necessary to print the letter to the Department Director's printer, since most letterhead is unavailable for WRP distribution. The Reader copy is prepared on "draft" letterhead, using the appropriate department's letterhead when available, otherwise, use a draft copy of the M&R Department letterhead to aid in determining the layout and spacing. Letterhead for the P&MM Department is available to staff, therefore, letters are printed out by the typist and sent to the Department Director's office for approval and processing.

Letters Prepared for the Executive Directors' Signature. Letters are prepared following the guidelines in Template CII. The Reader copy may be prepared on draft M&R

Department letterhead to determine spacing and layout. The letter is forwarded and printed to the Department Director's office printer \\XENPRINT021/ RND_DIR_SEC_EC for approval and processing.

- ED signature letters to government agencies or elected officials. Letters such as these are at the request of the ED or the Department Director. Uses ED letterhead.
- ED signature letters to Industrial Users in response to Appeals or Discharge Authorizations.

Board Transmittal Letters and Ordinances. Standard Board transmittal letters (BTL) follow format instructions and templates found on the District Website.

- Procurement Committee BTLs: These are emailed to the Budget and Administrative Section for final processing. Templates vary, but all are located on the District Website under Procurement forms.
- IWD Appeal BTLs: IWD BTL template.
- Ordinance BTLs are updated in "Strikethrough" format (not track changes) and presented for approval and uploading in the Online Legistar (OLS) Database. Two copies of the ordinance are submitted for final approval, one strikethrough copy and one "clean" copy, sans markup.

Group D: Non-Routine Documents

Documents in Group D consist of Fillable Documents or Forms; Abstracts, Agreements, Manuscripts and other non-routine correspondence. When required, pre-defined forms or templates are completed at the divisional level and submitted for the Department Director's approval. Formatted correspondence or reports included in this group should incorporate the use of the abbreviations and/or acronyms shown on Pages xi – xiv.

Shown below is a list of various documents requiring special forms or templates, which are attached to a transmittal IO memo and submitted to the Department Director's office. Due to the variety of documents, only various samples will be included in Appendix D.

- Abstracts: Requires Department Director approval prior to preparing. Follow M&R Department report guidelines or organizational procedures when requested.
- Agreements with vendors/consultants, routed for signature approval (Special template) requires prior approval from the ED and Department Director.
- Conference/Seminar Travel Authorization Form complete form located on the District Website. After appropriate divisional approval is obtained, submit the

form directly to the Supervisor of the M&R Department Budget and Administrative Section, MOBA, for verification of budget codes.

- Contracts prepared and routed for signature approval, P&MM assists, requires prior approval from ED and Department Director (Special template).
- Manuscripts for journal publication (Follow M&R Department Research Report or Journal specific guidelines) requires Department Director approval prior to submittal. May be converted to a Manuscript Report.
- Quality Assurance Project Plans (QAPPs) and Standard Operating Procedures (SOPs) are initiated and prepared by the ALD and the Quality Assurance Coordinator. (Laboratory predetermined format).
- Requests for Proposals (RFPs) may include board letters, IO Memos or contract documents and routed for signature approval, requires prior signature approval from ED and Department Director (Special template).
- Special investigation reports (IWD fillable template).

Group E: Reports

The M&R Department prepares and publishes numerous reports each year. In addition to the Research and the Monitoring Reports, four new reports have been added to the types of reports prepared by the Department (Manuscript, Bulletin Brochures, Memorandum, and Technical Memorandum). The abbreviations and/or acronyms shown on Pages xi – xiv are acceptable for use in all reports. Report templates, guidelines, and sample excerpts are located directly in the appendix section for each report (Appendices EI – EVI) and additional report content components are shown on Pages xxii, 39, and in the beginning of Appendix E.

- **Research Reports**. The formatting, layout, and style of Research Reports are described in Appendix EI. Two changes have been added to this report; one involves a revised style for First, Second, Third, and Fourth-Order Title Headings (Headings), the second is the inclusion of a LIST OF ACRONYMS.
- **Manuscript Reports**. These reports (Appendix EII) follow the publisher's formatting guidelines for the preparation of the manuscript. The Department Director approves the initial preparation of the manuscript. The final manuscript is attached to an IO Memo for the Department Director's signature approval (Template AII).
- **Bulletin Brochure Reports**. Conveys Department information to the general public and uses a special logo template with modified report content as shown in Appendix EIII. The Public Affairs Section of the General Administration Department may assist in preparing these reports.
- **Monitoring Reports**. These reports (Appendix EIV) follow the Research Report format guidelines and contain limited verbiage. Also identified within the Monitoring Report group is a modified report that begins as a letter. The

letter (Template CI) and attachments are prepared to convey required permit reporting information to regulatory agencies and submitted to the Department Director for signature. Once signed and distributed, the letter and attachments form the body of the report and are attached to a report cover and tile page and other report components (Page xxii) then assigned a report number. Other Monitoring Reports should be attached to an IO Approval Memo for the Department Director's signature. All Monitoring Reports are posted on the District Website.

- **Memorandum Reports**. IO Memos (Template AI) convey findings and recommendations to District Departments. After signature and distribution, the IO Memo and attachment(s) are affixed to a report cover page and other report components (Page xxii), assigned a report number and posted on the District Website. (Appendix EV). Attachments to the IO Memo should be formatted as stand-alone documents, following M&R Department Research Report guidelines.
- **Technical Memorandum Reports**. Technical IO Memos (Template BII) are prepared by various departments to convey task force findings to the District. Upon approval by the Department Director, the Technical IO Memo is attached to other report components (Page xxii) and converted to a Technical Memorandum Report, assigned an M&R Department report number and posted on the District Website (Appendix EVI).

A guideline for preparing Report Cover and Title Pages is shown in Appendix E0.

Following is a list of components necessary for the completion of each report type. A copy of the list will also be included on Page 39 and at the beginning of Appendix E.

COMPONENTS FOR MONITORING AND RESEARCH DEPARTMENT REPORTS

Though textual matter will vary within each report, certain common components are necessary in order to complete a report, or document, for posting on the District Website, i.e. Report Cover page, Title page, Table of Contents, etc. (Front Matter of Report). The report type will determine the subject content of the report (Body), and the Appendices (Back Matter of Report) may include text, tables, figures, charts, etc. Listed below are the components necessary to complete a report, or convert a manuscript, letter, memorandum, or technical memorandum into an M&R Department Report.

	Report Type					
Required Components	**EI[1]**	**EII[2]**	**EIII[3]**	**EIV[4]**	**EV[5]**	**EVI[6]**
Blue Report Cover Page	X	X		X*	X	X
Report Title Page	X			X*	X	X
Table of Contents	X			X*		
List of Tables	X			X*		
List of Figures	X			X*		
List of Acronyms	X			X		
Acknowledgement	X			X		
Disclaimer	X			X		
Summary	X			X		
Appendices, if required	X			X*		
Other Components						
Modified Title Page		X				
Modified Foreword/Disclaimer		X			X	X
Modified Title Headings		X	X			X
Special Logo			X			
Special Formatting		X	X	X*		X

[1] EI – Research Reports.
[2] EII – Manuscript Reports.
[3] EIII – Bulletin Brochures.
[4] EIV – Monitoring Reports (*Regulatory Agency Letters Converted to Reports).
[5] EV – Memorandum Reports.
[6] EVI – Technical Memorandum Reports.

INTRODUCTION

The purpose of this "Style and Format Guide for Letters, Memoranda, and Reports" (Style Guide), is to offer direction to staff members who are new to the M&R Department and to assist them in the training process of document and report preparation and formatting. For current staff, the Style Guide is a reiteration of the styles and formatting procedures currently in use, and a clarification of new or revised documents. The Style Guide is prepared for all staff who author, type, format, review, edit and process Department documents and will be updated yearly, as needed.

Formatting of correspondence, informational documents (used as attachments), and reports has been updated with several new and revised techniques that are described herein. On the following page is a summary of the documents and report types discussed in the Style Guide. The "Formatting for All Documents" Section defines the formatting styles for M&R Department documents. Thereafter, each document type is described in its own category, along with formatting and document content guidelines specific to that document type.

This Style Guide is a documentation of instructions necessary to initiate and process M&R Department documents and reports; therefore, the content covered in this Style Guide replaces all previous guidebooks and miscellaneous formatting instructions relating to M&R Department documents. Templates and guidelines are included in Appendices A – E, while additional formatting guidelines for Document Content (Tables, Figures, Enumerated Lists, Title Headings, etc.) are presented in Appendix F.

Currently, an electronic Microsoft Word version of the document templates are filed in the **\\Eagle\Stickney\R&D\2015 Style Guide** folder for your use. (The folder is located at the top of the list.) It will be necessary to save the desired template(s) or Acronym List to your home folder before attempting any edits or shortcut locations. A PDF copy of the Style Guide and Acronym List will also be available in the folder for your use.

Later this year many M&R Department files will be migrated to the "Hawk" Drive and the Style Guide templates will be moved. That location address will be on the **\\Hawk\M&R\...** Everyone will be notified of the Hawk address once the migration is complete.

INFORMATION FOR AUTHORS AND REVIEWERS

Document Review and Verification

Abstracts, IO Memos, letters, informational documents or attachments, and reports, should be read by all contributing authors or originators. The accuracy of the content of these documents is the responsibility of the author or originator. The text should be thoroughly reviewed and all computations verified. Review all tables, figures, and references for satisfactory completion and proper formatting. All Table of Contents should be checked and verified with the report titles and page numbers.

Abbreviations and Acronyms. A "LIST OF ACRONYMS" should be included in all reports and located in the front matter of the report after the LIST OF FIGURES. Group A: IO Memos may incorporate the use of the special acronyms or abbreviations indicated in the LIST OF ABBREVIATIONS AND ACRONYMS shown on Page x, while other correspondence and reports will contain the acronyms shown on Pages xi – xiv.

Computational Errors. Accuracy can be confirmed by double-checking computations with care, and then having these computations reviewed by at least one of the contributing authors or originators.

Proofreading. Procedures for proofreading will be implemented for all correspondence and reports originating in your section or division and submitted to the Department Director's office for transmittal to other departments, or outside entities. What was formerly known as the Initial (Reader) copy of the correspondence, will now be referred to as the "Reader's" copy, the "Signature" copy term will remain the same.

Reports and correspondence, including text, tables, data, user charge liability calculations, and figures, should be proofread by at least one professional staff member who is a coauthor or contributor of said document. The initials or name of this reviewer should appear on the Reader's copy of the correspondence, or the cover page of the report submitted to the Department Director's office.

This review procedure shall apply to all initial submittals, and any subsequent submittals, following any rewrites for corrections, and/or modifications, regardless of the number of resubmittals that may result from these rewrites.

Tables and Figures. The tables and figures should be self-explanatory if separated from the report or correspondence and prepared as stand-alone documents. Follow M&R Department Research Report formatting guidelines when preparing tables or figures. If Headers are used, a 1-inch top Header margin should be set. (Appendix F).

Title Heading Styles. The former Heading style remains the same, but the line spacing between the Headings has been revised. (Appendix F).

INFORMATION FOR TYPISTS AND PROOFREADERS

Document Review and Verification

The Department Director's office will return any reports, letters, IO Memo, abstracts, or informational documents to the respective Assistant Director's office, in cases where editing, formatting, or instructional procedures are disregarded. If an existing template does not fully satisfy the needs of the document being prepared, the typist should seek direction from the Department Director's office regarding modification of the template in question.

When formatting and proofreading documents or reports, use the instructions contained herein, unless a special project demands otherwise and unique methods are required, such as in abstracts, manuscripts, or published papers. If special formatting is required, the typist should indicate this to the Department Director's office. In some instances where a document will undergo additional edits by the Department Director, the Department Director's office will request an electronic copy of the final document from the typist. Upon completion of the document, the Department Director's office will return the final electronic document to the typist.

Abbreviations and Acronyms. Group A: IO Memos may incorporate the use of the special abbreviations and acronyms (Page x), while all other correspondence and reports will contain the acronyms shown on Pages xi – xiv. Additionally, a "LIST OF ACRONYMS" will now be included in all reports and located in the front matter of the report, after the List of Figures.

Document Formatting. Abstracts, reports, letters, IO Memos, and stand-alone informational documents or attachments received for formatting, proofreading, and processing, should be prepared using the Times New Roman font and 12-point type, with 1-inch margins on all sides and 1-inch headers and .50-inch footers. Templates and instructional guidelines for the documents discussed herein are presented in Appendices A – E.

Enumerated Text. Depending upon the length of the document, the typist can adjust the spacing between enumerated items from 12 points to 6 points. If the typist is working on a long document with several enumerated or bulleted lists, the spacing between the items should remain consistent throughout the document. Enumerated lists are explained further in Appendix F.

Grammar, Punctuation, and Spelling. Accuracy in sentence structure, verb agreement, formatting of tables, enumerated or bulleted lists, and proper use of abbreviations and acronyms, etc., can be confirmed by the regular use of spell check, the Style Guide, a standard dictionary, the Gregg Reference Manual, and thorough proofreading. If in doubt, refer to the original author or originator for clarification.

Hyphenation. Hyphenations formerly used in letters and IO Memos are being eliminated. Hyphenations continue to be used in abstracts, and reports. Informational documents

or attachments to all letters and IO Memos should be formatted as stand-alone documents following the M&R Research Report guidelines.

Proofreading. Documents originating in the M&R Department undergo various levels of editing, which may require someone other than the author or original typist complete any edits requested. Therefore, formatting methods should remain at a level that is within the skills expected of the typist in the Department. This procedure will eliminate the need for a backup typist to spend an exorbitant amount of time trying to determine the formatting styles used by others in the preparation of the original document, table, or report.

After proofreading reports, the typists should compare the report and all titles and pages numbers in the Table of Contents, List of Tables, and List of Figures to ensure that the correct page numbers are inserted and that all title headings are exact. Consistency, spacing, proper indentations, margins, centering, line and page endings, vertical spacing, and cover pages should also be checked. If several typists are working on the same document, each typist should include their initials on the Reader copy of the document. A Proofreader's Checklist in included in (Appendix F) for your use.

Documents submitted to the Department Director's Office should be in final format and signature ready with all Reader's initials, Track Changes, and file notations removed. Attention should be given to the consistency and overall appearance of the correspondence or report, and care should be taken to give the document a pleasing and uniform appearance.

Reports Submitted to the Print Shop. In order to achieve rapid publication, reports are prepared directly by digital printing from an electronic Word copy of the final report document. The typists are fully responsible for the quality of the formatting and appearance of reports, and therefore, are required to carefully observe the guidelines indicated in Appendix E. Documents with a less than desirable appearance will not be submitted for printing, and will be returned to the originating division.

Tables and Figures. The tables and figures should be self-explanatory and capable of standing alone if separated from the report or correspondence. Specific formatting of the table or figure should be followed (Appendix F). Acronyms should not be used in tables, figures, or Titles.

Tables and figures should appear on a separate page (or pages), unless the table or figure is relatively small, in which case, the table or figure may be "embedded" in the report text immediately following the first reference to the table or figure. Embedded tables and figures are formatted in the same manner as full-page tables or figures and should be formatted to fit within the margins of the page, regardless if they are embedded or prepared on a separate page. If embedded, leave one or two blank lines before the title and one or two blank lines after the last line of text. Be consistent within the document.

When a reference is made to a table, figure, or appendix in the text of the report, this reference should be underlined as follows: Table 1, Table 2, Figure 3, or Appendix A, etc.

All appendices in a report should be preceded with an appendix cover page indicating the appendix number or letter and the title of the appendix (if any).

If an existing template does not fully satisfy the needs of the document being prepared, the typist should seek direction from the Department Director's office regarding modification of the template in question. If modification of a template is authorized, the modification is for the specific document in question. It should not be assumed that future documents can be modified.

Title Heading Styles. The Heading styles remain the same, but the spacing between the Headings has been revised. Information regarding Heading styles is presented in the "Formatting for All Documents" Section (Pages 6 – 13) and Appendix F.

An electronic Microsoft Word version of the templates will be filed in the \\Eagle\Stickney\R&D\2015 Style Guide folder for your use. (The folder is located at the top of the list.) It will be necessary to save the desired template(s) or Acronym List to your home folder before attempting any edits or shortcut locations.

Later this year many M&R Department files will be migrated to the "Hawk" Drive and the Style Guide templates will be moved. That location address will be **\\Hawk\M&R\...** Everyone will be notified of the Hawk address once the migration is complete.

FORMATTING FOR ALL DOCUMENTS

The documents mentioned in this Style Guide have been divided into five categories: Group A: Interoffice Memos; Group B: Special Interoffice Memos; Group C: Letters; Group D: Non-Routine Documents; and Group E: Reports. Each category section contains formatting guidelines and standard document content that are specific to the document type. Shown below is an overview of formatting guidelines that may be used in any of the category groups.

If an existing template does not fully satisfy the needs of the document being prepared, the typist should seek direction from the Department Director's office regarding modification of the template in question. If modification of a template is authorized, the modification is for the specific document in question. It should not be assumed that future documents can be modified.

An electronic Microsoft Word version of the templates will be filed in the \\Eagle\Stickney\R&D\2015 Style Guide folder for your use. (The folder is located at the top of the list.) It will be necessary to save the desired template(s) or Acronym List to your home folder before attempting any edits or shortcut locations.

Later, the templates will be moved to the Hawk Drive. Notice will be sent once this is completed.

Types of Documents

Interoffice Memos. These are prepared in Block Style with No Indentation of the first line of type and Justified with No Hyphenation. Guidance for memoranda is shown in Group A: IO Memos and Group B: Special IO Memos and in Appendices A and B, respectively. Special acronyms and abbreviations have been approved for use in Group A: IO Memos (Page x). All other IO Memos should use the acronyms listed on Pages xi – xiv. Some informational IO Memos may be converted to reports and will require additional report components (Page 39).

Letters. Letters should be prepared in Modified Block Style with a first line .50-inch Indented Paragraph and Justified with No Hyphenation. (See Group C: Letters and Appendix C). Group C: Letters will also incorporate the abbreviations/acronyms located on Pages xi – xiv.

Informational documents and those used as attachments should be formatted as stand-alone documents following M&R Research Report guidelines (Appendix E).

Non-Routine Documents. Many documents in this group contain fillable forms or pre-defined formatting instruction for abstracts, manuscripts, and contracts. Defined instructions should be followed. For abstracts and manuscripts, if specific instructions are not provided, follow the guidelines in Appendix E for M&R Department Research Reports.

Reports. All reports are prepared in a Modified Block Style with a .50-inch first line Indented Paragraph, Justified with Hyphenation. Reports are prepared in one-column format and single-spaced. See Group E: Reports and Appendix E for specific instructions for each report.

Body Style and Page Layout

Font Type and Size. Correspondence and reports prepared by the M&R Department should be justified, with 1-inch margins on top, bottom, and both sides with 1-inch Headers and .50-inch Footers. Documents are prepared in Times New Roman, 12-point font size, with single-spaced text and single-spaced blank lines between paragraphs.

In certain cases, when formatting some letters or IO Memos, it may become necessary to reduce the font size in long correspondence, to enable the document to fit on one page. Font sizes can be adjusted between 10.5- and 12-point type (10-point type is too small for some people to read). If a letter or IO Memo does not fit on one page with a reduced font size, the font should be returned to 12 points and the document carried over to a continuation page(s), as needed.

Headers and Footers. Header margins are set at 1-inch on the top and both sides. Footer margins are set at .50-inch from the bottom margin. Text within the header or footer should be the same size and style as the type used in the body of the document. If correspondence contains a continuation page(s), include the recipient(s) name, page number, and date details on the first line in the Header section, and the word Subject begins on the third line of type in the Header. Insert two blank lines after the last line of the Subject text. Page numbers should be inserted into the Header section for letters and IO Memos, and in the Footer section for abstracts, reports or informational documents attached to correspondence.

If edits are required, the reviewers and typist should ensure that all information included in Headers or Footers has been updated to reflect the changes.

Hyphenation. Word hyphenation in letters, IO Memos, and is being eliminated. Informational documents or attachments and Reports (Research, Bulletin Brochure, Monitoring, and Data) will continue to be hyphenated. Set the hyphenation mode to Manual to allow for no more than two consecutive lines of hyphenated text.

Margins. Letters, IO Memos, informational documents, abstracts, and report margins should be set at 1-inch on all sides with a 1-inch Header and a .50-inch Footer. Margin widths should remain at the 1-inch setting unless confirmed with the Department Director's office or indicated in specific document guidelines.

If the document is very short, the margins can be adjusted to 1.25-inches on the right and left margins in order to achieve an evenly spaced document with a professional appearance. Some documents and ED signed IO Memos are prepared using the wider 1.25-inch margin; refer to the document guidelines in Appendices B and C.

Pagination. All pages of a report should be numbered consecutively. The page numbers shall be placed at the bottom of the page and centered in the footer section set at .50-inch. All pages in the front matter (Table of Contents, List of Tables, etc., up to and including the Acknowledgement/Disclaimer page) should be numbered in lower case Roman numerals; i, ii,

iii, iv, etc. The body of text, from the Introduction through the References, should be numbered using Arabic numbers; 1, 2, etc., and the back matter of the report (Appendices), should reference the particular appendix in which they appear, Appendix I should be numbered AI-1, AI-2, etc. and in Appendix II numbered AII-1, AII-2, etc.

Paragraph Spacing. There should be a minimum of two lines of type at the end of a page and two or more lines at the beginning of the next page. For a paragraph of four or more lines, always leave at least two lines of the paragraph at the bottom of the page, and carry over at least two lines to the beginning of the continuation page. It is also common practice to refrain from dividing a paragraph that contains three or fewer lines. If a small paragraph cannot be divided, move the entire paragraph to the following page.

The typist should attempt to keep the bottom margins as uniform as possible. In order to avoid odd spacing of sentences at the end or beginning of a page, select the widow/orphan feature in the Paragraph Set Up box under the Home tab in the Microsoft Word Ribbon.

Reader and Signature Copy Initials. What was formerly referred to as the Initial (Reader) copy of correspondence, is now being referred to as the "Reader's" copy.

The initials of all reviewers should be positioned on the same line as the Signature initials, beginning at approximately the center (3-inch) mark on the document ruler and should include the initials of the Department Director, the Assistant Director, all Reviewers, all Co-Authors, Authors and all typists (Appendices A and C).

The term "Signature" copy will remain the same and will include the initials of the Department Director, the Assistant Director, the author and the final typist. The Signature initials on documents begin at the left-hand margin. No blank lines are inserted after the signature and reviewer initials. Correspondence signed by the ED requires fewer Signature and Reader initials (Appendices B and C).

Signature Approval Lines. The words "APPROVED BY:" should begin on the second line after the last line of typed text, then leave three blank lines and insert the Approver's name on the fourth line of type and the Approver's Title on the fifth line of type. Leave two blank lines before entering the signature and reader's initial lines. If space is an issue, leave one blank line after the initial line.

Subject Lines. Subject lines in IO Memos are indented .50-inch on the right-hand margin and justified with no hyphenation or acronyms (Appendices A and C).

In long subject lines, any carryover lines of type begin under the first word in line one, after the word Subject. Short subject lines in IO Memos may be centered on the continuation page(s) in the Header section, only if the subject is one line long and will fit within the .50-inch indented right and left margins, otherwise, use the same justified style as on the first page of the IO Memo. Leave two blank lines after the subject line regardless of the style of subject line used.

Subject lines in letters and informational documents are indented .50-inch on the right and left margins. Text is justified with no hyphenation or acronyms. Additional lines of type begin under the first word in line one, after the word Subject. Short subject lines in letters and informational documents may be centered on all pages, only if the text is one line long and will fit within the .50-inch indented margins. If the subject is longer than one line, use the justified style for long subject lines. Leave two blank lines after the subject line, regardless of the style of subject line used. The word Subject on continuation pages should be prepared in the same case style as typed on the first page of the document.

Document Content

Abbreviations and Acronyms. When using an abbreviation or acronym spell out the full definition of the term and include the abbreviation or acronym in parenthesis, when it is first used. A LIST OF ACRONYMS should be included in all reports and located in the front matter of the report following the LIST OF FIGURES. Acceptable acronyms for reports and correspondence are shown on Pages xi – xiv.

Acronyms used in Group A: IO Memos may incorporate the use of the special acronyms and abbreviations indicated in the LIST OF ABBREVIATIONS AND ACRONYMS shown on Page x. Do not include abbreviations or acronyms in titles, or subject lines in any documents other than those listed in Group A: IO Memos.

Some abbreviations are always acceptable, even in the most formal context. Those that precede or follow personal names; Mr. or Messrs., Ms. or Mses., Mrs. or Mmes., Jr., Sr., Esq., Ph.D., Dr. or Drs.; those that are part of an organization's legal name; Co., Inc., Ltd.; those used in expressions of time; a.m., p.m., CTS, EDT; and a few miscellaneous expressions such as A.D., B.C., R.S.V.P.

When academic degrees (Ph.D., M.S., P.E.) follow a person's name, do not use such titles as Dr., Mr., Ms., or Mrs. along with the academic degrees. It is acceptable to use the person's title and full name, or the person's full name and academic degree.

Abbreviations for units of measurement, engineering, and scientific terms, and other terms common in the field shall conform to those published in either the Author's Guide Section of the Journal of the Water Pollution Control Federation or the current edition of Standard Methods for the Examination of Water and Wastewaters.

Be consistent within the same material. Avoid using abbreviations or acronyms in some sentences and spelling it out in other sentences. Once a style of an abbreviation or acronym is used (USEPA), refrain from using a different style elsewhere in the document (U.S. EPA).

Attachments. Attachments, enclosures or informational documents, should be formatted as stand-alone documents following the M&R Department Research Report guidelines.

Attachment or Enclosure Notation. If any, this line begins on the line following the Signature and Reader's initial line. The term used in the body of the document i.e., Attachment or Enclosure, should be used to identify the notation.

Courtesy Copies . When a letter or IO memo carries both an enclosure notation and a copy notation, it is assumed that the enclosures accompany only the original letter. If a copy of the enclosure is also to accompany some copies of the letter or IO memo, it should be indicated in the courtesy copy (cc) list. The cc designation line begins immediately after the Attachment/Enclosure notation line, at the left hand margin.

The terms "cc:" or "bcc:" are used to indicate that the recipient(s) will receive a copy of only the signed document without any attachments. Refrain from using bcc designations in M&R Department documents, unless the document is being prepared for the ED's signature.

The terms "cc/att:" or "bcc/att:" should be used to indicate that the recipient(s) will receive a copy of the signed document plus all attachments. Refrain from using bcc designations in M&R Department documents, unless the document is being prepared for the ED's signature.

The Administrative Aide to the President, (Mr./Ms. first initial. last name) is always included in the cc: or cc/att: list. Any other copy designations should be indicated as a "bcc" or "bcc/att:" when necessary.

When bcc notations are included in an IO Memo or letter prepared for the ED's signature, the typist should prepare two signature copies of the document. (The first copy will contain only the cc list, while the second copy will contain both the cc and bcc lists.) Both signature copies are sent to the ED's office for use in distributing the document to all recipients.

Documents prepared for the Department Director's signature do not require bcc: or bcc/att: notations, unless specifically requested by the Department Director or the Assistant Director.

Document Distribution. The Department Director's staff will distribute electronic and/or hardcopy documents to staff located at the MOB or MOBA. Electronic copies will be forwarded to the typist, the Division's Assistant Director's office (administrative support staff), and any other recipient indicated on the cc list. Staff located in other departments (regardless of location) should receive only a hardcopy of the document and attachment as designated in the cc or bcc lists.

The Reader's copy and the typist's back-up material will be returned to the respective Division's Assistant Director's office for routing to the typist. It will be the typist's responsibility to distribute hardcopies to any staff members outside of the M&R Department at remote locations.

Division and Section staff are encouraged to maintain copies of all final distributed electronic documents forwarded from the Department Director's office.

Enumerated and Bulleted Text. Text should be indented .50-inch from the left and right margins, with one blank line between items in the list (equal to the size of type being used). If any item continues to a second line, the text on the second line of type should begin under the first word of the sentence above it. The indented position of new enumerated information e.g., in indices, etc., should be placed in line with the enumerated text above it (see below). Additional guidelines are shown in Appendix F.

- In long documents and reports, the line spacing separating items within the enumerated list can be reduced from 12 to 6 points. The line spacing before the first line of text and the line spacing after the last line of text should remain at 12 points. Insert a .25-inch tab space between the number or bullet and the text that follows.
    - Once the spacing between line items is changed, be consistent throughout the document by using the same line spacing in any subsequent enumerated or bulleted lists.
- Leave one blank space at the end of the enumerated or bulleted text, before beginning a new paragraph. If a first- or second-order heading follows the list, leave the appropriate heading spacing between the list and the heading.

Subscripts and Superscripts. Subscripts and superscripts should be prepared using 12-point type. When included in document text, the scripts should placed directly following the word or figure they refer to with no blank spaces in between. However, one blank space should be inserted between the script and the text when used in Table or Figure footnotes. This script should be punctuated with a period.

Tables and Figures. The tables and figures should be self-explanatory and be capable of standing alone if separated from the report or correspondence. Specific formatting of the table or figure should be followed. All margins should be set at 1-inch with a .50-inch footer. Table titles are prepared as First-Order Headings, centered on the page in all capital letters with the table number separated by a colon and two blank spaces before the start of the table name. Acronyms should not be used in table titles. If you use a header that too should be set at 1-inch. additional instructions for the preparation of Tables and Figures is shown in Appendix F.

If the table or figure is relatively small, it may be "embedded" within the report text immediately following the first reference to the table or figure. Embedded tables and figures are formatted in the same manner as full-page tables or figures, and should be able to fit within the page margins, regardless if they are embedded or prepared on a separate page.

When reference is made to a table, figure, appendix or page number in the text of a document, this reference should be underlined as follows: Table 1, Table 2, Figure 3, Appendix A, or Pages 2 – 12, etc.

Title Headings Styles. The line spacing for First-, Second-, Third-, and Fourth-Order Headings has been revised for all documents and is shown below and in Appendix F.

FIRST-ORDER TITLE HEADINGS

First-Order Headings begin a new page and are centered across the entire page in boldface with all capital letters. Leave two blank lines after each First-Order Heading. Blank line spacing should be equal to the type size used in the text if the heading is larger than 12-point type. When centering First-Order Headings, aim to achieve an appealing division of words if the heading carries over to additional lines of text.

First-Order Headings within Technical Memorandum Reports do not have to begin a new page; they can be placed in the center of the page with two blank lines before and after the heading and may be formatted in bold, Upper and Lower case letters i.e., **First-Order Heading**.

Second-Order Title Headings

Second-Order Headings start flush with the left margin on a line by itself. Insert two blank lines before a Second-Order Heading when it follows plain text, or another Second-, Third- or Fourth-Order Heading. Do not insert any blank lines before a Second-Order Heading when it follows a First-Order Heading. Type Second-Order Headings in bold caps and lowercase with no ending punctuation. The first line of text in a Second-Order Heading paragraph is indented .50-inch from the left margin. Leave one blank line between the Second-Order Heading and the paragraph text. Leave one blank line between Second-Order Heading paragraphs.

Third-Order Title Headings. Third-Order Headings begins a new paragraph and is immediately followed by text on the same line. Insert one blank line before Third-Order Headings. Indent the first line of a Third-Order Heading .50-inch from the left margin. Type the heading in bold caps and lowercase. The Third-Order Heading is punctuated with a period with text beginning one or two spaces after the heading punctuation. Leave one blank line between Third-Order Heading paragraphs.

Fourth-Order Title Headings. A Fourth-Order Headings begin a new paragraph and is immediately followed by text on the same line. Insert one blank line before Fourth-Order Headings. Indent the first line of a Fourth-Order Heading .50 inch from the left margin. Type heading in italics caps and lowercase, followed by a period. The text begins one or two spaces after the punctuation. Leave one blank line between Fourth-Order Heading paragraphs.

Water Reclamation Plant Names. When preparing Group A: IO Memos, special abbreviations and acronyms may be used when referencing water reclamation plant (WRP) names, Department names, and several governing agencies (Page x).

The “Common” name of the WRP is used to define the facility and then the abbreviated name is used as the acronym i.e., Hanover Pk. WRP (HWRP). When referring to District Departments, the department name may be used without first defining the full department name i.e., M&O Department, P&MM Department, etc. The word Department should always be included in the shortened Department name.

When using abbreviations in documents other than Group A: IO Memos, it should be noted that the terms District, MWRD, WRP and TARP should be spelled out at first use.

The author and typist must maintain consistency in the form of the common name and abbreviations used throughout the document.

All other documents in Groups B, C, D, and E and correspondence to Industrial Users or outside entities, regulatory agencies, and documents prepared for signature by the ED the full, "Proper" name of the facility or department should be used and defined at first use and the "Common" name of the WRP, or listed name of the department used as the acronym (Pages xi – xiv).

WATER RECLAMATION PLANT NAMES

Proper Name	**Common Name**	**Abbreviation**
Calumet WRP (Spell Out WRP)	Calumet WRP	CWRP
John E. Egan WRP	Egan WRP	EWRP
Hanover Park WRP	Hanover Pk. WRP	HPWRP
James C. Kirie WRP	Kirie WRP	KWRP
Lemont WRP	Lemont WRP	LWRP
Stickney WRP	Stickney WRP	SWRP
Terrence J. O'Brien WRP	O'Brien WRP	OWRP

Word Division. In the no hyphenation mode this will not cause any problems for the typist, but when preparing documents, the typist should apply the following guidelines, as necessary.

- Do NOT divide the last word on a page.
- Divide words only between syllables. Consult a dictionary if in doubt.
- Do NOT divide one-syllable words. Even when "ed" is added to some words, remain one-syllable words i.e., drummed, and should not be divided.
- Do NOT divide a word unless you can leave a syllable of at least three characters on the upper line and you can carry a syllable of at least three characters to the next line. Example: ad- join, there- of, or here-in, etc. Whenever possible, avoid dividing any word with fewer than six letters.
- Do NOT divide contractions or abbreviations e.g., o'clock, USEPA, HPWRP.

GROUP A: INTEROFFICE MEMOS

Group A: Interoffice Memos include IO Memos for the M&R Department Director's Signature; IO Memos with a Signature Approval Line; and IO Memos with Fillable Content. Templates and guidelines for IO Memos in Group A, plus various IO Memo samples are listed in Appendix A.

Types of Interoffice Memos

Group A: IO Memos convey various information to others and contains specific templates. The Department Director, Division Assistant Directors, or other Department Directors sign IO Memos in this group. Review the entire list before selecting the template style to use. If the existing template does not fully satisfy the needs of the document being prepared, please seek direction from the Department Director's office regarding modification of the template in question. If a specific IO Memo template is not found, determine the appropriate IO Memo in Appendix A and insert the necessary information or contact the Department Director's office for guidance.

Interoffice Memos for the Department Director's Signature. These IO Memos are used to convey M&R Department responses to, or requests from, other departments (Templates A0 and AI). Occasionally, an IO Memo will be converted to a report and will require additional report components to enable posting on the District Website (Page 39).

Interoffice Memos with Signature Approval Line. Used as a transmittal or cover memo for reports, abstracts, travel, speaker approval, work plans, reports or manuscripts, when written approval is required from the ED, the Department Director, or any other Department Director. All **documents** listed are prepared with a signature approval line using Templates A0 and AII. If a specific template is not found, use the template and insert the appropriate text and signature approval line, as needed.

Interoffice Memos with Fillable Content. Used when information must be conveyed in a specific manner or in fields. These memos may or may not require a signature approval line (Templates A0 and AIII through AVIII). If a specific template is not found, review all templates to determine the type of information to be conveyed and use the appropriate template, then insert the required fields and signature approval line, as needed.

Guidelines for Interoffice Memos

Documents submitted to the Department Director's office for approval signature should be dated and sent well in advance of the date on the document to allow sufficient time to process, sign, and finalize the document.

If special formatting methods are necessary for completing certain documents, the typist should communicate this information to the Department Director's office.

Body Style and Page Layout. The standard format style for all M&R Department IO Memos follow the formatting structure shown in Appendix A and described below. For additional document formatting information not indicated below, please refer to the guidelines in Appendix A or information shown in Formatting for all Documents (Pages 6 – 13).

- All M&R Department IO Memos are prepared in Block Style with No Indentation of the first line of type. A Justified right margin, and No Hyphenation. Memos are prepared using the IO Memo Logo shown in Appendix A0.
- Format 1-inch margins on all sides and on continuation pages, with a 1-inch Header and .50-inch Footer. If the memo is very short, the left and right margin width can be adjusted to 1.25 inches on the both margins.
- Times New Roman font, 12-point type, single-spaced, with one blank 12-point line between paragraphs. This should be the standard font and point size for all IO Memos.

  If necessary, the type size can be reduced to between 10.5 – 12-point type when preparing lengthy documents. Typists should maintain the blank line spacing between paragraphs equal to the type size selected.

  If the document will not fit on one page when using a smaller type font, the type font should be reset to 12 points and continuation pages formatted as necessary in order to achieve a professional looking document.

Document Content

Abbreviations and Acronyms. When preparing Group A: IO Memos, special abbreviations and acronyms may be used when referencing water reclamation plant (WRP) names, Department names, and several governing agencies (Page x).

The "Common" name of the WRP is used to define the facility and then the abbreviated name is used as the acronym i.e., Hanover Pk. WRP (HWRP) (Pages 12 and 13). When referring to District Departments, the department name may be used without first defining the full department name i.e., M&O Department, P&MM Department, etc. The word Department should always be included in the shortened Department name.

Also, when using abbreviations in Group A: IO Memos, it should be noted that the terms District, MWRD, WRP and TARP do not have to be spelled out at first use. In all other documents and reports, these terms are to be defined at first use. The author and typist must maintain consistency in the form of the common name and abbreviations used.

Attachment and Enclosure Notations. If any, this line begins on the line following the Signature and Reader's initial line. The term used in the body of the document i.e., attachment or enclosure, should be the term used in the copy notation.

Courtesy Copies. When a letter or IO memo carries both an enclosure notation and a courtesy copy (cc) notation, it is assumed that the enclosures accompany only the original letter. If a copy of the enclosure is also to accompany some copies of the letter or IO memo, it should be indicated in the courtesy copy (cc) list. The cc designation line begins immediately after the Attachment/Enclosure notation line, at the left margin.

The terms "cc:" or "bcc:" are used to indicate that the recipient(s) will receive a copy of only the signed document without any attachments. The terms "cc/att:" or "bcc/att:" should be used to indicate that the recipient(s) will receive a copy of the signed document plus all attachments.

Documents prepared for the Department Director's signature do not require any bcc: or bcc/att: notations, unless specifically requested by the Department Director.

Headers and Footers. Header margins are set at 1-inch on the top and both sides. Footer margins are set at .50-inch from the bottom margin. Text within the header or footer should be the same size and type style as that used in the body of the document. When correspondence contains a continuation page(s), include the recipient(s) name, page number, and date details on the first line in the Header section, and the Subject begins on the third line of type in the Header. Page numbers should be inserted into the Header section for letters and memoranda, and in the Footer section for abstracts, reports or informational documents attached to correspondence.

If edits are required, the reviewers and typist(s) should ensure that all information included in Headers or Footers is updated to reflect any changes or edits.

Reader and Signature Copy Initials. What was formerly referred to as the Initial (Reader) copy of correspondence, is now being referred to as the "Reader's" copy.

The initials of all reviewers should be positioned on the same line as the Signature initials, beginning at approximately the center (3-inch) mark on the document ruler and should include the initials of the Department Director, the Division's Assistant Director, all Reviewers, all Co-Authors, Authors and all typists (Appendices A and C).

The term "Signature" copy will remain the same and will include the initials of the Department Director, the Assistant Director, the author and the final typist (Appendices A and C). The Signature initials on documents begin at the left-hand margin. No blank lines are inserted after the signature and reviewer initials.

Signature Approval Line. Insert one or two blank lines between the last line of text and the words "APPROVED BY:" Leave three blank lines and insert the Approver's name on the fourth line of type and the Approver's Title on the fifth line of type. Leave two blank lines before entering the Signature and Reader's initial line. If space is an issue, leave one blank line.

Subject Lines. Subject lines are justified with no hyphenation. Approved acronyms may be included in subject lines (Page x). Authors and typists have the option of centering the

subject line on the continuation page(s) of IO Memos and in all pages of letters depending upon the length of the subject. (Appendices A and C).

Water Reclamation Plant Names. When preparing Group A: IO Memos, special abbreviations and acronyms may be used when referencing water reclamation plant (WRP) names, Department names, and several governing agencies (Page x). The "Common" name of the WRP is used to define the facility and then the abbreviated name is used as the acronym i.e., Hanover Pk. WRP (HWRP). The author and typist must maintain consistency in the form of the common name and abbreviations used.

When referring to District Departments, the department name may be used without first defining the full department name i.e., M&O Department, P&MM Department, etc. The word Department should always be included in the shortened Department name.

When using abbreviations in Group A: IO Memos, it should be noted that the terms District, MWRD, WRP and TARP do not have to be spelled out at first use. In all other documents and reports, these terms are to be defined at first use.

In all documents other than Group A: IO Memos, the full, "Proper" name of the facility or department should be used and defined at first use and the "Common" name of the WRP. Do not use WRP abbreviations (Pages xi – xiv).

WATER RECLAMATION PLANT NAMES

Proper Name	Common Name	Abbreviation
Calumet WRP (Spell Out WRP)	Calumet WRP	CWRP
John E. Egan WRP	Egan WRP	EWRP
Hanover Park WRP	Hanover Pk. WRP	HPWRP
James C. Kirie WRP	Kirie WRP	KWRP
Lemont WRP	Lemont WRP	LWRP
Stickney WRP	Stickney WRP	SWRP
Terrence J. O'Brien WRP	O'Brien WRP	OWRP

GROUP B: SPECIAL INTEROFFICE MEMOS

The second group of documents outlined in the Style Guide is Group B, which contains Special IO Memos prepared by the M&R Department for others. Templates and guidelines for Group B are listed in Appendix B. Sample documents are included at the end of Appendix B.

Types of Special Interoffice Memos

The Special IO Memos are those prepared for the ED's signature and addressed to the President and Members of the Board of Commissioners (Board) or prepared by various Task Forces to use in preparing Technical IO Memos. If an existing template does not fully satisfy the needs of the document being prepared, the author or typist should seek direction from the Department Director's office regarding modification of the template in question.

Special Interoffice Memos for Executive Director's Signature. IO Memos signed by the ED to the Board are distributed by the ED's office. These IO Memos contain responses provided by the M&R Department as a result of a request from the ED or the Board, and are prepared in ED IO Memo format (Template BIa).

Responses to Board Meeting Summary Requests. The M&R Department prepares responses to a Board Meeting Summary Inquiry (Template BIb), for the ED's office. The IO Memo is addressed to the Board and signed by the ED. The template varies slightly from Template BIa due to the required Board meeting information included in the subject line.

Technical Memos. These are prepared by task force members and distributed to District Departments. The M&R Department should follow the guidelines in Template BII when the Technical Memo (TM) is initiated by the department. The Department Director approves conversion of the Technical Memo to an M&R Department numbered Technical Memorandum Report (Appendix E) for posting on the District Website.

Guidelines for Special Interoffice Memos

Body Style and Page Layout. The standard format style for all IO Memos and Special IO Memos follow the formatting structure shown in Group A – IO Memos, with the exceptions bulleted below. For Standard Document Content information not indicated below, please refer to "Formatting for All Documents" Section (Pages 6 – 13) and Appendix B.

- Margins for ED IO Memos are set at 1.25 inches on the left and right margins and at 1-inch on the top and bottom, with a 1-inch header. If the IO Memo is lengthy, the margin can be adjusted to 1-inch on both sides.
- Block Style, no Indentation of the first line of type, Justified right margin, no Hyphenation, Times New Roman, 11- to 12-point type.

- The ED's IO Memo Logo differs from the M&R logo, due to the difference in the District's name placement, which is centered on two lines at the top of the page. The Department name should read General Administration.
- The signature initial line should include only the Department Director, the author, and the typist's initials.
- A courtesy copy is always sent to the Administrative Aide to the President, (Mr./Ms. first initial. last name). Any other copy designations should be indicated as a "bcc" or "bcc/att: unless otherwise instructed.
- Only documents prepared for the ED's signature should contain a bcc: or bcc/att: notation. When bcc's are included, the typist should prepare two signature copies of the document. (The first copy will contain only the cc list, while the second copy will contain the cc and bcc lists.) Both signature copies are sent to the ED's office for use in distributing to the bcc recipients.

Document Content

Abbreviations and Acronyms. Refer to the LIST OF ABBREVIATIONS AND ACRONYMS (Pages xi – xiv) for instructions regarding the abbreviations and acronyms acceptable for use in Group B: Special IO Memos.

Courtesy Copies. The terms "cc/att:" or "bcc/att:" should be used to indicate that the recipient(s) will receive a copy of the signed document plus all attachments. Refrain from using bcc designations in M&R Department documents, unless the document is being prepared for the ED's signature.

The Administrative Aide to the President, (Mr./Ms. first initial. last name) is always included in the cc: or cc/att: list. Any other copy designations should be indicated as a "bcc" or "bcc/att:" when necessary.

When bcc notations are included in an IO Memo or letter prepared for the ED's signature, the typist should prepare two signature copies of the document. (The first copy will contain only the cc list, while the second copy will contain both the cc and bcc lists.) Both signature copies are sent to the ED's office for use in distributing the document to all recipients.

Water Reclamation Plant Names. The "Proper" WRP names and "Common" acronyms are spelled out at first use in all correspondence and documents signed by the ED. The Department names in correspondence should be spelled out in full at first use and defined using the acronyms listed in the LIST OF ABBREVIATIONS AND ACRONYMS on Pages xi – xiv.

GROUP C: LETTERS

The third category of documents is Group C: Letters, which include letters signed by the M&R Department Director, Other Department Directors, or by the ED, plus Board Transmittal Letters and Ordinances. Templates and guidelines for Group C letters are shown in Appendix C and described below. Various sample documents are shown at the end of Appendix C.

Types of Letters

Letters follow the guidelines described here, using the appropriate letterhead (and envelopes). Always check to ensure that the most current version of letterhead is being used. All letters in this group will incorporate the abbreviations and/or acronyms shown on Pages xi – xiv. Samples of letters are located at the end of the Appendix C.

Letters Signed by the Department Director. (Templates CIa), using Department letterhead with the appropriate address or Division name. Letterhead with the Stickney WRP address shall be used for correspondence signed by the Department Director, Assistant Directors, and supervising staff (if approved by the respective Assistant Director). All letters should be delivered to the Department Director's office in ample time to allow for processing and final signature.

Letters Signed by Other Department Directors. (Template CIb), require the use the appropriate Department's letterhead. If printing a letter for a department other than the P&MM Department, it will be necessary to print the letter to the Department Director's printer, since most letterhead is unavailable for WRP distribution. The Reader copy is prepared on "draft" letterhead, using the appropriate department's letterhead when available, otherwise, use a draft copy of the M&R Department letterhead to aid in determining the layout and spacing. Letterhead for the P&MM Department is available to staff, therefore, letters are printed out by the typist and sent to the Department Director's office for approval and processing. Various letters to regulatory agencies will be converted to District reports once finalized and distributed, in which case, additional content will be added to the letter (Appendix EIV).

Letters Signed by the Executive Director. Letters are prepared following the guidelines in Template CII. The Reader copy may be prepared on draft M&R Department letterhead to determine spacing and layout. The letter is forwarded and printed to the Department Director's office printer \\XENPRINT021/ RND_DIR_SEC_EC for approval and processing. Please allow sufficient processing time for all letters, correspondence, etc.

Board Transmittal Letters and Ordinances. Standard Board Transmittal Letters (BTL) templates are located on the District Website. Ordinances are updated using current IWD master documents.

Guidelines for Letters

Letters for the Department Director or other Department Directors follow the guidelines in Appendix C, Templates CIa and CIb, respectively, while letters signed by the ED follow Template CII, using the appropriate letterhead and envelopes.

In cases where editing, formatting, or instructional procedures are disregarded, the Department Director's office will return the document to the respective Assistant Director's office for attention.

Body Style and Page Layout. Shown are guidelines specific to Group C documents. For general document content information not indicated below, please refer to the "Formatting for All Documents" Section (Pages 6 – 13) or Appendix C.

- Letters are prepared in Times New Roman Font, 12-point type, single spaced type. Modified Block Style; with the first line of type indented .50-inch from the left margin. Text is Justified with No Hyphenation. The date line, complimentary closing, signature line, title line, and department line begin at approximately the center (3-inch) point on the document ruler.
- Margins are 1-inch on all sides. If the document is small, the left and right margins can be adjusted to 1.25-inches on each side. Margins on all continuation pages should remain consistent with first page margins. Include 1-inch Headers and .50-inch Footers. Page numbers should be inserted at the top of the page inside the Header.
- If the document is lengthy, the typist can adjust the type size between 10.5 and 12 points. If the letter will not fit on one page when using a smaller type font, the typist should return the type font to 12 points and use additional continuation pages as necessary. If the margins are set to 1.25-inches, the type size may be between 11 to 12 points, only. Depending upon the type size used, typists should maintain the same sized blank line spacing between paragraphs throughout the document.
- The Date line should be positioned close to the same line as the Department Director's email address, then space down three blank lines and begin the inside address on the fourth line. This line spacing will eliminate large blank spaces at the top of the letter.
- Courtesy copy recipients should be indicated in the cc list. It is not necessary to include a bcc list in M&R Department letters or IO Memos.

Document Content

Abbreviations and Acronyms. When using an abbreviation or acronym spell out the full definition of the term and include the acronym in parenthesis when it is first used. The list of acceptable abbreviations/acronyms for use in Group C: Letters is shown on Pages xi – xiv.

Courtesy Copies. When a letter carries both an enclosure notation and a copy notation, it is assumed that the enclosures accompany only the original letter. If a copy of the enclosure is also to accompany some copies of the letter, it should be indicated in the cc list.

When bcc's are included in a letter signed by the ED, an additional copy of the signature letter should be included listing all of the cc and bcc recipients. (The second copy is also submitted to the ED's office for use in distributing to the bcc recipients.)

The bcc and/or bcc/att: notation should not be included in M&R Department letters unless specifically requested by the Department Director.

Document Distribution. The Department Director's staff will distribute electronic and/or hardcopy documents to staff located at the MOB or MOBA and electronic copies will be forwarded to the typist, the Division Assistant Director's administrative support staff, and any other recipients indicated on the cc list. The typist will distribute a hardcopy of the document (and attachments when noted), to staff located in other departments at remote locations.

The Reader copy and the typist's back-up documents will be returned to the respective Division's Assistant Director's office for routing to the typist.

Division and Section staff are encouraged to maintain file copies of all final distributed electronic documents forwarded from the Department Director's office.

Envelopes and Labels. Envelopes should be included if the letter will be mailed from the Department Director's office. If documents are being mailed to Springfield, Illinois, the typist should include the appropriate number of envelopes and/or District labels for each recipient in the cc list, who will have the document mailed to them.

Headers and Footers. Header margins are set at 1-inch on the top and both sides. Footer margins are set at .50-inch from the bottom margin. Text within the header or footer should be the same size and style as the type used in the body of the document. If correspondence contains a continuation page(s), include the recipient(s) name, page number, and date details on the first line in the Header section, and the Subject begins on the third line of type in the Header. Page numbers should be inserted into the Header section for letters and in the Footer section for abstracts, reports or informational documents attached to correspondence.

If edits are required, the reviewers and typist(s) should ensure that all information included in Headers or Footers is updated to reflect any changes.

Printing Letters to the Department Director's Office. Letters prepared by the M&R Department for the Executive Director or other Department Directors are formatted, proofread, approved, and signature ready for printing to the Department Director's office printer. Once the typist is satisfied with the draft letter, she should contact the Department Director's office so the printer can be set up with the appropriate Department's letterhead and sent to the printer at \\XENPRINT021\RND_DIR_SEC_EC

All letters submitted to the Department Director's office for printing should be in final format and signature ready, with the Reader's initial line, the track changes feature and the file location removed. (It may be necessary to save a second copy of the letter in order to remove ["accept"] the track changes in the final signature copy.) This would also provide the typist/author with a "clean" copy of the letter for future use if necessary.

Typists are urged print "draft" copies of the letter using a black and white photocopy of letterhead to be submitted as the Reader's copy, and to ensure proper placement of the dates, inside address, bottom margins, and continuation page(s), etc.

Reader and Signature Copy Initials. What was formerly referred to as the Initial (Reader) copy of correspondence, is now being referred to as the "Reader's" copy.

The initials of all reviewers should be positioned on the same line as the Signature initials, beginning at approximately the center (3-inch) mark on the document ruler and should include the initials of the Department Director, the Division's Assistant Director, all Reviewers, all Co-Authors, Authors and all typists (Appendices A and C).

The term "Signature" copy will remain the same and will include the initials of the Department Director, the Division's Assistant Director, the author and the final typist. The Signature initials on documents begin at the left-hand margin. No blank lines are inserted after the signature and reviewer initials. Correspondence signed by the ED requires fewer Signature and Reader initials (Appendices B and C).

Signature Blocks for Letters. These contain a complimentary closing, the signor's name, their title under their name, and the department name on the last line. Exception: When preparing correspondence for the ED's signature, do not include the ED's title or department name under his name. This request is from the ED's office and the M&R Department will remain diligent in adhering to this request. The Department Directors and the ED signature blocks should be prepared as follows:

Complimentary closing, Insert three blank lines Director's Name, (Academic Abbreviation) Director (no punctuation) Department Name (Spell out)	Complimentary closing, Insert three blank lines Executive Director's Name No Title or Department Name for ED letters

Subject Lines. Subject lines in letters and informational documents are indented .50-inch on the right and left margins. Text is justified with no hyphenation or acronyms. Additional lines of type begin under the first word in line one, after the word Subject. Short subject lines in letters and informational documents may be centered on all pages, only if the text is one line long and will fit within the .50-inch indented margins. If the subject is longer than one line, use the justified style for long subject lines. Leave two blank lines after the subject line, regardless of the style of subject line used. The word Subject on continuation pages should be prepared in the same case style as typed on the first page of the document (Appendix C).

Board Transmittal Letters and Ordinances

Templates for standard BTLs are located on the District Website and are prepared and formatted by the Budget and Administration Section (except for IWD BTLs), approved by the Department Director and the Director of P&MM, Law, Finance, or the ED as indicated in the "Recommended by:" line.

Ordinances are updated by the IWD Division, two versions of the Ordinance are submitted, one clean, unmarked copy and one copy presented in "strikethrough" format. Also, a Title Page and the Ordinance Board Transmittal Letter are included. Ordinances and User Charge BTLs are approved by the M&R Director, the ED or the Law depending upon who is referenced in the Recommended by line. Special Ordinance file numbers are obtained from the Finance Department before uploading BTLs in the Online Legistar System (OLS).

In cases where editing, formatting, or instructional procedures are disregarded, the Department Director's office will return the document to the respective Assistant Director's office for attention.

A new District policy requires BTLs to be uploaded immediately to OLS and all approvals by P&MM and/or others are obtained electronically. Therefore, all IO Memos involving contracts, RFPs, or JOCs requiring ED approval that would affect the processing and approval of a BTL, should be submitted in a timely manner so all backup documentation can be included with the BTL.

Guidelines for Board Letters and Ordinances

Body Style and Page Layout.

- Using the appropriate BTL template, Board letters are prepared in Arial, 11-point font, with No indentation, and No Justification. Training guidelines are included on the District Website for each BTL type.
- Margins are set at .75-inches on all sides with a .50-inch Header.
- Do not cut and paste items in to the title of the BTL, as this will result in problems uploading the BTL.
- Do not remove the words Title or Body shown above and below the subject title.
- Ordinances are updated by the IWD and submitted with a Ordinance BLT for the appropriate Committee. Upon review, the Department Director's office forwards the Ordinance to the Law and Finance Departments for approval before uploading into the OLS database.

  Ordinances consist of a title page, two copies of the Ordinance, and the BTL for uploading into the OLS database.

GROUP D: NON-ROUTINE DOCUMENTS

The fourth group of documents outlined is Group D: Non-Routine Documents. For your information and use, templates and guidelines are listed in Appendix D and identified below. Limited document samples are included at the end of Appendix D.

Types of Non-Routine Documents

Documents in Group D contain fillable documents, forms, and agreements, as well as specially prepared abstracts, manuscripts and contracts. If documents received from outside entities contain specific formatting instructions, please follow the instructions requested. If documents contain specific formatting instructions from other departments, staff should abide by the formatting instructions provided by that department.

Budget related correspondence and forms (contracts agreements, Conference/Seminar Travel forms, RFPs etc.) are forwarded directly to the M&R Department's Supervising Budget and Management Analyst, Michael Cohen, located in the Budget and Administrative (B&A) Section in the MOBA, for review prior to the Department Director's approval. A full list of items requiring prior approval are shown in Appendix F.

Pre-defined forms or templates are usually completed at the divisional level and submitted for the Department Director's approval. Shown below is a list of various documents requiring special forms or templates.

- Abstracts (follow M&R Department Research Report guidelines or organization procedures when requested). Requires prior Department Director approval.
- Agreements routed for signature approval (Special Routing Slip). Requires prior approval from the Department Director and ED.
- Conference/Seminar Travel Authorization Form. (District Website). New form as of September 29, 2015, requires Department Director approval only.
- Contracts prepared for advertisement and routed for signature approval, P&MM assists, requires a Board Letter or prior approval from ED and Department Director (Special template).
- Department and Division P-Cards. Approved P-Card form required prior to using P-Card for registrations, travel, office products, etc. B&A Section approves all budget coding (Appendix F).
- Expense Reports. (Special form), submitted after travel, conferences, or other events. Copy of approved P-Card Approval form attached to Expense Report. B&A Section approves all budget coding on both forms (Appendix F).

- Manuscripts for journal and/or report publication follow journal specific or M&R Department Research Report guidelines in Appendix E.
- Subscription/Membership Request Form. Special GA Department forms. Sent to B&A Section prior to the Department Director's review and signature.
- Computer/Telephone Request. Information Technology Department forms. Send to B&A Section prior to the Department Director's review and signature.
- Quality Assurance Project Plans (QAPPs) and Standard Operating Procedures (SOPs), (Laboratory predetermined formats).
- Special investigation reports (IWD fillable template).

Guidelines for Non-Routine Documents

Several documents in this group require specific instructions or forms from the requesting organizations, in which case the instructions contained in those documents should be followed. Occasionally, M&R Department documents will require a transmittal memo to the Department Director or the ED requesting approval of the document in question. Once the document is prepared it should be attached to an IO Approval Memo (Template AII) and a signature ready copy submitted to the Department Director's office.

Abstracts. Abstracts give a brief account of the most relevant contributions of a report or paper. Many colleagues will use the abstract as a first indication of whether they need to read the report or paper. Therefore, it is important to indicate the goal, the methods, the results, and conclusions in the abstract.

Abstracts follow the M&R Department Research Report guidelines, i.e. margins, page numbers, title headings, figures, and tables, etc., unless otherwise directed by the organization to use a different format. Abstracts may be submitted to a professional organization for publication in a journal, or presented at a conference or meeting. Abstracts require the approval of the Department Director and the Executive Director, (Template AII) for transmittal and approval of the abstract.

Manuscripts. Documents are prepared for journal publication (journal specific guidelines), if no guidelines are presented, follow the M&R Department Research Report guidelines. Manuscripts require an IO Approval Memo (Template AII). If a manuscript is approved for conversion to an M&R Department Manuscript Report, it will be attached to a report cover page and other content shown on Page 39 and assigned a report number following the guidelines for Manuscript Reports indicated in Appendix EII.

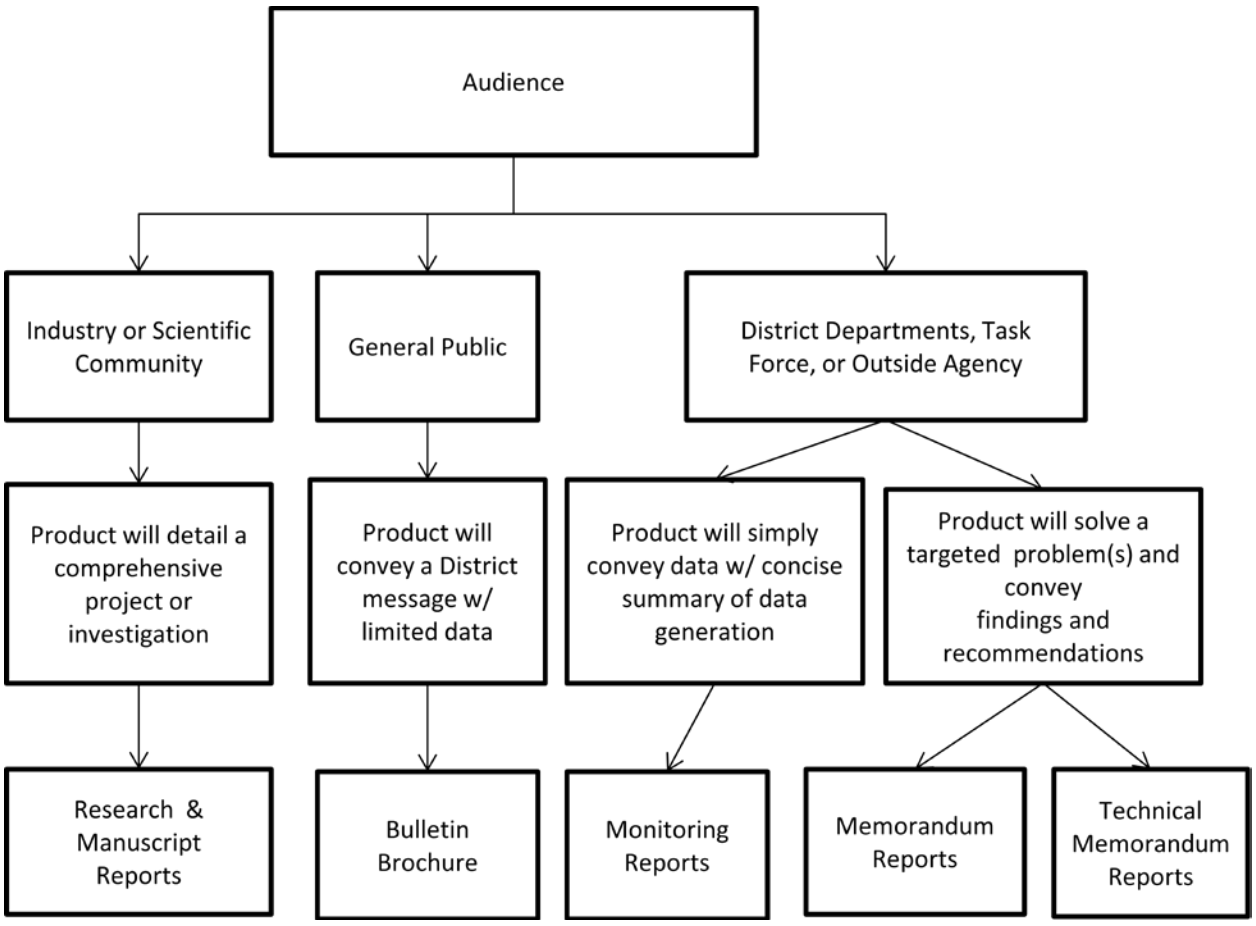
Other computer-generated forms requesting approvals, authorizations, etc., are completed at the Divisional level and forwarded to the B&A Section (Appendix F) or the Department Director for approval.

GROUP E: REPORTS

The final group of documents contained in the Style Guide is Group E: Reports. This group is divided into five audience identification sections: Research and Manuscript Reports; Bulletin Brochures; Monitoring Reports; Memorandum Reports; and Technical Memorandum Reports.

Reports prepared by the M&R Department are identified in the chart below. Guidelines presented may modify or replace current M&R report formatting instructions. Additionally, a new message driven Bulletin Brochure, which is designed to convey information for public consumption is included. The decision to use a particular report type will be based on the objective of the report and type of audience. Report templates, guidelines, and samples are shown in Appendix E. Each report section contains a Document Content list identifying subject content specific to that report. Page 39 and Appendix E include a chart indicating the front and back matter components required for each report type.

Audience Identification Chart



Types of Reports

Research Reports. Follow M&R Department Report format (Appendix EI), using updated Heading styles.

Manuscript Reports. These reports (Appendix EII) begin as a manuscript following the publisher's formatting guidelines, then later converted to a report.

Bulletin Brochures. Prepared for public distribution (special Logo template with modified report, table, and heading style content (Appendix EIII).

Monitoring Reports. Convey monitoring information with minimal verbiage and follows the M&R Department Research Report guidelines (Appendix EIV). Some reports begin as letters and transmit WRP permit required information to regulatory agencies (Template CI). The letter and attachments are then attached to the final report components (Page 39) and converted to a report for posting on the District Website.

Memorandum Reports. This report begins as an IO Memo conveying M&R Department findings and recommendations and distributed to others. Upon completion and distribution, the IO Memo and attachments are attached to the final report components (Page 39) and converted to a report (Appendix EV).

Technical Memorandum Reports. Technical Memos (TM) are prepared by various District Departments to convey task force findings to the District. The memo is attached to the final report components (Page 39) and converted to a TM Report (Appendix EVI), assigned a report number and posted on the District Website.

Guidelines for All Reports

The text (or body) of the report shall be divided into sections for logical presentation of the material so that the continuity facilitates understanding by the reader. Since reports prepared by the M&R Department vary, different report styles are necessary and are explained in this section. The Body Style and Page Layout, and Document Content Sections apply to many of the reports prepared by the M&R Department. Reports requiring a modified body style, page layout, and/or subject content will be further described in the section for that specific report.

All of the reports shown below are further outlined in Appendix E, with additional content information shown in Appendix F. Sample excerpts of the Research and the Monitoring Reports are included within their appendices. When a report differs from the Research or the Monitoring Report, a sample of the report will be included at the end of the appendix for that report. A discussion with the Department Director is required prior to initiating a report. Upon completion, reports are submitted to the Department Director for final signature approval.

Body Style and Page Layout. All reports listed herein follow M&R Department Research Report guidelines with the exception of Bulletin Brochure, Manuscript, Memorandum,

and Technical Memorandum Reports, which require a modified version of these guidelines and are described below in each report's section

- All reports and attachments to reports are formatted in one-column format with justified type. The first line of text is indented .50 inch. Reports are single-spaced with 12-point spacing between paragraphs.
- Font: Times New Roman. 12-point type.
- Margins: One-inch margins on all sides, 1-inch Header and .50-inch Footer. Page numbers are placed at center position in the Footer section.
- Hyphenation: The reports listed herein continue to be hyphenated. Set the hyphenation mode to Manual to allow for no more than two consecutive lines of hyphenated text. Attachments to Memorandum Reports are formatted as stand-alone documents following M&R Department Research Report guidelines. Technical Memorandums are prepared elsewhere and converted to a report by the M&R Department.
- Pagination: All pages of the report should be numbered consecutively. The page numbers are centered at the bottom of the page and placed in the footer at the .50-inch position. All pages in the front matter i.e., Table of Contents, List of Tables, etc., prior to the Introduction page should be numbered in lower case Roman numerals; i, ii, iii, iv, etc. The body of text should be numbered using Arabic numbers; 1, 2, etc., and the back matter i.e., Appendices, should be numbered referencing the particular appendix in which they appear. Pages in Appendix I should be numbered AI-1, AI-2, etc.; in Appendix II, AII-1, AII-2, etc.
- Paragraph Spacing: There should be a minimum of two lines of type at the end of a page and at the beginning of the continuation page. If a small paragraph cannot be divided, move the entire paragraph to the following page. Do not hyphenate a word at the end of a paragraph or the end of the page. The bottom margins should be a uniform as possible.
- Title Heading Styles: Guidelines for formatting M&R Department Headings appear in Appendix F and the "Formatting for All Documents" Section (Pages 6 – 13).

Document Content

The reports described in Group E vary; therefore, the following list indicates guidelines for textual content that may be included in a report. Each report type includes a Document Content list identifying subject content specific to that report. A chart indicating the front and back matter components for each report type is included on Page 39.

Abbreviations and Acronyms. In reports, the Proper name of WRPs, department names, and regulatory agencies are identified at first use, with the common or approved acronym

shown in parenthesis (Pages xi – xiv). Be consistent within the same material. Once a style of an abbreviation or acronym is used (District), refrain from using a different style elsewhere in the document (MWRD). Do not include abbreviations or acronyms in Titles, Tables, or Figures, etc.

Abbreviations for units of measurement, engineering, and scientific terms, and other terms common in the field shall conform to those published in either the Author's Guide Section of the Journal of the Water Pollution Control Federation or the current edition of Standard Methods for the Examination of Water and Wastewaters.

Organizations with long names are now commonly identified by their initials in all but the most formal writing (for example, IBM, AT&T, AFL-CIO, UNESCO, FBI, CBS). However, the names of agencies, organizations, etc., should be referred to in abbreviated form only after the initial use of the full name e.g., United States Environmental Protection Agency (USEPA) or National Pollution Discharge Elimination System (NPDES) Permits.

Enumerated or Bulleted Text. This text should be indented .50 inch from the left and right margins, with a 12-point blank line at the beginning of the list and after the last line of the list, unless followed by a Second-Order Heading. The typist may leave a 6- to 12-point blank line between each of the enumerated or bulleted items within the list, depending upon the length of the document. Be consistent throughout the report by maintaining the same blank spacing between items in all subsequent lists.

Equations and Mathematical Expressions. Equations are numbered. The numbers should be in parentheses flush to the right of the page, for mathematical expressions appearing in the text, insert the mathematical expression using the Microsoft Symbol feature using 12-point type.

References or Bibliography. References or Bibliographies begin a new page with a First-Order Heading. Begin each entry as indicated below. Single-space each entry. Leave one blank line between entries. List the entries alphabetically by author's last name.

The first author's name is typed last name first, then first name and middle initial. Subsequent authors are typed first name, middle initial, then last name, occasionally, only first and middle initials are used before the last name.

References. These entries are used in M&R Department Reports and are prepared with a first line indent of .50-inch. Any turnover lines begin at the left margin. List references alphabetically. The Title of the publication is typed in *Italics* (or may be underlined). The format for References in reports follows the M&R Department Research Report format.

Author(s), Article Title, "*Title of Journal,"* Series Number, Volume Number, Page Number, and year, 1951.

Bibliographies. These entries are mostly used in Manuscripts and the first line of type begins at the left hand margin with no indent. Any turnover lines are indented .50 inch from the left margin, so the first word in each entry will stand out. Punctuate with a period after each

entry. The book titles may be *Italicized* or Underlined. If the publisher of the manuscript does not request specific formatting, the author may follow the sample below, or that shown above depending upon his or her preference.

Author, Book Title, Publisher, Place of Publication, Year, Page Number (if a reference is made to a specific page). Follow publisher's formatting guidelines if available.

Reports Sent to the Print Shop. In order to achieve rapid publication, M&R Department reports are printed from an electronic PDF copy of the final report document. The authors and typists are fully responsible for the quality and accuracy of reports, and therefore, are required to carefully observe the following guidelines.

The final print-ready hardcopy version of the report is sent to the Department Director's office for review and signature approval (Appendix AII).

Once the report is approved by the Department Director, a report number will be assigned and the typist instructed to compile the report into one continuous PDF (or PD Fill) document for printing. The typist is encouraged to print out the PDF version to ensure the report is clean, legible, and free of blemishes. Once the appearance of the document is approved by the author or supervisor, the electronic PDF version is emailed to the Administrative Support Staff in the B&A Section, MOBA, to arrange for printing with the print shop. Documents with a less than desirable appearance will not be submitted for printing, and will be returned to the Assistant Director of the originating division.

Research, Manuscript, and Monitoring Reports

The Research and the Monitoring Reports require specific content information applicable to the report type. Follow the guidelines shown above, and in Appendix EI and EIV, respectively, when preparing these reports.

Monitoring Reports provide specific data with limited verbiage and may not include all of the subject content listed below (Appendix EIV).

Manuscript Reports (Appendix EII), follow content and formatting guidelines provided by the publisher, utilizing page line numbers and modified Headings (explained further under in the Manuscript Section below).

Document Content for the remaining reports are described in their respective sections. Manuscript, Memorandum, Technical Memorandum, and some Monitoring Reports begin as other documents and later converted to reports, requiring additional report components added to the document to enable posting on the District Website. This information is shown in the chart on Page 39 and at the beginning of Appendix E.

Document Content

Report Cover Page Template. Preparation of the report blue cover page and the inside title page are prepared by the initiating Section's typist. A report cover page layout guideline is shown in (Appendix E0), which may be edited to reflect the type of report being prepared. The blue Cover Page identifies the report number, the name, and the month and year of publication. The Title Page lists the report title and all authors and contributors, who are listed down the center of the page (list the authors with major responsibility for preparation of document first). Place the Department Director's name in the lower left corner, and the department "Monitoring and Research Department" directly below the Department Director's name, the month and year of the report is located in the lower right corner. Report numbers are obtained and inserted on the cover page after the final approval of the report is received from the Department Director.

Templates, guidelines, and sample Report Cover and Title pages are shown in the respective appendix. Manuscripts, Memorandum, and Technical Memorandum Reports include a three-page Report Cover only, which consists of the Report Cover and Title Pages, and an Acknowledgement and Disclaimer Page (Appendices EII, EV, and EVI).

Table of Contents. This should include subject title headings and major subject subheadings in the order they appear in the report, along with the page numbers on which they appear. As edits are completed, the Table of Contents must be updated to reflect any revisions or edits. Placement of the titles is determined by the heading order of the title as shown in the report. First-Order Headings begin at the left margin in all capital letters (not bold). All subsequent Second- Third- or Fourth-Order Headings are indented an additional .50-inch for each heading style.

List of Tables. The list should be in the sequence in which they appear in the report, showing appropriate page numbers. As edits are completed, the List of Tables should be reviewed to ensure that the page numbers of the tables are accurate.

List of Figures. These are prepared the same as the List of Tables. If the List of Figures and the List of Tables contain relatively few items, they may be prepared in the usual manner and placed on a single page. Insert four to five blank lines between the end of the List of Tables and the Title of the List of Figures when they are included on the same page.

List of Acronyms. Acronyms used throughout a report should be contained in a list indicating the abbreviation or acronym and the definition. The LIST OF ACRONYMS should be included in the front matter of reports, immediately following the LIST OF FIGURES.

Acknowledgement and Disclaimer. In the Acknowledgement, the author(s) expresses his gratitude to various individuals for any aid or assistance they contributed to the compilation or writing of the particular literary work. The Acknowledgement and Disclaimer appear in First-Order Heading style on the same page, unless the Acknowledgment is lengthy. Leave four to five blank lines between the last line of the Acknowledgement and the beginning of the Disclaimer title.

A Disclaimer denies any interest in or responsibility for the subject matter. The Disclaimer title is prepared as a First-Order Heading.

Summary or Abstract. This information, if included in a report, is located in the front matter of the report following the Acknowledgement and Disclaimer, and should be numbered in lower case Roman Numerals.

The Summary briefly describes the purpose and conduct of the operations involved and report conclusions in clear, simple, and direct statements.

Abstracts give a brief account of the most relevant contributions of a report or paper. There will be times when a departmental report will be submitted to a professional organization for publication in a journal or presented at a conference, or meeting, etc. Therefore, it is important to indicate the goal, methods, results, and conclusions in the abstract.

Introduction. An Introduction explains how the report is arranged and the purpose, etc. It provides information for understanding the context of the report and presents the problem or research inquiry, purpose, and focus of the current report and summary or overview of focused goals and rationale. The Introduction begins the body of the report, page numbers should begin at number 1, using Arabic numbers.

Materials and Methods. Describes conduct of the work, experimental design, sampling protocol and analytes, analytical methodology and computational methods, and how data was analyzed in order to address the objectives of the report. There will be no need to address analytical methods if analyses were completed by the Analytical Laboratories Division. Established procedures can be referenced and left to minimal discussion, or put into an appendix. Unless computer generated, sampling protocol, if described in tables, should be formatted in Microsoft Word table format when possible.

Results and Discussion. Illustrates results in a logical manner using figures and tables for illustration. Only use final and processed data in tables do not duplicate data presented in tables or figures used previously in the text. All tables should be formatted in Microsoft Word table format.

Conclusions or Recommendations. These briefly synthesize important findings, take home messages, and highlight recommendations or solutions for the problem identified in the introduction and perhaps future investigation that may provide more enlightenment.

References or Bibliography. The references or bibliography should be typed single-spaced. Each entry should be separated by one blank line. Titles of complete major works (books or journals) are underscored. Titles of articles, papers, reports, etc., should be italicized, though some authors prefer to enclose them in quotation marks (Pages 30 and 31).

Appendices. Information contained in the appendices may include figures and tables not discussed within the text, raw data, graphs, maps and photographs, or standardized methods or protocols used in the study, either experimental, monitoring, or mathematical. Appendices begin

the back matter of the report and should be included in the Table of Contents and numbered in consecutive order e.g., Appendix I, II, or III, etc., using Roman Numerals or letters.

Whenever an appendix is included, it should be separated from the body of the report by a plain title page designating the appendix number and the title of the appendix.

If Tables or Figures are included in the appendices, they should be included in the List of Tables, and/or List of Figures. Tables and Figures are numbered to correspond with the appropriate appendix in which they appear e.g., Table AI-1, Figure AII-2. For tables or figures included in appendices, the titles should also include the appendix number TABLE AI-1: and the title on the same line.

Manuscript Reports

Manuscript Reports are prepared following specific manuscript formatting guidelines provided by the publisher. Guidelines, a sample manuscript, and an IO Approval Memo are located in Appendix EII. If the manuscript is converted to a Manuscript Report, prepare the three-page Report Cover Pages using the Title page of the manuscript as the Report Title page, then include an Acknowledgement/Disclaimer page (Page 39).

Guidelines for Manuscript Reports

Manuscripts are prepared following the publisher's guidelines. If the publisher does not provide instruction for preparing the manuscript, follow the M&R Department Research Report guidelines incorporating the modifications listed below and include line numbers on each page.

Body Style and Page Layout

- Times New Roman, 12-point type, unless (otherwise requested).
- Indent the first line of text .50 inch. Do Not Justify margins, but hyphenation may be applied if requested.
- Insert line numbers on each page.
- Heading Styles include Modified First- and Second-Order Headings.

Document Content

Modified Title Page. Prepared as a separate page with numbered lines. A Table of Contents is not required unless requested by the publisher.

Modified First-Order Title Headings. The headings are prepared in bold type, all capital letters, centered at the top of the page and begin a new page when identifying the Title page, Abstract, Introduction, List of Figures/Tables, and References. Other First-Order Headings

located with the body of the manuscript do not have to begin a new page. They may be inserted at any location on the page, following any text above it. Leave two blank lines before the First-Order Heading and one blank line after the Heading before beginning the text.

Modified Second-Order Title Headings. When included, they are formatted the same as the M&R Department Third-Order Heading style.

Department Director's Approval. Upon completion of the manuscript (Appendix EII), an IO Approval Memo (Template AII) is prepared and submitted with the completed Manuscript for the Department Director's signature approval and decision to convert the manuscript to a report. A copy of the approved IO Memo and manuscript is returned to the authors, the Assistant Director' office, and the typist.

Report Cover Page Template. If the manuscript is converted to a report, it will be attached to a three-page Report Cover Page template (Appendix EII), consisting of the blue Cover Page, a Title Page and the Foreword and/or Disclaimer Page (Page 39). A Table of Contents is not required for these reports. Manuscript Reports are not printed or posted on the District Website. The Department Director's office will finalize the conversion of the manuscript into a Manuscript Report and distribute copies as necessary.

Bulletin Brochure Reports

Bulletin Brochure Reports follow the M&R Department Research Report guidelines, with the exceptions indicated below. Guidelines and a sample of a Bulletin Brochure Report are located in Appendix EIII. The Public Affairs Office may assist or prepare Bulletin Brochure Reports.

Body Style and Page Layout. A special template is used for Bulletin Brochure Reports that are prepared for distribution to the general public. These reports are shorter in content than other reports (1-3 pages).

- Times New Roman font, 11- to 12-point type.
- Block style with No First-Line Indent, type is Justified with No Hyphenation.
- Margins for text are one inch on each side, top, and bottom and a .50-inch footer.
- A Page Border is inserted on all sides of the document to enclose the logo, text, tables, etc., in a blue font color that matches the logo.

Document Content

Logo. The reports include a District Logo and a page border around the logo and the body of text. Center the page number in the Footer Section if the report is more than one page

long. If desired, a date can also be placed in the footer, in which case the date and the page number would be positioned at each margin.

Modified Title Headings Styles. The Bulletin Brochure Report should begin with the District Logo, immediately followed by a First-Order Heading in bold type and centered across the page. The type size of the heading may be larger than 12-point type for readability and eye appeal, insert one or two blank lines after the heading. Follow basic guidelines for Second- or Third-Order Headings used in the body of the report, with modified spacing. When using Headings, insert only one blank line before and after Second- and/or Third-Order Headings in order to conserve space on the page.

Tables and Figures. Tables and Figures are embedded and centered within the text margins. Table titles and column headings are typed in bold, italicized, 12-point type, the word Table is typed in upper and lower case letters with a colon following the table number. The table title is typed in sentence case (only the first word is capitalized) with no periods and no blank spaces between the table heading and the start of the table. Black borders are placed around the entire table or figure, inside of the blue Page border. The table title and any superscript information is inserted on the outside of the border, as shown below. Leave one blank line before and after each table or figure. If a footnote is included, leave one blank line after the footnote(s).

Table 1: Trace metal content in the District's biosolids and part 503 EQ standards

[1]Mean of 2005 data. (Insert period after footnotes.)

Report Cover Pages and Printing. Bulletin Brochure Reports do not contain report numbers or Report Cover Pages. The EM&RD or the Public Affairs Office may have the document printed, depending upon the distribution event.

Memorandum Reports

Memorandum Reports (Appendix EV) are created after the M&R Department responds to a request for information or findings, which are the result of a project or a study. As a request is received, and prior to preparing a response, the Division's Assistant Director will initiate a discussion with the Department Director regarding the intent to respond and the type of response document required (IO Memo, Memorandum Report, or Research Report).

If it is determined that the response should be in the form of an IO Memo (Template AI), the memo is prepared, submitted for signature approval, and distributed via current routing procedures. If the IO Memo is converted to a report, the Department Director's office will prepare the additional components required for M&R Department Reports (Page 39) and obtain a report number for posting on the District Website. Note: the IO Memo may require additional editing of any special abbreviations and acronyms used in the preparation of the original memo, before it is posted on the website.

Guidelines for Memorandum Reports

Once the IO Memos is finalized, the Department Director will determine if it will be converted to a Memorandum Report. Guidelines and a sample of a Memorandum Report (not posted on the District Website) are shown in Appendix EV.

Body Style and Page Layout. The Department Director's office will compile the IO Memo into the Memorandum Report.

- Follow the format guidelines for Basic IO Memos and Headings indicated in (Template AI) and (Appendix F), respectively. Attachments to the IO Memo should be prepared as stand-alone documents, following the M&R Department Research Report guidelines. A Table of Contents and a List of Acronyms, Tables, and Figures is not required for Memorandum Reports.
- The IO Memo signature page and attachments become the body of the Memorandum Report and once signed, the Department Director's office will attach the IO Memo to a three-page Report Cover Page template for conversion to a Memorandum Report.

Document Content

Abbreviations and Acronyms. If the initial IO Memo was prepared following Template AI and incorporated the Special Abbreviations/Acronyms shown on Page x it will require editing to reflect the abbreviations or acronyms shown on Pages xi – xiv, before it is converted into a report for posting on the District Website.

Courtesy Copies. Copies of the completed report are distributed to recipients shown on the IO Memo. As with all Group A: IO Memos, no bcc's should be included in the document.

Report Cover Page Template. The Report Cover Page Template consists of the M&R blue Report Cover Page, the Title Page, and a combined Foreword and/or Disclaimer Page (Appendix EV).

Once the report is compiled, the Department Director's office will request an edited copy of the IO Memo (with the appropriate abbreviations or acronyms inserted) and a report number. Memorandum Reports are printed by the print shop and uploaded on the District Website. Copies of the printed report are distributed to the recipients in the IO Memo cc list, plus the Department Director, Assistant Director, Section Head, author, and typist.

Technical Memorandum Reports

Technical Memorandum (TM) Reports (Appendix EVI) are created as a result of Task Force findings. Currently, the Phosphorus Task Force initiates TMs and distributes them to

Department Directors. Upon approval from the Department Director, the TM is converted to a TM Report. If the TM is converted to a report, the Department Director's office will prepare the additional components required for M&R Department Reports (Page 39) and obtain a report number for posting on the District Website.

Guidelines for Technical Memorandum Reports

Preparation of TM Reports follows the guidelines below and in Appendix EVI when the report is initiated by the M&R Department. Once approved, TM Reports are posted on the District Website; they are not being printed at this time. Templates, guidelines and a sample TM Report are shown in Appendix EVI.

Body Style and Page Layout. In cases where the M&R Department initiates IO TMs, authors should follow the guidelines for preparation of the TM. The Department Director will determine if a TM will be converted to a TM Report.

- Use the Special TM IO Memo (Template BII) in Appendix B, following the guidelines for formatting text. The TM and any attachments become the body of the TM Report.
- As the TM is the body of the report, it may incorporate the use of a modified First-Order Heading style, where First-Order Headings are not required to begin a new page. First-Order Headings are used within the text, with two blank lines before the heading and one blank line after the heading.
- Technical Memoranda do not require a continuation page header or a signature, but should include a Reader's copy page when sent to the Department Director's office for approval (if prepared by M&R Department staff).
- Page numbers should be included in the .50-inch Footer area at the bottom of the page.

Document Content

Report Cover Page Template. The template consists of the M&R blue Report Cover Page, the Title Page, and a Disclaimer Page. A Table of Contents and the Lists of Tables, Figures, or Acronyms is not required for TM Reports. The Report Cover Page template is located in Appendix EVI, components for TM Reports is shown on the following page. The Department Director's office will compile the documents to create the TM Report for posting on the District Website.

COMPONENTS FOR MONITORING AND RESEARCH DEPARTMENT REPORTS

Though textual matter will vary within each report, certain common components are necessary in order to complete a report, or document, for posting on the District Website, i.e. Report Cover page, Title page, Table of Contents, etc. (Front Matter of Report). The report type will determine the subject content of the report (Body), and the Appendices (Back Matter of Report) may include text, tables, figures, charts, etc. Listed below are the components necessary to complete a report, or convert a manuscript, letter, memorandum, or technical memorandum into a report.

	Report Type					
Required Components	**EI[1]**	**EII[2]**	**EIII[3]**	**EIV[4]**	**EV[5]**	**EVI[6]**
Blue Report Cover Page	X	X		X*	X	X
Report Title Page	X			X*	X	X
Table of Contents	X			X*		
List of Tables	X			X*		
List of Figures	X			X*		
List of Acronyms	X			X		
Acknowledgement	X	X		X	X	X
Disclaimer	X	X		X	X	X
Summary	X			X		
Appendices, if required	X			X*		
Other Components						
Modified Title Page		X				
Foreword and/or Disclaimer		X			X	X
Modified Title Headings		X	X			X
Special Logo			X			
Special Formatting		X	X	X*		X

[1] EI – Research Reports.
[2] EII – Manuscript Reports.
[3] EIII – Bulletin Brochures.
[4] EIV – Monitoring Reports (*Regulatory Agency Letters Converted to Reports).
[5] EV – Memorandum Reports.
[6] EVI – Technical Memorandum Reports.

REFERENCES

Carter, E. M., E. M. Jackson, C. Lue-Hing, "Standard Report Format," Metropolitan Water Reclamation District of Greater Chicago, Revised March 1994.

Kozak, Joseph, Redesign Task Force Team, "Group -1 Document Generation, Document Identification," Metropolitan Water Reclamation District of Greater Chicago, 2014.

Sabin, William A., The Gregg Reference Manual, Tenth Edition, McGraw Hill/Irwin, 2005.

APPENDIX A

INTEROFFICE MEMOS FOR THE DEPARTMENT DIRECTOR'S SIGNATURE

A0_INTEROFFICE MEMO LOGO _TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:**

TO: Recipient Name
Recipient Title

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT:

TCG:DIV HEAD:XXX:xx

A0_ IO MEMO LOGO_ GUIDELINES

INTEROFFICE MEMORANDUM

X

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

X

DEPARTMENT: Monitoring and Research **DATE: Xxxx xx, xxxx**

X (Spacing Change from Draft Style Guide) One or two blank lines as needed.

X

TO: Recipient Name
Recipient Title

X

FROM: Thomas C. Granato
Director of Monitoring and Research

X

SUBJECT:

X

X One or two blank spaces depending upon length of document

Memo Logo Guidelines: - The IO Memo Logo should remain at 12-point type, regardless of the font size used in the remainder of the memo.

INTEROFFICE MEMORANDUM – 12-Point Type, Times New Roman, Centered Text and Bold. (Interoffice is spelled as one word)

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO – One line of type, Centered, Times New Roman, 12-Point Type, and Bold, no Italics.

DEPARTMENT: and DATE: - 12-Point Type, Times New Roman, Upper and Lower Case Text, Not Bold. First letter of the word Department begins at left margin, and the last number of date ends at right margin.

Recipient/Subject Information:

TO:) 12--Point Type, Flush left, colon after each word.
FROM:) To determine placement of the Tab Set - There should be
SUBJECT:) Beginning of Subject text should be aligned with the names in To and
)From section. No ending punctuation in Subject.
)The subject text is indented .50-inch from the right-hand margin.

Please begin all memos in 12-point font first, and then adjust the font size, if needed.

If additional information is required regarding second page Headers, cc list, etc. please refer to the "AI_IO Memo Guidelines.

AI_ IO MEMO TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:**

TO:

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT:

OPENING PARAGRAPH

BODY

CLOSING PARAGRAPH

TCG:XXX:xx TCG: DIV HEAD:XXX:XX:XXX:xx
Attachment
cc: or
cc/att:
ASN:

(Insert a Section Break-Next Page and Header information as required)

Xxxx Xxxxxxx 2 Xxxxx

Subject: Justified for long subject lines
or
Subject: Centered for short one-line text

Continuation Text

INTEROFFICE MEMORANDUM

X

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

X

DEPARTMENT: Monitoring and Research **DATE:**

X

TO: Recipient Name
Recipient Title

X

FROM: Thomas C. Granato
Director of Monitoring and Research

X

SUBJECT: The Subject Should Identify the Name of the Document Being Responded to and Include any Identifying Numbers. Text is Indented .50-inch from Right Margin. Justified, No Hyphenation. Acronyms allowed in Group A: IO Memos. No ending punctuation

X One or two blank lines depending upon length of document

X

BODY: Block Style, 1-inch All margins, 1-Inch Header .50-Inch Footer, Times New Roman, 10.5-12-point font (depending upon length of document). Single-spaced, Justified, NO HYPHENATION (To avoid rivers in the text, insert 1 space between sentences in No Hyphenation mode so the sentences space properly). Documents are not required to fit on one page.

1. Enumerated or Bulleted Lists: indented .50-inch from the left and right margins with the number or bullet beginning at the left hand indented margin. For Text: Set tab at 0.25-inch from the number or bullet and set the "2nd line indent" for carryover lines. Justified text with 6- to 12-point line spacing between numbered or bulleted items depending upon length of document. Remain consistent in line spacing throughout IO Memo.

MULTIPLE PAGE MEMOS: If document requires two pages, return type font to 12 points. If more than one recipient is indicated in the TO: line, address the second page Header as **XXX XXX et al. Second Page Subject Line** is **Indented** .50-inch on both margins and **Centered** if it fits on one line, within the .50-inch indented margins. If longer than one line, it is Justified within the indented margins.

CLOSING PARAGRAPH In addition to text, please include the name, job title, telephone extension and email address (if necessary) of the contact person capable of answering questions.

X One or two blank lines depending upon length of document

TCG:DIV HEAD:ORIGINATOR:typist TCG: DIV HEAD:XXX:XXX:XXX:typist

Attachment (or Enclosure) Depending on the term used in the body of the document

cc: XXXXX - (will receive a copy of only the document)

cc/att: X. XXX – (will receive a copy of the document and the attachments)

ASN: Include M&R Department Assignment Number on Reader Copy only

AI_INTEROFFICE MEMO_GUIDELINES: Continuation Page(s)

Recipient Name et al. (if needed) **2** **Date**

X

Subject: Justify Text in Long Subject Lines Requiring More Than One Line of Type

or

Subject: Center Short Subject Lines Requiring Only One Line of Type

X

X Two blank lines after Subject, before beginning text

THE GUIDELINES CONTAINED HEREIN WILL SERVE AS THE BASE FOR ALL M&R DEPARTMENT IO MEMOS UNLESS OTHERWISE INDICATED.

Courtesy Copies (cc). When a letter or IO memo carries both an attachment notation and a courtesy copy list, it is assumed that the attachments accompany only the original letter. If a copy of the attachment is also to accompany some copies of the letter or IO memo, it should be indicated in the cc list e.g., cc/att:

Only documents prepared for the ED's signature should contain a bcc: or bcc/att: notation. Documents prepared for the Department Director's signature do not require any bcc: or bcc/att: notations, especially if the bcc recipient is a member of the M&R Department.

OTHER ITEMS REGARDING MEMOS

1. In order to conserve space, the Reader Copy Initials are included on the same line as Signature initials, please remove the Reader Initials, ASN, and file location notation when submitting electronic signature copies.
2. If hardcopy documents, if the attachments are large, provide attachments (hardcopy) for each recipient on the cc/att: list when the recipient is located at the MOB or at remote locations. Provide a set of attachments for the Reader and the Signature copies of documents.
3. Electronic documents submitted to the M&R Director's office for completion should be signature and printer ready. No Reader Initials, Assignment Numbers, or File Locations should remain on the Signature copy.
4. The Gregg Reference Manual and the revised M&R Document and Report Format Style Guide will serve as the M&R Department reference sources.

A1

AII_IO MEMO WITH APPROVAL SIGNATURE: TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:**

TO:

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT:

BODY

CLOSING PARAGRAPH

APPROVED BY:

David St. Pierre
Executive Director

TCG:DIV HEAD:ORIGINATOR:typist TCG: DIV HEAD:ALL REVIEWERS:typist
Attachment
cc:
cc/att:

Insert Section Break for Continuation Pages.

Name 2 Date:

Subject:

or

Subject: For one sentence subject lines

X

X

AII_IO MEMO WITH APPROVAL SIGNATURE_GUIDELINES

INTEROFFICE MEMORANDUM

X

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

X

DEPARTMENT: Monitoring and Research **DATE: XXXXX**

X

TO: Recipient Name
Recipient Title

FROM: Thomas C. Granato
Director of Monitoring and Research

X

SUBJECT: Subject of Document Should Identify the Document Being Responded to and Include any Identifying Numbers. Indented .50-inch from Right Margin, Justified, No Hyphenation, Certain Acronyms allowed in Group A IO Memos, No Ending Punctuation

X One or two blank lines depending upon length of document

X

BODY **Block Style, 1-inch Margins all around, 1-Inch Header .50-Inch Footer, Times New Roman, 10.5-12-point font. Single-spaced, Justified, NO HYPHENATION** To avoid rivers in the text, insert only 1 space between sentences in No Hyphenation mode so lines adjust properly.

1. Enumerated or Bulleted Lists indented .50-inch from left and right margins Justified. Set a .25-inch tab between number and text. 6-12-point spacing between Item Numbers or Bullets depending upon length of document.

MULTIPLE PAGE MEMOS: If document requires two pages, return font 12 points. if more than one recipient is receiving memo, address the second page Header as **Heng Zhang et al. Second Page Subject Line** is **Indented** .50-inch on left and right margins and Justified if more than one line, or it can be **Centered** if it fits on one line within the .50-inch indented margins.

CLOSING PARAGRAPH Should also include name, title, telephone extension and email address (if necessary) of the contact person capable of answering questions.

X

X One or two blank lines depending upon length of document

APPROVED BY:

Approver's Name
Title

TCG:DIV. HEAD:ORIGINATOR:typist TCG: DIV HEAD:XXX:Originator:typist

(Continued on Next Page)

AII_IO MEMO WITH APPROVAL SIGNATURE_GUIDELINES:
Continuation Page(s)

Recipient Name (et al. if needed) **2** **Date**
X

Subject: Use for Long Subject Lines Requiring More Than One Line of Type

or

Subject: Use for Short Subject Lines Requiring Only One Line of Type

X
X

Attachment (or Enclosure) Depending on the term used in the body of the memo
cc: X.XXX – Include first initial - (will receive a copy of only the document)
cc/att: X. XXX (will receive a copy of the document and the attachments/enclosures)
X. XXX
ASN: Include M&R Department Assignment Number on Reader Copy only

THIS DOCUMENT WILL SERVE AS THE BASIC GUIDELINES FOR ALL AII IO MEMOS WITH APPROVAL SIGNATURE UNLESS OTHERWISE NOTED.

If an existing template does not fully satisfy the needs of the document being prepared, the typist should seek direction from the Department Director's office regarding modification of the template in question. If modification of a template is authorized, the modification is for the specific document in question. It should not be assumed that future documents can be modified.

OTHER ITEMS REGARDING MEMOS

1. In order to conserve space, the Initial line will be on the same line as signature initials. (Tab past center position to begin Initial type.)
2. No bcc's in Group A: IO Memos
3. If hardcopy documents, if the attachments are large, provide attachments (hardcopy) for each recipient on the cc/att: list when the recipient is located at the MOB or at remote locations. Provide a set of attachments for the Reader and the Signature copies of documents.
4. Electronic documents submitted to the M&R Director's office for completion should be signature and printer ready. No Reader Initials, Assignment Numbers, or File Locations should remain on the Signature copy.
5. The Gregg Reference Manual and the revised M&R Document and Report Format Style Guide will serve as the M&R Department reference source.

AII

AIII_ED REQUEST TO FILL MEMO W/APPROVAL LINE_TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE: XXXXX**

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request to Fill the Vacant [Insert Position Title] Position in the M&R Department, Section XXX (PCN XXXXXXXX)

OPENING PARAGRAPH

SECOND PARAGRAPH (Position Description)

CLOSING PARAGRAPH: The M&R Department requests your approval to fill the vacant [insert title and acronym] position in order to maintain consistent support of mission-critical work in Section XXX.

APPROVED BY:

David St. Pierre
Executive Director

TCG:DIV HEAD:ORIGINATOR:typist TCG: DIV HEAD:XXX:Originator:typist

cc: D. Korcal
Div. Head
M. Cohen
Section Head

AIII_ED REQUEST TO FILL MEMO W/APPROVAL LINE_GUIDELINES

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE: XXXXX**

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request to Fill the Vacant [Insert Position Title] Position in the M&R Department, Section XXX (PCN XXXXXXXX) Indented .50-inch from Right Margin, Justified, No Hyphenation, Certain Acronyms Approved for Group A: IO Memos (Page x) No Ending Punctuation

X (1 or 2 blank lines depending on length of memo)
X

OPENING PARAGRAPH: Describe the vacant position's full title (with acronym if any), the department acronym, division name, section name and number (or laboratory name and number), and the PCN number. Indicate the reason for the vacancy.

SECOND PARAGRAPH: Indicate whether the position is part of the M&R Department Redesign. Include an explanation of the responsibilities and importance of this position to the department, the division, and the District.

CLOSING PARAGRAPH: The M&R Department requests your approval to fill the vacant (insert title or acronym) position in order to maintain consistent support of mission-critical work in Section XXX.

X (1 or 2 blank lines depending on length of memo)
X
APPROVED BY:
X
X
X
David St. Pierre
Executive Director
X (1 or 2 blank lines depending on length of memo)
X
TCG:DIV HEAD:ORIGINATOR:typist TCG: DIV HEAD:XXX:Originator:typist
cc: D. Korcal
Div. Head
M. Cohen
Section Head

GUIDELINES FOR AIII IO MEMORANDUMS (Continued)

Subject Line: Memo Specific

Block Style, 1-inch All margins, 1-Inch Header .50-Inch Footer, Times New Roman, 10.5-12-point font (depending upon length of document). Single-spaced, Justified, NO HYPHENATION To avoid rivers in the text, insert 1 space between sentences in No Hyphenation mode so the sentences space properly. Documents are not required to fit on one page. Note: Please remove Reader Copy Initials when submitting Signature copies.

MULTIPLE PAGE MEMOS: If document requires two pages, readjust type font to12 points. If more than one recipient is indicated in the TO: line, address the second page Header as **XXX XXX et al. Second Page Subject Line** can be **Indented** .50-inch on left and right margins and Justified (if longer than one line), or **Centered** if it fits on one line within the .50-inch indented margins.

CLOSING PARAGRAPH Memo Specific

X One or two blank lines depending upon length of document
APPROVED BY:
Blank lines, then Approver's Name, then Approver's Title on separate line.
TCG:ORIGINATOR:typist TCG: DIV HEAD:XXX:XXX:XXX:typist
cc: D. Korcal
Div Head
M. Cohen
Section Head
No bcc's required in Group A: IO Memos

THE GUIDELINES CONTAINED HEREIN WILL SERVE AS THE BASE FOR ALL M&R DEPARTMENT IO MEMOS UNLESS OTHERWISE INDICATED.

If an existing template does not fully satisfy the needs of the document being prepared, the typist should seek direction from the Department Director's office regarding modification of the template in question. If modification of a template is authorized, the modification is for the specific document in question. It should not be assumed that future documents can be modified.

OTHER ITEMS REGARDING MEMOS

1. In order to conserve space, the Initial line will be on the same line as signature initials. (Tab past center position to begin Initial line.)
2. The Gregg Reference Manual and the revised M&R Document and Report Format Style Guide will serve as the M&R Department reference source.

AIV_ED RECOMMENDATION TO FILL WITH APPROVAL LINE_TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:**

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Recommendation to Fill the Vacant [Insert Position Title] Position in the M&R Department, Section XXX (PCN XXXXXXXX)

OPENING PARAGRAPH

SECOND PARAGRAPH [Candidate recommendation/qualifications]

AFFIRMATIVE ACTION PARAGRAPH

The M&R Department respectfully requests your approval to appoint [insert candidate first and last name] to fill the [insert position title or acronym] vacancy in Section XXX.

APPROVED BY:

David St. Pierre
Executive Director

TCG:DIV HEAD:XXX:xx
Attachment
cc/att: D. Korcal
Div. Head
M. Cohen
Section Head

TCG: DIV HEAD:XXX:Originator:typist

AIV_ED RECOMMENDATION TO FILL WITH APPROVAL LINE_ GUIDELINES

INTEROFFICE MEMORANDUM
x
METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE: XXXXX**

X

TO: David St. Pierre
Executive Director

X

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Recommendation to Fill the Vacant [Insert Position Title] Position in the M&R Department, Section XXX (PCN XXXXXXXX)
Subject line Indented .50-inch from Right Margin, Justified, No Hyphenation, Special Acronyms Allowed in Group A: IO Memos. No ending punctuation

X (1 or 2 blank lines depending on length of memo)

X

OPENING PARAGRAPH: Describe the vacant position title [insert acronym if any], the department acronym, division name and acronym, section name and number [or laboratory name and number], and the PCN number. Indicate the reason for the vacancy and whether the Executive Director previously approved filling this vacancy.

SECOND PARAGRAPH: Indicate the name of the candidate recommended [first and last name]. Explain whether the position is part of the M&R Department Redesign and/or the responsibilities and importance of the position to the District, the M&R Department and the division (or laboratory). Indicate when interviews were conducted, what List and Category the candidates were selected from and where the recommended candidate placed in the interview matrix. Include an explanation of how the candidate's abilities qualify him/her to meet the responsibilities and importance of this position and their potential contribution to the M&R Department, the division, and the District.

AFFIRMATIVE ACTION: If an Affirmative Action consideration was indicated by HR and you are complying with the request, make a reference to the fact. If you have selected a candidate other than those considered by HR, include an explanation of what knowledge, skills, experience, and/or abilities qualify the chosen candidate to be the most qualified person to carry out the duties and responsibilities of the position.

CLOSING PARAGRAPH: The M&R Department respectfully requests your approval to appoint [insert candidate first and last name] to fill the [insert position title or acronym] vacancy in Section XXX.

X (1 or 2 blank lines depending on length of memo)

X

(Continued on next page)

APPROVED BY:
X
X Three blank lines
X
David St. Pierre
Executive Director
X
X (one or two blank lines depending on length of the memo)
TCG:DIV HEAD:ORIGINATOR:typist TCG: DIV HEAD:XXX:Originator:typist
Attachment (Director's office attaches the HR requisition attachments)
cc/att: D. Korcal (will receive a copy of the memo and attachment(s))
Div. Head (others receive a copy of two top pages of HR Requisition)
M. Cohen
Section Head
No bcc's required for Group A: IO Memos.

ADDITIONAL GUIDELINES FOR AIV IO MEMOS

Special abbreviations/acronyms are allowed in Group A: IO Memos that the Department Director signs (Page x) of Style Guide.

If an existing template does not fully satisfy the needs of the document being prepared, the typist should seek direction from the Department Director's office regarding modification of the template in question. If modification of a template is authorized, the modification is for the specific document in question. It should not be assumed that future documents can be modified.

Subject Line: See Above.

Body: **Block Style, 1-inch All margins, 1-Inch Header 0.5-Inch Footer, Times New Roman, 10-12-point font (depending upon length of document). Single-spaced, Justified, NO HYPHENATION** (insert 1 space between sentences in No Hyphenation mode so the sentences space properly). Documents are not required to fit on one page. Note: All Templates will show the Reader Copy Initials line, please remove it when submitting Signature copies.

CLOSING PARAGRAPH: See above

1. **Electronic documents submitted to the M&R Director's Office should be signature and printer ready. No Initial Lines, track changes, or file locations should remain on the Signature copy.**

AV_ED REQUEST FOR PROF. SVCS RFP. APPROVAL_TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** XXXX

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for a Professional Services Contract for [insert descriptive information]

The M&R Department is requesting approval to advertise an RFP for professional services to support the M&R Department's [complete information]

The District contracted with a provider of this professional service for several years, which ended in XXXX. Therefore, the M&R Department plans to [complete information]

The professional services that will be provided with the subject contract will enable [complete information] Funding for this contract ($ dollar amount) is available in the M&R Department's XXXX budget. We believe that there are local resources available to supply these services from academic and private sector entities.

Your approval is requested to proceed to advertise an RFP for professional services to provide [complete information] to the M&R Department when the need arises.

APPROVED BY:

David St. Pierre
Executive Director

TCG:MPC:DIV HEAD:XXX:xx
Attachment (if necessary)
cc: D. LoCascio
H. Zhang
M. Cohen
Section Head
K. Bradley

AV_ ED REQUEST FOR PROF. SVCS. RFP. APPROVAL_ GUIDELINES

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** XXXXXX

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for a Professional Services Contract for [Identify Services Being Requested] Special Acronyms Allowed in Group A: IO Memos (Page x) No Ending Punctuation

X (One or two blank lines depending on length of document)

OPENING PARAGRAPH: [Explain what we are requesting, the duration of the service, and why this is necessary] The M&R Department is requesting your approval to advertise an RFP for professional services to support the M&R Department's [Describe what will be accomplished and how it will affect the M&R Department, the Division and the District if we do not have it]

PARAGRAPH TWO: [Further explanation of past RFPs and/or contract history] The District contracted with a provider of this professional service for several years, which ended in XXXX. Therefore, the M&R Department plans to [What M&R and the District will gain by advertising for a professional service provider]

PARAGRAPH THREE: [Explain what the services will provide to the department] The professional services that will be provided, what the subject contract will enable [Describe funding and budget information] Funding for this contract ($ dollar amount) is available in the M&R Department XXXX budget. [Identify your targeted audience] We believe that there are local resources available to supply these services from academic and private sector entities.

CLOSING PARAGRAPH: Your approval is requested to proceed to advertise an RFP for professional services to provide the [Insert type of support] support to the M&R Department [Reiterate duration of contract or if on an as-needed basis] when the need arises.

X
APPROVED BY:

David St. Pierre
Executive Director

(Continued on next page)

AV_ ED REQUEST FOR PROF. SVCS. APPROVAL_ GUIDELINES (Continued)

INSERT SECOND PAGE HEADER IF REQUIRED

TCG:MPC:DIV HEAD:ORIGINATOR:typist TCG:**MPC**:DIV HEAD:REVIEWERS:typist
Attachment if required
cc: D. LoCascio (adjust cc notation if attachments included)
Div Head
M. Cohen
Section Head
K. Bradley

(Note: This type of document is reviewed by Mike Cohen **before** being signed by the M&R Director.)

BASIC GUIDELINES FOR AV- IO MEMORANDUMS

Subject Line: Memo Specific –Refer to Page x in the Style Guide for Special acronyms approved for use in Group A: IO Memos No ending punctuation

Block Style, 1-inch All margins, 1-Inch Header .50-Inch Footer, Times New Roman, 10.5-12-point font (depending upon length of document). Single-spaced, Justified, NO HYPHENATION (To avoid rivers in the text, insert 1 space between sentences in No Hyphenation mode so the sentences space properly.) Documents are not required to fit on one page. Note: All Templates will show the Reader Copy Initials line, please remove it, along with any file references, when submitting Signature copies .

MULTIPLE PAGE MEMOS: If the document requires two pages and you initially prepared it in a smaller type font, return the type font to12 points and add continuation pages as arequired. If more than one recipient is indicated in the TO: line, address the second page Header as **XXX XXXXX et al.**
Second Page Subject Line can be **Indented** .50-inch on left and right margins and Justified (if longer than one line), or **Centered** if it fits on one line within the .50-inch indented margins.

CLOSING PARAGRAPH Memo Specific

X One or two blank lines depending upon length of document
X APPROVAL SIGNATURE BLOCK
TCG:MPC: DIV. HEAD:ORIGINATOR:typist TCG: DIV HEAD:XXX:XXX:XXX:typist
Attachment (if required)
cc: D. LoCascio – (adjust cc notation if required)
Div Head
M. Cohen
Section Head
K. Bradley

AVI_UPDATED: REQUEST SOLE SOURCE/CERT GOOD STANDING - (OUT OF STATE COMPANIES) TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**:

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Sole Supplier and Approval to Accept a Certificate of Good Standing for [Insert Company Name], of [Insert City and State] Requisition No. XX XXXX

Purchase Requisition No. XX XXXX is to furnish and deliver

The accompanying Requisition No. XX XXXXX is an instance where [Company Name] is the only company who can XXXXX. Therefore, [Insert Company Name] should be considered as the sole provider (see attached sole source [documentation] dated XXXXXX).

[Company Name] is not registered to transact business in Illinois, but is in good standing with the state of XXXXXXXXX (information attached); therefore, approval is recommended by the M&R Department to move forward with the recommendation to issue a purchase order to the out-of-state vendor absent a Certificate of Good Standing from Illinois.

The requisition has been released in the SAP system and your assistance is requested for the release of the purchase order.

TCG:MPC:DIV HEAD:ORIGINATOR:typist TCG:MPC:ALL REVIEWERS:typist
Attachments
cc/att: Division Head
Cohen
Bradley
Section Head

AVI_ UPDATED: REQUEST SOLE SOURCE/CERT GOOD STANDING_GUIDELINES (OUT OF STATE COMPANIES)

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

X

DEPARTMENT: Monitoring and Research **DATE**: Xxx xx, xxxx

X (One of two blank lines depending on length of document)

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Sole Source Supplier and Approval to Accept a Certificate of Good Standing for [Insert Company Name], of [Insert City and State] Requisition No. XX XXXX No Ending punctuation Special Acronyms have been approved for Group A: IO Memos

X (One or two blank lines depending on length of document)

OPENING PARAGRAPH: Purchase Requisition No. XX XXXX is to furnish and deliver [Insert description of what is being procured].

SOLE SOURCE INFO PARAGRAPH: The accompanying Requisition No. XX XXXXX is an instance where [insert Company Name] is the only company who can [Insert what company furnishes]; therefore, [Insert Company Name] should be considered the sole provider (see attached sole source [Insert documentation information] dated XXXXXX).

CERT. OF GOOD STANDING PARAGRAPH: [Insert Company Name] is not registered to transact business in Illinois, but is in good standing with the state of XXXXXXXXX (information attached); **therefore, approval is recommended by the M&R Department** to move forward with the recommendation to issue a purchase order to the out-of-state vendor absent a Certificate of Good Standing from Illinois.

CLOSING PARAGRAPH: The requisition has been released in the SAP system and your assistance is requested for the release of the purchase order.

X

X (One or two blank lines depending on length of document)

TCG:MPC:DIV HD:ORIGINATOR:typist TCG:**MPC:**HZ:REVIEWERS/AUTHOR:typist

Attachments

cc/att: Division Head
Cohen
Bradley
Section Head

AVI – GUIDELINES AND TEMPLATES UPDATED FROM July 21, 2015 E Mail.

Memos are forwarded to the B&A Section (Michael Cohen) before sending to the Department Director's office for signature approval (Appendix F). Mr. Cohen's initials (MPC) should be indicated in both the signature and initial reader lines.

FORMATTING: Block Style, 1-inch All margins, 1-Inch Header .50-Inch Footer, Times New Roman, 10.5- to 12-point font (depending upon length of document). Single-spaced, Justified, NO HYPHENATION (to avoid rivers in the text, insert 1 space between sentences in No Hyphenation mode so the sentences space properly). Special abbreviations/acronyms approved for Group A: IO Memos (Page x).

The Reader's initials will be on the same line as signature initials. (Tab past center position to begin the Reader's initials.) Include the Division Head in the Signature initials.

Remove all Reader initials, file location footers, and track changes when sending electronic copies to the Department Director's office.

MULTIPLE PAGE MEMOS: If the document requires two pages, return the type font to12 points if it was reduced to a smaller size and add continuation pages as required.

Second Page Subject Line: Subject lines in this IO Memo type are commonly more than one line long, therefore; it should be **Indented** .50-inch on left and right margins and Justified in the same manner as the subject line on the first page. Documents are not required to fit on one page.

The Gregg Reference Manual and the current M&R Department Style Guide will serve as the M&R Department reference source.

AVI – GUIDELINES AND TEMPLATES UPDATED FROM July 21, 2015 E Mail Discussing the Removal of the ED's Signature Approval Line for this IO Memo.

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**:

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Sole Supplier, XXXXXXX, XXXXXXX, Purchase Requisition No. XX XXXXX

Purchase Requisition No. XX XXXXX is for XXXX

The accompanying Requisition No. XX XXXXX is an instance where [Insert Company Name] is the only company who

[Company Name] should be considered as the sole provider of [XXXX], because

The requisition has been released in the SAP system and your assistance is requested for the expeditious release of the purchase order.

TCG:MPC:DIV. HD:ORIGINATOR:typist TCG:MPC:ALL:REVIEWERS:typist
Attachment
cc/att: Division Head
M. Cohen
K. Bradley
Section Head

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**: Xxxxx x, xxxx

X (One or two blank lines depending on length of document)

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Sole Supplier, [Insert Company Name], [Insert City and State], Purchase Requisition No. XX XXXXX No ending punctuation Special Acronyms have been approved for Group A: IO Memos

X One or two blank lines depending on length of document

OPENING PARAGRAPH: Purchase Requisition No. XX XXXXX is for… [Insert Purpose of Requisition]

SECOND PARAGRAPH: The accompanying Requisition No. XX XXXXX is an instance where [Insert Company Name] is the only company who [Insert description of what company is sole source provider of] Also address whether the identified instrument or product is the only instrument or product on the market that can meet our needs. Explain why we are using this company if others are available who can meet our needs. (**NOTE: If the question can not be addressed, please do not proceed with a sole source request. Per TCG 9.25.14.)**

DETERMINATION OF SOLE PROVIDER: [Insert Company Name] should be considered the sole provider of [Insert description of what is being provided and why this company is selected if others are available] (see the attached sole source [Insert documentation information], dated XXXXXXXXX), from [Insert Company Name].

CLOSING PARAGRAPH: The requisition has been released in the SAP system and your assistance is requested for the release of the purchase order.

X One or two blank lines depending on length of document.

X

TCG:**MPC**:DIV HD:ORIGINATOR:typist TCG:**MPC:**ALL:REVIEWERS:typist

Attachments

cc/att: Division Head
M. Cohen
K. Bradley
Section Head

(Continued on Next Page)

Memo is forwarded to the Budget & Adm. Section (Michael Cohen), MOBA, before the Department Director signs it. Mr. Cohen's initials should appear in the both the signature and initial reader lines.

FORMATTING: Block Style, 1-inch All margins, 1-Inch Header .50-Inch Footer, Times New Roman, 10.5- to 12-point font (depending upon length of document). Single-spaced, Justified, NO HYPHENATION (to avoid rivers in the text, insert 1 space between sentences in No Hyphenation mode so the sentences space properly). Special abbreviations/acronyms approved for Group A: IO Memos (Page x).

The Reader's initials will be on the same line as the signature initials. (Tab past center position to begin Reader's Initials.)

MULTIPLE PAGE MEMOS: If document requires two pages, readjust type font to 12 points if it was reduced to a smaller size and add continuation pages as required.

Second Page Subject Line: Subject lines in this IO memo type are commonly more than one line long, therefore; it should be **Indented** .50-inch on left and right margins and Justified in the same manner as the subject line on the first page. Documents are not required to fit on one page.

Remove all Reader initials, file location footers, and track changes when sending electronic copies to the Department Director's office.

The Gregg Reference Manual and the current M&R Department Style Guide will serve as the M&R Department reference source.

AVII – GUIDELINES AND TEMPLATES UPDATED FROM July 21, 2015 E Mail Discussing the Removal of the ED's Signature Approval Line for this IO Memo.

AVIII_ CONTRACT BID PROPOSAL RECOMMENDATION_TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**:

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Contract No. xxxxx Requisition No.

In response to your memo dated XXXXX, the M&R Department has reviewed the bid proposal for the subject contract.

[Total number] companies were notified. [Total number] companies requested contract documents and [Total number] companies submitted a responsive formal bid. The sole bid from Xxxxxxx Co. (Xxxxxx) is acceptable and meets the contract specifications.

The estimated value of the contract was $XXXX. Xxxxx's bid of $XXXXX.XX is .XX% ($XXX.XX) lower than the original estimate. Therefore, it is recommended that the contract be awarded to Xxxxx. Funds are available in Account XXX-XXXXXX-XXXX.

Please award this contract at the Board meeting of Xxxx XX, 2015. Also, kindly expedite the purchase order to Xxxxxxxx Co. because

If you have any questions or comments, please contact Karen Bradley at extension 1-4014.

TCG:DIV HD:XXX:xx
Adjust if attachments included
cc: or cc/att:

AVIII_CONTRACT BID PROPOSAL RECOMMENDATION_GUIDELINES

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**: XXXXXX

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Contract [Insert Contract No. and Name] - Requisition No. [XXXXXX] Bid Proposal Recommendation

One or two blank lines depending upon length of memo.

OPENING: In response to your memo dated [Insert Date], the M&R Department has reviewed the bid proposal for the subject contract.

BODY: [Identify total number] companies were notified. [Indicate number of companies] requested contract documents and [how many companies] submitted a responsive formal bid. The sole bid from [Insert Company Name and Acronym if any] is acceptable and meets the contract specifications.

The estimated value of the contract was $XXXX. [Insert Company's Name] bid of $XXXX.XX is .XX% ($XXX.XX) lower than the original estimate. Therefore, it is recommended that the contract be awarded to [Company Name/Acronym]. Funds are available in Account XXX-XXXXX-XXXX.

Please award this contract at the Board meeting of [Insert Date]. Also, kindly expedite the purchase order to [Company Name or Acronym] because [Insert reason why PO must be expedited].

CLOSING: If you have any questions or comments, please contact XXXXX XXXXX, Job Title, at extension XXXXX.

One or two blank lines depending upon length on memo.

TCG:MPC:DIV HD:ORIGINATOR:typist TCG:MPC:ALL REVIEWERS:typist
Attachment
cc /att: Div. Head
Section Head
M. Cohen
K. Bradley (or other B&A Section Staff)
cc: Division Adm. Asst.

(Continued on next page)

Subject: Follow First Page Style for Long Subject Lines No Ending Punctuation

Refer to IO Memo Guidelines (Template A0 and AI) For Complete IO Memo Instructions

SUBJECT: The Subject Should Reference the Name of the Document Being Responded to and Include any Identifying Numbers. The Document Should be Easily Identified in the File Name. Text is Indented .50-inch from Right Margin. Justified, No Hyphenation, See Special abbreviations/acronyms (Page x)

X One or two blank lines depending upon length of document
X

BODY: Block Style, 1-inch All Margins, 1-inch Header .50-inch Footer, Times New Roman, 10.5- to 12-point font (depending upon length of document). Single-spaced, Justified, NO HYPHENATION (To avoid rivers in the text, insert 1 space between sentences in No Hyphenation mode so the sentences space properly). Documents are not required to fit on one page. Note: All Templates will show the Reader Copy Initials line, please remove it when submitting Signature copies.

1. Enumerated or Bulleted Lists: Indented .50-inch from the left and right margins with the number or bullet beginning at the left side indented margin. For Text: Set tab at 0.25- to .50-inch from the number or bullet and set the "2nd line indent" for carryover lines. Justified text with 6-12-point spacing between numbered or bulleted items (depending upon length of document). Remain consistent with the spacing size used.

MULTIPLE PAGE MEMOS: If document requires two pages, return any smaller type font to12 points. If more than one recipient is indicated in the TO: line, address the second page Header as **XXX XXX et al. Second Page Subject Line** can be **Indented** .50-inch on left and right margins and Justified (if longer than one line), or **Centered** if it fits on one line within the .50-inch indented margins.

CLOSING PARAGRAPH In addition to text, include the name, job title, telephone extension and email address (if necessary) of the contact person capable of answering questions.

X One or two blank lines depending upon length of document
X
TCG:DIV HD:ORIGINATOR:typist TCG: DIV HEAD:XXX:XXX:XXX:typist
Attachment (or Enclosure) Depending on the term used in the body of the document
cc w/att: or cc: Include other pertinent cc recipients as required

bcc's not required in M&R Department documents.

Remove any Reader initial line, file location reference, and track changes when submitting electronic documents to the Department Director's office.

SAMPLES

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** September 17, 2015

TO: Manju P. Sharma
Director of Maintenance and Operations

Catherine A. O'Connor
Director of Engineering

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Vetting Panel Activity - August 2015 Update

The last vetting panel activity was sent out via memo on July 31, 2015. Vetting activity that has occurred since that update includes one (1) Executive Team meeting to review three (3) project submissions. The results are summarized in the table below.

Vetting Panel Activity				
Project Name	Project Sponsor	Date Presented	Cost ($1,000s)	Outcome
15-XXX-21 Restoration of Pump and Blower House at CWRP	M&O	9/2/15	$1,500	Executive Team **APPROVED.**
				It was recommended that Engineering look at the possibility of including the evaluation of this building with the evaluation of the O'Brien WRP Pump and Blower Building by an expert firm.
Odor Improvement at CWRP	M&R	9/2/15	Up to $1,350	Executive Team **APPROVED.**
				M&O to address recommended improvements to the Grit Building and look into the possibility of installing a chemical misting system for odor mitigation. Engineering to take over the design of recommended Bio-trickling filter. M&R to pass the concept design for the Bio-trickling filter to Engineering and provide needed support to both M&O and Engineering.

Subject: Vetting Panel Activity - August 2015 Update

Vetting Panel Activity				
Project Name	Project Sponsor	Date Presented	Cost ($1,000s)	Outcome
CWRP Biosolids Final Processing Evaluation	M&R	9/2/15	Up to $17,000	Executive Team **APPROVED.**
				Composting at the CWRP was approved to move forward. M&O was directed to start biosolids composting at CWRP with the purchased equipment. M&O would work with Engineering to build the covered biosolids composting facility at CWRP. M&R would evaluate dewatering technologies (centrifuge is discouraged) concurrently with composting facility design at the CWRP.

In addition to the approval of the above three projects, the Executive Director instructed to investigate other options regarding District-wide EQ biosolids outlets as follows:

1. Evaluating biosolids processing options at LASMA right away.
2. Taking advantage of the recently passed legislation and investigating options for distributing EQ biosolids locally to aggressively reduce biosolids hauling cost.
3. Developing EOI/RFP for looking at interested parties to handle bulk distribution of EQ biosolids District-wide.
4. Evaluating the possibility of biosolids composting at the Egan WRP to reduce hauling cost.

All approved project forms, presentations, scoring sheets, and other relevant data will be posted to the portal.

Please contact Edward Podczerwinski at extension 8-4060 if you have any questions regarding the status of projects submitted for vetting.

TCG:EP:mb
cc: Mr. St. Pierre
Dr. Zhang

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**: September 17, 2015

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

Ronald M. Hill
General Counsel

Regina Berry
Diversity Administrator

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Review of Contract 15-111-11 "Furnish, Deliver and Install Bioreactor and Drainage Water Management Systems and Associated Drainage Tiles at the Fulton County Site" (Requisition No. 1401107)

Attached is a draft of the subject contract for your review and comment. Please approve the contract as written or return it with your revisions at your earliest opportunity. The anticipated date of Board approval, for the Authority to Advertise, is October 1, 2015. We would like this contract advertised and awarded as soon as possible to complete the work by December 15, 2015.

A copy of this contract is also being sent to the Diversity Administrator to determine if Appendix D is applicable, since the estimated value is $125,000.00.

If you have questions or comments, please contact Karen Bradley at extension 1-4014.

TCG:MPC:KB:mh
Attachments
cc/att: Zhang
Cox
Tian
Bradley
Quinlan

COPY

SAMPLE: IO MEMO AND INFORMATIONAL (ATTACHMENT) DOCUMENT

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** XXXXXX

TO: Manju P. Sharma
Director of Maintenance and Operations

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Environmental Management System for Biosolids 2014 Goals and Objectives – Element 5

Reference is made to your memorandum dated June 14, 2013. The M&R Department has two biosolids environmental management system goals and objectives for 2014 (see attached).

If additional information for these goals is required (or to obtain the electronic files), please contact Guanglong Tian at extension 84054.

TCG:HZ:GT:cm
Attachments
cc: Liston
Zhang
Cox
Hundal
Tian

MONITORING AND RESEARCH GOALS AND OBJECTIVES FOR 2014

Goal: Produce 1000 cubic yards of biosolids compost

Objective
Produce biologically stable and odor-free biosolids compost using woodchips and/or yard waste.

Effect on Biosolids Production
Odor-free biosolids compost having consistent nutrient content would be produced and made available to users year round.

Relevant Environmental Management System Outcomes
Biosolids compost can be stored for an extended period of time at solids drying cells or at utilization sites without the potential for odors.

Improve public acceptance of biosolids land application practices under the Metropolitan Water Reclamation District of Greater Chicago's (District's) Controlled Solids Distribution and Farmland Application Programs.

Action Plan

1. Obtain sufficient woodchips and/or yard waste from City of Chicago.
2. Set-up and manage composting windrows for producing biosolids compost.

The Biosolids Utilization and Soil Science Section (Section 123) staff will analyze the properties of woodchips and/or yard waste and provide guidance for preparing the feedstock mixture to the Maintenance and Operations (M&O) Department. Section 123 staff will also monitor the composting process (time and temperature of composting piles) and test the quality of the final product with assistance from the Analytical Laboratories Division. The M&O Department staff at the solids drying facilities will arrange the delivery of woodchips and/or yard waste and carry out operations related to the composting process.

Tracking Progress
Quarterly reports on the progress and outcomes as indicated in the action plan.

Funds/Resources
Funds are included in the 2014 budget and will be included in subsequent budget cycles.

Responsible Person(s)
Senior Environmental Soil Scientist.

Target Date
The work under this objective will begin in April 2014 and is extended through October 2014.

MONITORING AND RESEARCH GOALS AND OBJECTIVES FOR 2014

Goal: Locate three (3) new Significant Industrial Users and/or Large Commercial Industrial Users that discharge to any of the Metropolitan Water Reclamation District of Greater Chicago's (District's) Water Reclamation Plants (WRPs)

Objective
To locate, inspect, and sample (if needed) any new facilities to ascertain if their discharge can adversely affect the operation of the receiving WRP or quality of biosolids.

Description
Industrial Waste Field Services staff will conduct surveillance throughout the Cook County area. Unknown or new facilities conducting business, with possible process discharge to the sewer system, will be checked to verify inclusion in the District's database. If not included, the facility will be inspected and sampled (if necessary).

Effect on Biosolids Production
New facilities are inspected to determine if they have the capability to adversely affect the operation of the receiving WRP or the quality of biosolids. If so, the facility will be placed on a monitoring schedule to protect the aforementioned operations and biosolids quality.

Relevant Environmental Management System Outcomes
Monitoring of facilities will increase regulatory compliance, protect the receiving WRP, and reduce unwanted contaminants in the biosolids.

Action Plans
Facilities will be identified through municipal contacts, perusal of Tier II reports, and drive-by surveillance. Newly identified facilities will be inspected within 30 days and sampled if warranted.

Tracking Progress
The Senior Environmental Specialist will schedule surveillance, verify that the inspections are conducted, the reports written, and the information entered in the District database.

Responsible Person(s)
Senior Environmental Specialist.

Funds/Resources
Funds are budgeted for 2014.

Target Date
December 2014

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**: XXXX XX, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Approval for Job Order Contract J16129-001 for the Repairs at the Lue-Hing R&D Complex Roof Areas 1, 2, 4, and 5 at the SWRP

The M&R Department requests your approval for a Job Order Contract (JOC) J16129-001 to address issues with Areas 1, 2, 4, and 5 of the roof at the Lue-Hing R&D Complex at the SWRP. Per the approved plan of action to address the Lue-Hing R&D Complex roof (see attached December 18, 2014 memo), Area 3 is being incorporated into the Engineering Department's Project 04-128-3P and the replacement of Area 6 passed the vetting process (under $500,000) and was forwarded to the Engineering Department to address. The Engineering Department recommended that Areas 1, 2, 4, and 5 be addressed through in-house trades or JOC in their November 21, 2014, correspondence (attached). If this JOC is approved, we will need to coordinate this work with the Engineering Department because the JOC contractor will be working on the areas affected by the project 04-128-3P.

The anticipated cost for Areas 1, 2, 4, and 5 roof repairs via JOC is $235,000 and we expect the work to be completed by the end of August 2015, if it starts in May 2015. Funds are available in the Construction Fund designated to the M&O Department in 2015. We will work with the M&O Department to allocate the needed funds for this project in 2015.

Please contact me at extension 1-5190 if you have any questions.

APPROVED BY:

David St. Pierre
Executive Director

TCG:MPC:HZ:PU:as
Attachments
cc/att: C. O'Connor/M. Sharma
H. Zhang/M. Cohen
E. Podczerwinski/J. Grabowy

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**: September 15, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Approval for Job Order Contract J16129-002 for Installation of Odor Monitoring Equipment at the Calumet WRP

The Monitoring and Research Department requests approval for a Job Order Contract (JOC) J16129-002 to install odor-monitoring equipment procured through 14-RFP-34 at the Calumet WRP. This work includes the installation of electronic odor sensors, door detectors, and a weather station. The installation of the odor monitor in the Altgeld Gardens neighborhood cannot be determined at this time. We are working to secure permission to install the monitor in that neighborhood. Without delaying the installation of odor sensors at the Calumet WRP, a separate JOC will be used to facilitate the installation of the odor monitor in the Altgeld Gardens neighborhood.

The estimated cost for this work is $75,000. The odor sensors will be installed by the end of this year. Funds for this JOC are available in the 2015 Construction Funds. The scope of work for this installation and JOC Job Approval form are attached.

Please contact me at 1-5190 if you have any questions.

APPROVED BY:

David St. Pierre
Executive Director

TCG:MN:cpc
Attachment
cc: Cohen
Zhang
Podczerwinski
Grabowy
Nator

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**: May 26, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Approval to Sponsor the 2015 Illinois Society of Professional Engineers Annual Convention at Lisle, Illinois, on July 23-24, 2015

The M&R Department requests your approval to sponsor the 2015 Illinois Society of Professional Engineers (ISPE) Annual Convention at Lisle, Illinois on July 23-24, 2015. The ISPE certifies the District to award professional development hours (PDHs) to our seminar attendees, many of which are District employees and rely on PDHs to maintain their Professional Engineer (PE) Licenses. The ISPE also publicizes the District seminar series on their website. In the past, the District provided sponsorship to the ISPE annual conventions.

As a "Gold Sponsor", the District will be recognized in the event announcements, event signage, verbal recognition at the convention and the opportunity to send a representative to showcase the District during the event. The cost for this sponsorship is $750. The M&R Department has sufficient funds to cover the cost and will handle the payment if you approve.

We respectfully request your approval for the sponsorship to the ISPE event. If you have any questions, please contact me at 1-5190.

APPROVED BY:

David St. Pierre
Executive Director

TCG:HZ:bg
Attachment
cc: Zhang

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** June 8, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request to Enter Into a Professional Service Agreement With Dr. Richard Cooke, of the University of Illinois, to Provide Assistance on the Installation of Bioreactors for Nutrient Loss Reduction Initiative at the Fulton County Site

In a memorandum dated May 14, 2015, you approved the M&R Department's request to hire Dr. Richard Cooke, Professor and Drainage Extension Specialist of the Agricultural and Biological Engineering Department at the University of Illinois Urbana-Champaign, to provide assistance on the installation and evaluation of bioreactors as part of the District's nutrient loss reduction initiative at the Fulton County site.

The original request was for Dr. Cooke to provide the service as a professional consultant. However, Dr. Cooke has decided to provide this service under the Master Agreement with University of Illinois. The cost of the proposed work is approximately $9,504.00. Funding is available in the 2015 M&R Department budget under Commitment Item 601170. In accordance with the procedures followed under the Master Agreement, attached for your approval is Dr. Cooke's proposal to conduct the work under the Master Agreement.

Please contact me if you have any questions.

APPROVED BY:

David St. Pierre
Executive Director

TCG:AC:kq
cc: Cohen
Zhang
Cox
Hundal
Tian
Oladeji
Quinlan

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** May 5, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request to Fill the Vacant Pollution Control Technician I Position in the Industrial Waste Division of the M&R Department, Field Services Section, Section 195 (PCN 3000)

The M&R Department requests to fill the vacant Pollution Control Technician I position in its Industrial Waste Division, Section 195. The vacancy currently exists due to the retirement of Mr. XXXXXX effective XXXX XX, 2015.

In order to provide adequate staffing for the administration of Field Services Programs and maintain consistent support of mission-critical work, we respectfully request that a requisition be generated and that this position in the M&R Department be filled.

APPROVED BY:

David St. Pierre
Executive Director

TCG:MJ:tj
cc: Korcal
Joseph
Cohen

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** August 11, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Recommendation to Fill the Vacant Laboratory Assistant Position in the M&R Department, Section 166 (PCN 3000)

A vacancy currently exists for a Laboratory Assistant (LA) position in the M&R Department, Analytical Laboratories Division, Egan Analytical Laboratory, Section 166. The vacancy, which you recently approved to fill, occurred due to the promotion of Ms. XXXXXXXXXX.

The M&R Department recommends XXXXXXXXXX be appointed to fill the vacancy. Telephone interviews were conducted in July 2015 of the second 25 candidates from the LA lottery list; Ms. XXXXXXXXXX placed in the Best category of the interview matrix. She has approximately nine years of laboratory experience. She also indicated that she has experience cleaning lab glassware and has worked with LIMS, which is an important part of the LA's responsibilities.

Ms. XXXXXXXXXX meets the affirmative action recommendation for a minority appointment in this position.

The M&R Department recommends that XXXXXXXXXX be appointed to the LA vacancy in Section 166.

APPROVED BY:

David St. Pierre
Executive Director

TCG:DC:kw
Attachment
cc: Korcal
Coolidge
Cohen

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** January 28, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Approval to Advertise a Request for Proposal for Professional Services for Assistance with the Development of a Process and Hydraulic Model for the Calumet WRP

The M&R Department requests your approval to advertise a request for proposal (RFP) for professional services to assist the District in updating the existing process model at the Calumet WRP and in developing a hydraulic model. The whole plant process and hydraulic models will be used for capital planning, feasibility studies, and engineering evaluations. More specifically, the following projects have been identified: phosphorus removal, phosphorus recovery, new ammonia limits, and nitrogen limits, as part of the Long-Term Capital Planning efforts, which could benefit from having a process and hydraulic model available during the plan development.

As requested by you at a capital planning meeting on August 19, 2014, we have provided details on the District's process and hydraulic modeling effort in the attachment. As identified, there is an existing process model available for the Calumet WRP, but the model is outdated and requires significant updates. There is no existing whole plant hydraulic model for the Calumet WRP. District Research Scientists have the technical capabilities to develop the necessary models; however, staff will benefit from insight and training with industry best practices, and can rely on consultants to serve as a staff extension for quicker completion. Therefore, the M&R Department would like approval to request detailed proposals from qualified vendors/consultants with expertise in the services associated with process and hydraulic modeling for the Calumet WRP for 2015. The scope of work will be divided into the following tasks:

Task 1. Advise on the development of process and hydraulic models.

Task 2. Provide recommendations for hydraulic modeling software.

Task 3. Identify gaps in plant operating and infrastructure data for model development and collect such data as needed.

Task 4. Develop whole plant models including calibration/validation.

Task 5. Provide training on developed models and software.

Subject: Request for Approval to Advertise a Request for Proposal for Professional Services for Assistance with the Development of a Process and Hydraulic Model for the Calumet WRP

Task 6. Determine appropriate model maintenance procedures.

Task 7. Additional work as necessary.

The estimated cost of the Calumet WRP process modeling services is up to $250,000 and will take approximately 12 months to complete. Funds for these services are budgeted in the Construction Research Fund. Your approval is requested to proceed with advertising an RFP for professional services for developing the Calumet WRP whole plant process and hydraulic models.

APPROVED BY:

David St. Pierre
Executive Director

TCG:MPC:HZ:JSG:DKS:as
Attachment
cc/att: Zhang
Cohen
Grabowy
Sabalaj

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE**: March 23, 2015

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Sole Supplier and Approval to Accept Certificate of Good Standing for InterSeeder Technologies, of Woodward, Pennsylvania
Purchase Requisition No. 1394929

Purchase Requisition No. 1394929 is to furnish and deliver a cover crop interseeder with herbicide applicator, fertilizer applicator, and grain drill conversion capabilities. The interseeder will be used to plant cover crop between rows of standing corn at the Metropolitan Water Reclamation District of Greater Chicago's Fulton County site.

The accompanying Requisition No. 13949259 is an instance where InterSeeder Technologies is the only company who is the sole manufacturer of a cover crop interseeder that has the multifunction platform. Therefore, InterSeeder Technologies, should be considered as the sole provider (see the attached letter from InterSeeder Technologies).

InterSeeder Technologies is not registered to transact business in Illinois, but is in good standing with the state of Pennsylvania (information attached); therefore, approval is recommended by the M&R Department to move forward with the recommendation to issue a purchase order to the out-of-state vendor absent a Certificate of Good Standing from Illinois.

The requisition has been approved in the SAP system and your assistance is requested for the release of the purchase order.

TCG:MPC:HZ:AC:bg
Attachments
cc/att: Zhang
Cohen
Bradley

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** July 30, 2015

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Sole Supplier, Harry J. Kloeppel & Associates, Inc., Lombard, IL
Purchase Requisition No. 1401817

Purchase Requisition No. 1401817 is to furnish, deliver and install two new sashes on existing fume hoods located in the Egan Organic Compounds Analytical Laboratory. This purchase is necessary to support routine laboratory operation and will regulate airflow more efficiently than the current sashes.

The accompanying Requisition No. 1401817 is an instance where Harry J. Kloeppel & Associates, Inc. (Kloeppel), is the sole supplier of performing the process of installing sashes that operate only in the left to right directions, because Kloeppel has exclusive rights from the manufacturer to perform this process.

Kloeppel should be considered as the sole provider of furnishing, delivering and installing two new sashes on existing fume hoods since no other company can perform the necessary work (see the attached sole source letter from Kloeppel).

The requisition has been released in the SAP system and your assistance is requested for the expeditious release of the purchase order.

TCG:MPC:DC:cs
Attachments
cc/att: Coolidge
Cohen
Bradley

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research Department **DATE:** August 3, 2015

TO: Darlene A. LoCascio
Director of Procurement and Materials Management

FROM: Thomas C. Granato Thomas Granato /HZ
Director of Monitoring and Research

SUBJECT: Contract 15-106-11, "Furnish and Deliver Contract Laboratory Technicians for Various Locations" (Requisition 1397583)

In response to your memo dated July 22, 2015, the Monitoring and Research Department has reviewed the bid proposals for the subject contract.

Seven hundred thirty one companies were notified, eight companies requested contract documents, and two companies submitted formal bid proposals. The bid proposal from ANA Laboratories (ANA) meets the contract specifications.

The estimated cost of the contract was $360,000.00, placing ANA's bid of $350,575.00, 2.6 percent ($9,425.00) below than the original estimate. Therefore, it is recommended that the contract be awarded to ANA. Funding is available in Account 101-16000-612490.

The annual estimated expenditures for this contract are as follows:

2015	=	$ 60,000.00
2016	=	$110,575.00
2017	=	$120,000.00
2018	=	$ 60,000.00

Please award this contract at the Board Meeting of September 3, 2015. If you have any questions, please contact Karen Bradley at extension 1-4014.

TCG:MPC:KB:mh
Attachments: Original bid proposals (2)
cc: Zhang
Coolidge
Cox
Cohen
Bradley
Quinlan
Shillin

APPENDIX B

SPECIAL INTEROFFICE MEMOS

BIa_ED IO MEMO TO THE BOARD OF COMM. _TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: General Administration **DATE:** XXXXXXXXXX

TO: President Meany and Members of the Board of Commissioners

FROM: David St. Pierre, Executive Director

SUBJECT:

This is in response to a request from… The Monitoring and Research (M&R) Department

Insert additional information as needed or closing paragraph

If you require additional information, please contact me.

TCG:AUTHOR:typist
Attachment
cc: Mr. N. O'Connor

BIa_ED IO MEMO TO BOARD OF COMM_ GUIDELINES

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: General Administration **DATE:** XXXXXX

X

X

TO: President Meany and Members of the Board of Commissioners

FROM: David St. Pierre, Executive Director

SUBJECT: Insert Subject Line No Acronyms or Ending Punctuation - Indent .50-inch from right margin

X

X One or two blank lines depending on length of document

OPENING PARAGRAPH: This is in response to a request from Commissioner [insert last name], or constituent, [insert full name] regarding [insert full description of the information requested]. The Monitoring and Research (M&R) Department [insert complete response information].

SECOND PARAGRAPH: [Insert additional information as needed or closing paragraph.]

CLOSING PARAGRAPH: For additional information, please contact me. No Phone No.

X One or two blank lines depending on length of document

X

TCG:AUTHOR:typist TCG:DIV HD:ALL REVIEWERS:typist

Attachment (If applicable)

cc (or cc/att.): Mr. N. O'Connor

**Please include the bcc list (if any) on a separate SIGNATURE page (not a Reader copy page), for submittal to the ED's office along with original letter indicating Mr. O'Connor's cc notation. The ED's office uses the second page for distribution of bcc list.

bcc: or bcc/att: Other Dept. Heads (Dr./Mr./Ms.)
Division Head(s) (Dr./Mr./Ms.)
Other Staff (Dr./Mr./Ms.)

All cc's and bcc's are listed on the Reader copy for M&R Department records.

(continued on next page)

INSERT 2ND PAGE HEADER IF REQUIRED
X
X

BIa ED SIGNATURE MEMO FORMATTING:

1-inch top and bottom margins, 1.25-inch side margins. 1-inch Header, 0.50-inch Footer. Justified, No Hyphenation, Single space, Times New Roman, 11-12-point font. Complete any continuation page headings following A-1 IO Memo Header instructions. The Reader's initials will be on the same line as the signature initials. (Tab past center position to begin Reader's Initials.)

Note centering of MWRD Heading, change DEPARTMENT to General Administration.

Submit a second copy of the Signature page when bcc's are included in the IO Memo.

Show all cc's and bcc's on Reader copy for M&R Department files--

Remove all Reader initials, file location footers, and track changes when sending electronic copies to the Department Director's office.

Approved Abbreviations/Acronyms are listed on Pages xi-xiv and should be spelled out at first use.

We have been instructed NOT TO INCLUDE the Executive Director's Initials in the Signature Initial line when he is signing the memo

BIa

BIb_ ED IO BOARD MTG SUMMARY REQUEST RESPONSE - TEMPLATE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: General Administration **DATE:**

TO: President Meany and Members of the Board of Commissioners

FROM: David St. Pierre, Executive Director

SUBJECT: [Insert Board Meeting Date], Board Meeting Summary Request No. [Insert the request number as indicated in Board Meeting Minutes], [Insert brief description of request as shown in Board Meeting Minutes]

This is in response to the [Insert meeting date], Board Meeting Summary Request from Commissioner [insert last name], regarding [Insert full description of request] The Monitoring and Research (M&R) Department…

Insert additional information as needed or closing paragraph.

For additional information, please contact me.

TCG:AUTHOR:typist TCG:DIV HD:ALL REVIEWERS:typist
Attachment
cc or cc/att: Mr. N. O'Connor

bcc or bcc/att: Mr. XXXXX
Ms. XXXXXXXXXXX
Dr. XXXXXX

BIb_ED IO BOARD MTG SUMMARY REQUEST RESPONSE_ GUIDELINES

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: General Administration **DATE:** XXXXXX

X

X

TO: President Meany and Members of the Board of Commissioners

FROM: David St. Pierre, Executive Director

SUBJECT: [Insert Board Meeting Date], Board Meeting Summary Request No. [Insert the request number as indicated in Board Meeting Minutes], [Insert brief description of request as shown in Board Meeting Minutes]

X

X One or two blank lines depending on length of document

OPENING PARAGRAPH: This is in response to the [Insert meeting date], Board Meeting Summary Request from Commissioner [insert last name], regarding [insert full description of the information requested]. The Monitoring and Research (M&R) Department [insert complete response information].

SECOND PARAGRAPH: [Insert additional information as needed or closing paragraph.]

CLOSING PARAGRAPH: For additional information, please contact me.

X One or two blank lines depending on length of document

X

TCG:AUTHOR:typist TCG:DIV HD:ALL REVIEWERS:typist

Attachment (If applicable)

cc (or cc/att.): Mr. N. O'Connor

**Please include the bcc list (if any) on a separate signature page (not a Reader copy page), for submittal to the ED's office along with original letter indicating Mr. O'Connor's cc notation. The ED's office uses the second page for distribution of bcc list.

bcc: or bcc/att: Other Dept. Heads (Dr./Mr./Ms.)
Division Head(s) (Dr./Mr./Ms.)
Other Staff (Dr./Mr./Ms.)

All cc's and bcc's are listed on the Reader copy for M&R Department records.

(continued on next page)

BIb_ED IO BOARD MTG SUMMARY REQUEST RESPONSE_ GUIDELINES

INSERT 2ND PAGE HEADER IF REQUIRED
X
X

BIb ED SIGNATURE MEMO FORMATTING:

1-inch top and bottom margins, 1.25-inch side margins. 1-inch Header, 0.50-inch Footer. Justified, No Hyphenation, Single space, Times New Roman, 11-12-point font. Complete any continuation page headings following A-1 IO Memo Header instructions.

The Reader's initials will be on the same line as the signature initials. (Tab past center position to begin Reader's Initials.)

Show on Reader copy only -- bcc or bcc/att: Authoring Section in M&R Department, if needed.

Remove all Reader initials, file location footers, and track changes when sending electronic copies to the Department Director's office.

Note centering of MWRD Heading, change DEPARTMENT to General Administration.

Spell out all Acronyms at first use and remain consistent thereafter. The reader copy initial train is indicated on the Template, please remove for signature copy.

We have been instructed NOT TO INCLUDE the Executive Director's Initials in the Signature Initial line when he is signing the memo

Bib

Title

Technical Memorandum [Insert number]

Date:

To: Phosphorus Task Force and Advisory Committee

From: Phosphorus Study/Planning Team

Subject:

Body of Memorandum

Closing (if any)

Reviewer(s)/Author/Typist Initials on Reader copy only.

The Title Heading used here will become the Report Title and will be used on the Technical Memorandum Report Cover Template. The Title can be Full Justified or Left Margin Justified Depending Upon Length of Title

Technical Memorandum [Insert Memo Number]

Date:

To: Phosphorus Task Force and Advisory Committee

From: Phosphorus Study/Planning Team

Subject: Subject Justified, indented .50-inch from right margin.

X (One or two blank lines depending upon length of memo.)
X

TITLE HEADING: The Technical Memorandums (TMs) are prepared with .75-inch top and bottom Margins and 1-inch side margins, .75-inch Header and .50-inch Footer. Follow the Heading guidelines shown above (14-Point Bold Font, Times New Roman) the title can be prepared Full or Left-Hand Justified for the Title and the TM number. Leave one blank line before and after inserting a Border Line to separate the Title Heading portion from the Date

DATE, TO, FROM, SUBJECT: Currently, only the Phosphorus Team are initiating TMs, so the addresses are those indicated above. The subject line is prepared in Times New Roman, 12-point font, .50-inch indent on right-hand margin, no hyphenation, no acronyms.

BODY: The body of the text is prepared in Times-New Roman, 12-point font, Block style, Justified with no Hyphenation. Page numbers are inserted at center position on the bottom of each page, beginning on the first page. The TMs may contain reviewer/author/typist initials on the Reader copy for tracking the review process, but all initials are removed from the final document.
The TM is prepared following the M&R Department Research Report format guidelines for text, tables, and figures and when utilizing 1st, 2nd, and 3rd order headings. Tables and/or figures can be embedded within the text if space allows, refrain from dividing the table at the end of the page. Approved acronyms for use in TMs is shown on Pages xi-xiv.

The TMs are reviewed, approved and distributed by the initiating division. If the M&R Department prepares the TMs, the formatting guidelines contained herein should be followed.

The final TM is forwarded to the Director's office where staff will prepare and attach the Technical Memorandum Report Cover Page Template, obtain an M&R Report Number from the EM&R Division, and post the TM Report on the District's Website.

NOTE: Do not insert Headers on any continuation pages.

SAMPLES

INTEROFFICE MEMORANDUM

COPY

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: General Administration **DATE:** May 1, 2015

TO: President Spyropoulos and Members of the Board of Commissioners

FROM: David St. Pierre, Executive Director DSP

SUBJECT: User Charge Program

In response to your inquiry regarding how User Charge fees are determined, the following is offered. The Metropolitan Water Reclamation District of Greater Chicago (District) administers the User Charge Ordinance (UCO) to recover the cost of operations, maintenance and replacement (OM&R) costs incurred by the District in treating and disposing of sewage, industrial wastes and other wastes generated by each user. The User Charge program is mandated by The Federal Water Pollution Control Act Amendments of 1972 and the Clean Water Act of 1977, and the rules and regulations of the United States Environmental Protection Agency (USEPA). The District ensures an orderly and fair collection of each user's share of the OM&R costs through the administration of the UCO.

In 1980, the USEPA approved the District's User Charge System (UCS) proposal based in part on *ad valorem* property taxes and an Industrial Cost Recovery System. In this approved proposal, users are classified as either residential and small non-residential commercial-industrial users; large commercial-industrial users; or tax-exempt users. The residential and small non-residential commercial-industrial users pay the cost of treatment for the waste that they discharge entirely through their *ad valorem* property taxes. The large commercial-industrial users pay a portion of the cost of treatment for the waste that they discharge through their *ad valorem* property taxes, but because they tend to discharge much higher volumes of water and/or strength of waste (biochemical oxygen demand (BOD) and suspended solids (SS) loadings) than residential properties, they must be assessed a further user charge based on volume and waste strength to allow for full recovery of their cost of treatment. The tax-exempt users are not subject to *ad valorem* property tax and so the District must recover the cost of treatment of their discharged waste entirely through the assessment of a user charge based on the volume and strength of waste they discharge.

The District calculates the User Charge for the large commercial-industrial users and the tax-exempt users to ensure full recovery of the OM&R costs associated with treating their wastes and full recovery of the UCO administrative costs associated with monitoring their discharge, and reviewing and clearing their account filings. The large commercial-industrial and tax-exempt users are required to submit their annual certified statement providing the flow volume and concentration of BOD and SS during the calendar year on or before February 20 of the following year. The user charge is then calculated based on the reported volume,

Subject: User Charge Program

BOD and SS concentrations and the rates for each parameter. The User Charge billing rates applicable to the large commercial-industrial and tax-exempt users for 2015 are listed below.

Volume	$250.51 per million gallons
BOD	$240.49 per thousands of BOD
SS	$154.08 per thousand pounds of SS

The District has projected the annual rates for a ten-year period beginning in 2014. This was done in response to the user's request to have more predictable user charges that don't fluctuate widely from year to year. The projected rates will be reevaluated every three years to ensure that the program is fully recovering the OM&R costs. Adjustments to the projected rates will be made, if necessary, after each three-year evaluation.

If you have any further questions regarding this matter please contact me.

TCG:MJ:tj
cc: Mr. N. O'Connor

INTEROFFICE MEMORANDUM

COPY

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: General Administration **DATE:** May 5, 2015

TO: President Spyropoulos and Members of the Board of Commissioners

FROM: David St. Pierre, Executive Director D. St.

SUBJECT: April 23, 2015, Board Meeting Summary Request No. 3, Research on the Pesticide Chemical Cyclophane

This is in response to the April 23, 2015 Board Meeting Summary Request from Commissioner Avila regarding information on the pesticide chemical cyclophane. Commissioner Avila made the request in the context of the recent World Health Organization (WHO) evaluation of the carcinogenicity of the active ingredient in the herbicide Roundup, which is used on a limited basis at Metropolitan Water Reclamation District of Greater Chicago (District) facilities. Insofar as glyphosate is the active ingredient in Roundup and was one of the herbicide chemicals recently evaluated by the WHO, the Monitoring and Research Department is providing the following in response to Commissioner Avila's request.

The International Agency for Research on Cancer (IARC) is the WHO's specialized cancer agency. A core function of the IARC is the Monographs Programme, which convenes international expert working groups to evaluate the evidence for carcinogenicity of specific exposures to chemicals. The IARC Monographs are a globally-recognized authority on the carcinogenicity of over 1,000 chemical compounds. The carcinogenicity of a given chemical is classified by IARC into one of five groups based on published, peer-reviewed literature:

- Group1: Carcinogenic to humans
- Group 2A: Probably carcinogenic to humans
- Group 2B: Possibly carcinogenic to humans
- Group 3: Not classifiable as to its carcinogenicity to humans
- Group 4: Probably not carcinogenic to humans

The IARC will issue "Monographs Volume 112: Evaluation of Five Organophosphate Insecticides and Herbicides" in 2015, which will be a review of five pesticides, including

Subject: April 23, 2015, Board Meeting Summary Request No. 3, Research on the Pesticide Chemical Cyclophane

use of personal protective equipment can be re-emphasized to ensure District personnel and contractors are properly protected during application. Following these precautions will result in negligible risk to District personnel and contractors. Additionally, since Roundup is sprayed within the confines of District property, and because glyphosate readily breaks down in the environment, the risk to residents living in proximity to the WRPs is also negligible.

If you have any questions regarding this information please contact me.

TCG:HZ:ae
cc: Mr. N. O'Connor

Subject: April 23, 2015, Board Meeting Summary Request No. 3, Research on the Pesticide Chemical Cyclophane

References

Guyton, K.Z., D. Loomis, Y. Grosse, F. El Ghissassi, L. Benbrahim-Tallaa, N. Guha, C. Scoccianti, H. Mattock, and K. Straif,. "Carcinogenicity of tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate." *The Lancet Oncology*, 2015.

International Agency for Research on Cancer (IARC). Press Release: IARC Monographs Volume 112: evaluation of five organophosphate insecticides and herbicides, Lyons, France, 2015.

U.S. Environmental Protection Agency (USEPA). "Summary profile for glyphosate." Integrated Risk Information System. Office of Research and Development, Washington, DC, 2014a.

U.S. Environmental Protection Agency (USEPA). "Reregistration Eligibility Decision (RED) for Glyphosate." EPA-738-R-93-014. Office of Prevention, Pesticides, and Toxic Substances, Washington, DC, 1993.

APPENDIX C

LETTERS

CIa_ LETTERS FOR DEPARTMENT DIRECTOR'S SIGNATURE_TEMPLATE

XXXXX

Mr./Ms.XXXXX XXXXXXX, (or) Ph.D.
Recipient's Title
Company Name
Address
Chicago, IL 60624

Dear

Subject: Long subject lines indent .50-inch from each margin, Justified, No hyphenation, no acronyms or ending punctuation

Subject: Short subject lines are centered within the .50-inch, indented margins

This letter is in response to [complete information]

Body

If you have any questions, please contact [Insert First and Last Name], [Insert job title], at [insert telephone number and/or email address].

Very truly yours,

Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research

TCG:Div.Head:Author:typist
Attachment
cc: or cc/att: X. XXXXXX

TCG: ALL REVIEWERS:AUTHOR:typist

CIa_LETTERS FOR DEPARTMENT DIRECTOR'S SIGNATURE_GUIDELINES

X
X
X
X
X
X
X
X (8 or 9 blank lines)

(Date)

X (3 blank lines before inside address)
X [if letter being sent certified or priority mail, insert information here]
X
Mr./Ms.XXXXX XXXXXXX,(or) Ph.D. (See Page 9)
Recipient Title
Company Name
Address
Chicago, IL 60624
X [if letter being Faxed or Emailed, insert Fax # or Email address here leave 1 blank line after]
Dear Mr./Ms./Dr. XXXX:
X

Subject: Letters Department Director's Signature [Long subject lines indent .50-inch from each margin-Justified, No acronyms or ending punctuation]
Subject: [Short subject lines are centered within the .50-inch, indented margins]

X

OPENING: This letter is in response to [complete information]. Xxxxxxxx xxxxxxxxxxxxxxxxxxx

BODY: [Compose letter as necessary following basic guidelines indicated] xxxxx xxxxxxxxxxxxxxx

CLOSING PARAGRAPH, If you have any questions, please contact [Insert First & Last Name], [Insert job title], at [insert telephone number and/or email address].

X

Very truly yours,

X
X
X

Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research Department

TCG:DIV HD:AUTHOR:Typist
TCG: REVIEWERS/AUTHOR:typist
Attachment or Enclosure (if required)
cc: X. XXXXX (First Initial, Last Name)
cc/att: X. XXXXXX (No attachment(s) included for cc recipients)

Subject: Repeat Style Used for First Page Subject Line

X
X
Documents prepared for the Department Director's signature do not require bcc: or bcc/att: notations, unless specifically requested.

Note: Letters to Outside Agencies (IEPA) should indicate Department Directors and staff on the original letter and not in a bcc list, especially if the letter will be converted to a Data Report (Appendix E). If the list is long and the cc list will not fit on one page, the typist should contact the Department Director's office for guidance.

Guidelines for Letters for Department Director Signature (Template CI)

Letters prepared for signature by the Department Director are prepared on the current Department letterhead including necessary envelopes or labels, and forwarded to the Department Director's office via the M&R Department courier. Allow sufficient time for the letter to be processed, signed and mailed by the date on the letter.

If printing to the Department Director's office printer, please remove the Reader initial line, the file location notation, and the track changes.

FORMAT: Modified-Block Style with .50-Inch First Line Indent. 11- to 12-point type, Times New Roman font. Single Spaced, Justified, No Hyphenation.1-inch all Margins, 1-inch Header, and .50-inch footer. (To avoid rivers in No Hyphenation mode use only one space between periods so lines are automatically adjusted by the computer.) Approved acronyms are shown on Pages xi – xiv.

When sending Hardcopies, if attachments are large, provide two sets of attachments one for the Signature copy and one for the Reader copy.

DATE/INSIDE ADDRESS: Space down 8-9 lines from the Top 1-Inch Margin before inserting date on 8th or 9th line. This should line up the date on the same line as the Department Director's email address. Leave three blank spaces between date and recipient's name.

The Date, Complimentary Closing, Signature line and Title all begin off-center approximately the 3-inch mark on the top ruler in Word document.

Include the Assistant Director's Initials in the signature line. Signature and Initial (Reader) lines are on the same line. Remove Initial (Reader) line and file location notation for printing. If letter is lengthy, you can reduce font to no less than 11-points. If two or more pages are required, return font size to 12 points. Please keep margins at 1-inch on all sides.

CI

XXXXX

Mr./Ms.XXXXX XXXXXXX, (or) Ph.D.
Recipient Title
Company Name
Address
Chicago, IL 60624

Dear

Subject: CIb_Letters for Other Department Director's Signatures. Long subject lines indent .50-inch from each margin

Subject: Short subject lines are centered within the .50-inch, indented margins

This letter is in response to [complete information].

If you have any questions, please contact [Insert First and Last Name], [Insert job title], at [insert telephone number and/or email address].

Very truly yours,

XXXX XXXXXXXXXX
Director
XXX XXXXX Department

XXX:TCG:Div. Head:Author:typist
Attachment
cc: or cc/att: X. XXXXXX

TCG: ALL REVIEWERS:AUTHOR:typist

X
X
X
X
X
X
X
X (8 or 9 blank lines)

(Date)

X (3 blank lines before inside address)
X [if letter being sent certified or priority mail, insert information here]
X
Mr./Ms.XXXXX XXXXXXX,(or) Ph.D. (See Page 9)
Recipient Title
Company Name
Address
Chicago, IL 60624
X [if letter being Faxed or Emailed, insert Fax # or Email address here leave 1 blank line after]
Dear Mr./Ms./Dr. XXXX:
X

Subject: Letter Guidelines for Other Department Directors [Long subject lines indent .50-inch from each margin-Justified, No acronyms]
Subject: [Short subject lines are centered within the .50-inch, indented margins]

X

OPENING: This letter is in response to [complete information]. Xxxxxxxx xxxxxxxxxxxxxxxxxxx

BODY: [Compose letter as necessary following M&R Department guidelines indicated] xxxxxxxxxxxxxxxxxxx

CLOSING PARAGRAPH, If you have any questions, please contact [Insert First & Last Name], [Insert job title], at [insert telephone number and/or email address].

X

Very truly yours,

X
X
X

Darlene A. LoCascio
Director
Procurement and Materials
Management Department

DAL:DIV HD:AUTHOR:Typist

DAL:DIV HD:REVIEWERS/AUTHOR:typist

Attachment or Enclosure (if required)
cc: X. XXXXX (First Initial, Last Name)
X. XXXXXX (No attachment(s) included for cc recipients)
cc/att: X. XXXXXX (Attachment(s) included)
bcc: X. XXXX (No attachment included) (Only add a bcc list when requested Do not add
bcc/att: X. XXXXX (Attachment included) it when it is not required)

Note: (bcc or bcc w/att list indicated on initial [reader] copy only) If a bcc list is used, typist should submit two copies of the original letter, one copy with the cc list and a second copy with the combined cc and bcc lists to be used for distribution. (The cc and bcc list are also shown on the M&R Department Reader's copy.)

Guidelines for Letters for Other Departments (TEMPLATE CIb)

Letters prepared for signature by other Department Heads are prepared for printing on the appropriate Department's letterhead. When letterhead is unavailable to the typist the letter is forwarded electronically to the Department Director's office for printing.

Electronic copies of letters sent to the Department Director's office for printing must be in final, print ready format. (No track changes, Reader initials, or file folder location notations.) Suggestion: print out a sample on "draft M&R Department letterhead" to review for page set-up, positioning, etc.

Include Labels and Envelopes for mailing from the appropriate Dept. Director's Office

FORMAT: Modified-Block Style with .50-Inch First Line Indent, 11-12-point Times New Roman font. Single Spaced, Justified, No Hyphenation.1-inch all Margins, 1-inch Header, and .50-inch footer. (In order to avoid rivers in the text in no hyphenation mode insert only one space between periods, so lines are automatically adjusted by the computer.) When sending hardcopies, if attachments are large, provide two sets of attachments; one set for the original letter and one set for the Reader copy of the letter.

DATE/INSIDE ADDRESS: Space down 8-9 lines from Top 1-Inch Margin before inserting date line. This should line up the date on the same line as the Dept. Director's telephone/fax number. Leave three blank lines between date and recipient's name.

The Date, Complimentary Closing, Signature line and Title all begin off-center at the 3.25-inch mark on the top ruler in Word document.

Include the Division Head's initials in the signature line. Signature and Initial (Reader) lines are on the same line. Remove Initial (Reader) line for printing.

If letter is lengthy, you can reduce font to no less than 11-points. If two or more pages are required, return font size to 12 points. Please keep margins at 1-inch on all sides.

CIb

CII_ LETTERS FOR EXECUTIVE DIRECTOR'S SIGNATURE_TEMPLATE

XXXXX

Mr./Ms.XXXXX XXXXXXX, (or) Ph.D.
Recipient Title
Company Name
Address
Chicago, IL 60624

Dear :

Subject: Long subject lines are indented .50-inch from each margin, no hyphenation, no acronyms, no ending punctuation

Subject: Short subject lines are centered within the .50-inch, indented margins

This letter is in response to [complete information].

Body

If you have any questions, please contact [Insert First and Last Name], [Insert job title], at [insert telephone number and/or email address].

Very truly yours,

David St. Pierre

TCG:Author:typist
Attachment
cc: or cc/att: X. XXXXXX

(8 or 9 blank lines)

(Date)

X (3 blank lines before inside address)
X
X
Mr./Ms.XXXXX XXXXXXX, (or) Ph.D. (See Page 9)
Company Title
Company Name
Address
Chicago, IL 60624
X
Dear
X

Subject: **Subject line,** indent .50-inch from each margin, justified text, no hyphenation, no acronyms, no ending punctuation

Subject: Short subject lines are centered within the .50-inch, margin indents

OPENING: This is in response to your [insert type of correspondence] to the Metropolitan Water Reclamation District of Greater Chicago (District), dated XXXX, regarding [Complete information]. Approved Acronyms for Letters are shown on Pages xi – xiv.

BODY:

CLOSING, If you have any questions, please contact [Insert First & Last Name], [insert job title], at [insert telephone number and email address].

Very truly yours,

David St. Pierre
(DO NOT INSERT TITLE)

TCG:Author:typist
Attachment/Enclosure (if any)

TCG: ALL REVIEWERS:AUTHOR:typist

(continued on next page)

Subject: Repeat Style Used for First Page Subject Line

X
X
cc (or cc/att.): Outside Counsel, Company, Body of Government, or MWRD Director's, etc.
bcc (or bcc/att.): X. XXXX
X. XXXXXX

Submit two signature copies of the letter when bcc's are included. One copy for the cc list and one copy for the combined cc and bcc list. The ED's office distributes letters. All names should be included on the Reader copy.

If the authoring Section requests bcc's to Section staff, they may be listed on the Reader copy and upon finalization of the letter, the Section's typist will be responsible for distributing the letter to those indicated.

Additional Guidelines for Ed Signature Letters (Template CII)

Printing: The ED's letterhead is maintained in the Department Director's office, contact the office to arrange to print the letter to the office printer at \\xenprint021\RND_DIR_SEC_EC. Please print a draft copy of the letter (using a photocopy of similar letterhead) prior to printing to the Department Director's office to ensure proper placement of date and all text. Call prior to printing so the printer and letterhead can be prepared for printing.

Since the letters are distributed by the ED's office. The bcc list should only include Department Heads, Assistant Directors and required staff. If **attachments** are large, provide one set of attachments for everyone on the cc and bcc/att: lists. An extra set of attachments should be included with the Reader copy also.

Format: Modified-Block Style, 11-12-point Times New Roman font, .50-inch first line indent. Single Spaced, Justified, No Hyphenation.1-inch all Margins, 1-inch Header, and 0.5-inch footer. (To avoid rivers in the text in No Hyphenation mode, insert only one space between periods so lines are automatically adjusted by the computer.) Enumerated/bulleted items indented .50-inch from both margins. Insert **continuation page numbers** within the Header area at Center position. (No page numbers in footer.) **Include Envelopes and/or Labels** for mailing from Executive Director's Office.

Date, Complimentary Closing, and Signer's Name and Title all begin off-center (3.25-inch mark on top ruler in Word document). Date should line up the ED's telephone/fax number. (Tip: Insert 8-9 blank lines down from the top 1-inch margin and insert the date.)

Items sent to any government agency located in Springfield, IL are sent **PRIORITY MAIL**; therefore, please include this notation above the inside address and include an envelope and/or one or two District shipping labels for mailing from the Department Director's office.

Signature and Initial train on the same line: Note do not include ED's initials on either line.

SAMPLES

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, Illinois 60611-3154 f: 312.751.5194 312.751.5190

BOARD OF COMMISSIONERS
Mariyana T. Spyropoulos
President
Barbara J. McGowan
Vice President
Frank Avila
Chairman of Finance
Michael A. Alvarez
Timothy Bradford
Cynthia M. Santos
Debra Shore
Kari K. Steele
Patrick D. Thompson

THOMAS C. GRANATO, Ph.D., BCES
Director of Monitoring and Research
thomas.granato@mwrd.org

COPY

September 17, 2015

Mr. Douglas J. Yeskis
Director
United States Department
of the Interior
U. S. Geological Survey
Illinois Water Science Center
405 North Goodwin Avenue
Urbana, Illinois 61801

Dear Mr. Yeskis:

Subject: No-Cost Extension of Purchase Order Number 3082128 – Evaluation of Groundwater Monitoring Wells

The Metropolitan Water Reclamation District of Greater Chicago approves your request for a no-cost extension of the subject purchase order from the current end date of July 31, 2015, to a new projected end date of December 31, 2015.

If you have any further questions concerning this matter, please contact Dr. Lakhwinder Hundal, Supervising Environmental Soil Scientist, at 708.588.4201.

Very truly yours,

Tom Granato

Thomas C. Granato
Director
Monitoring and Research

TCG:LH:kq

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, Illinois 60611-3154 f: 312.751.5194 312.751.5190

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Timothy Bradford
Cynthia M. Santos
Debra Shore
Kari K. Steele
Patrick D. Thompson

THOMAS C. GRANATO, Ph.D., BCES
Director of Monitoring and Research
thomas.granato@mwrd.org

September 3, 2015

COPY

Mr. Morgan Richardson
Chicago Account Manager
Agilent Technologies, Inc.
2850 Centerville Road
Wilmington, DE 19808-1610

Dear Mr. Richardson:

Subject: Agreement to Furnish, Deliver, and Install a Gas Chromatograph with Electron Capture Detector System, Agilent Technologies, Inc. (Requisition 1395268)

Enclosed are four original agreements and affidavit forms for signature and completion by your company. The fully executed agreement for $. will be mailed directly to you by the Metropolitan Water Reclamation District of Greater Chicago's (District) Procurement and Materials Management Department at a later date.

Please take note of the following requirements to execute an equipment agreement with the District:

1. Four (4) original agreements signed by the President and Secretary of your firm (Page 14 of the agreement). The District requires a corporate resolution if the agreements are signed by anyone else.

2. Completion and notarization of four (4) original affidavit forms (Pages 11-12 of the agreement). A corporate resolution is required when the Affiant or Attestant is not the president or secretary of the firm. All questions must be answered or marked "N/A" if they don't apply.

3. Insurance Certificate

   a. An insurance certificate that meets the limits of coverage and includes the following language shown on Page 8 of the agreement: "*The Water Reclamation District, its Commissioners, Officers, Agents and Employees are additionally insured under the business auto and commercial general liability insurance.*"

Subject: Agreement to Furnish, Deliver, and Install a Gas Chromatograph with Electron Capture Detector System, Agilent Technologies, Inc. (Requisition 1395268)

b. Include the purchase requisition and subsequent purchase order numbers in the certificate.

c. Complete the Workers' Compensation box.

d. Complete the "General Aggregate per Project" box.

4. Authority to conduct business with the State of Illinois. Contact the Illinois Secretary of State at www.cyberdriveillinois.com to obtain a certificate of good standing.

Also, as indicated in Article 9 and Article 17, the District's agreement is the primary controlling document throughout the duration of the agreement period. Therefore, if there is a conflict between Agilent's terms and conditions and the District's agreement, it is the District's position that our agreement controls.

Please return the requested documents and your insurance certificate to me ASAP. If you have any questions regarding this matter, you may contact Ms. Karen Bradley at (312) 751-4014 or Karen.Bradley@mwrd.org.

Very truly yours,

Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research

TCG:MPC:KB:mh
Enclosures
cc/enc: Coolidge
Shillin
Stark
Bradley

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312.751.5600

DARLENE A. LoCASCIO
Director of Procurement and Materials Management
312.751.6600 f: 312.894.2011
darlene.locascio@mwrd.org

COPY

July 9, 2015
(REVISED)

Mr. David S. Koch, PE
Black & Veatch Corporation
101 North Wacker Drive, Suite 1100
Chicago, Illinois 60606
T: 312-683-7829 / KochDS@bv.com
F: 312-346-4781

Dear Mr. Koch:

Subject: 15-RFP-12, Professional Services for the Development of Hydraulic and Process Models for the Calumet Water Reclamation Plant - BAFO

As provided in the Metropolitan Water Reclamation District of Greater Chicago's (District) Request for Proposal document for 15-RFP-12, please be advised that your unqualified Best and Final Offer (BAFO) to provide the requested services for the development of Hydraulic and Process Models must be faxed to my office at (312) 751-6607 and received no later than 12:00 P.M., on July 15, 2015. Enclosed is a sheet clarifying the tasks listed in the RFP to assist with developing your BAFO. **BAFOs received after this specified date and time are considered non-responsive and will be rejected.** The original, signed hard copy of your BAFO must be delivered shortly thereafter to:

Darlene A. LoCascio
Director of Procurement and Materials Management
Metropolitan Water Reclamation District
of Greater Chicago
100 E. Erie Street, 5th Floor
Chicago, IL 60611

(***DO NOT*** *place your BAFO in the District's bid depository safe located in the lobby of the Main Office Building as this may cause your BAFO to be received after the due date stated above and therefore considered "late". Late BAFOs cannot be accepted and shall be deemed non-responsive and rejected.*)

Please keep in mind that your best and final offer must have no conditions attached, and must not change the scope of services as indicated in your response to the Request for Proposal.

Subject: 15-RFP-12, Professional Services for the Development of Hydraulic and Process Models for the Calumet Water Reclamation Plant - BAFO

A Best and Final Offer form is enclosed. Thank you for your interest in providing services to the District.

Sincerely,

Darlene A. LoCascio
Director of Procurement and
Materials Management

DAL:TCG:DS:cpc
Enclosures

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312.751.5600

DAVID ST. PIERRE
Executive Director

312.751.7900 f: 312.751.7926
david.stpierre@mwrd.org

COPY

February 6, 2015

Mr. Kurt Penn
CEO
Good Foods Group
10100 88th Avenue
Pleasant Prairie, Wisconsin 53158

Dear Mr. Penn:

Subject: Waiver of Penalties and Interest Associated with User Charges for the Good Foods Group Facility Located at 6851 West Irving Park Road, Chicago, Illinois

The Metropolitan Water Reclamation District of Greater Chicago (District) makes reference to a meeting on January 29, 2015, attended by Mr. John Fitzgerald, of Good Foods Group (GFG) and Dr. Thomas Granato, Messrs. Mathew Joseph, Edwin Ignacio, Michael Goldrich and Christopher Thomann, of my staff. At the meeting, Mr. Fitzgerald requested that the District waive the penalty and interest assessed to GFG for failure to submit the 2013 User Charge Annual Certified Statement (RD-925) and Net User Charge (NUC) liability for the subject facility.

In the absence of the RD-925, the District calculated GFG's 2013 NUC to be $ based on the biochemical oxygen demand and suspended solids sampling results, and incoming water volume obtained by the District at the subject facility. On October 20, 2014, the District issued an invoice to GFG for the past due NUC, $ in penalty for not submitting the 2013 RD-925 and $ in interest for the unpaid NUC. On December 16, 2014, the District received payment of $ from GFG for the outstanding NUC and a request that assessed penalty and interest be waived.

At the January 29 meeting, Mr. Fitzgerald stated that the RD-925 for 2013 was not filed because GFG had recently been classified as a Large Commercial-Industrial User and was new to the User Charge Program and he did not receive the District's notification regarding the classification of GFG as a Large Commercial-Industrial User and its User Charge obligations due to internal mail handling issues. However, Mr. Fitzgerald assured us that, after discussions with District staff, GFG is now fully acquainted with the User Charge reporting and self-

Subject: Waiver of Penalties and Interest Associated with 2013 User Charges for the Good Foods Group Facility Located at 6851 West Irving Park Road, Chicago, Illinois

monitoring requirements and will have no problems in complying with these requirements moving forward.

Based on the good faith efforts by GFG to comply with the District's User Charge requirements during its first year in the program, the District has decided to waive the assessed penalty and interest in connection with your 2013 User Charges and to accept your $ payment on December 16, 2014, towards your 2013 User Charge liability.

If you have any questions in the future, please contact your account representative, Mr. Christopher Thomann, Environmental Specialist, at christopher.thomann@mwrd.org or at 312-751-3017.

Very truly yours,

David St. Pierre

DSP:CT:mjb
cc: Mr. John Fitzgerald (via e-mail)
U27060/#0019

APPENDIX D

NON-ROUTINE DOCUMENTS

COPY

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** May 22, 2015

TO: David St. Pierre
Executive Director

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Request for Approval to Submit an Abstract for the Synergy in Science: Partnering for Solutions Conference at the 2015 Annual Meeting of the American Society of Agronomy, the Crop Science Society of America, and the Soil Science Society of America, November 15 – 18, 2015, Minneapolis, Minnesota

Attached for your approval is an abstract for a paper that Monitoring and Research staff would like to present at the subject meeting. The title of the paper is "Trace Metals in Vegetables Grown in Soil Amended With Exceptional Quality Biosolids." Dr. Kuldip Kumar, Senior Environmental Soil Scientist, will be presenting the paper.

Upon your approval, the abstract will be submitted electronically. The deadline for abstract submission is June 2, 2015.

Funding for attendance at this conference is available in the Monitoring and Research Department's 2015 budget.

APPROVED BY:

David St. Pierre
Executive Director

TCG:KK:cm
Attachment
cc: Granato
Zhang
Cox
Hundal
Kumar

Trace Metals in Vegetables Grown in Soil Amended with Exceptional Quality Biosolids

Kuldip Kumar*, Lakhwinder Hundal, Albert Cox, Heng Zhang, and Thomas Granato
Monitoring and Research Department
Metropolitan Water Reclamation District of Greater Chicago
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ABSTRACT

Biosolids quality, in terms of metal concentration, has improved tremendously after the initiation of industrial pre-treatment programs and promulgation of the 40 CFR Part 503 biosolids regulations (Part 503). However, concerns remain that heavy metals may pose a risk to human health through the consumption of crops grown on soils receiving biosolids as a source of nutrients. Lettuce, zucchini, and tomatoes selected as representative of the major vegetable groups were grown for three years (2011 to 2013) on soil amended with annual application of exceptional quality (EQ) biosolids at two rates of 25 and 50 Mg ha^{-1} to quantify trace metals uptake. The concentrations of all the nine Part 503 regulated metals in the edible portion of all three vegetables were either similar or lower in the biosolids treatments than the control except for Zn, which was higher in zucchini and tomatoes. The concentration of Pb in the 2013 zucchini crop declined with increasing biosolids application rate. Measured concentrations of Cd and Ni in lettuce, tomatoes, and zucchini were significantly lower than the predicted concentrations based on uptake coefficients used in the Part 503 risk assessment. Measured Zn concentration in tomatoes and zucchini was higher than the predicted concentrations. Both measured and predicted concentrations of Cd, Ni, and Zn were far below the safe lifetime concentrations (SLCs) in all the three vegetables, which are considered safe for consumption by home gardeners. Overall, the measured concentrations of trace metals at the highest cumulative biosolids application rate were approximately 54% lower than the respective SLCs. Results from this study show that land application of EQ biosolids does not pose any potential risk to human health through uptake of trace metals in vegetables.

Metropolitan Water Reclamation District of Greater Chicago

Conference / Seminar Travel Authorization Form

COPY

Out-of-District Travel: ○ Yes ○ No **Budgeted:** ○ Yes ○ No

Title of Event:

Events Date(s):

Location:

Date of Departure: **Date of Return:**

Budget Coding:

	(F)		(CI)		(CC)		(FA)		(BRN)
	(F)		(CI)		(CC)		(FA)		(BRN)
	(F)		(CI)		(CC)		(FA)		(BRN)
	(F)		(CI)		(CC)		(FA)		(BRN)

Approval To Attend Is Requested For:

Name	ID#	Job Title

Describe Justification For Trip (use additional sheet if necessary):

Registration Cost:

Additional Fees (i.e., taxis, tours, etc.):

Travel: ☐ Air ☐ Rail ☐ Other

Source: *

Lodging:

Meals:

Total Estimated Cost: $0.00 -

Recommended By:

Supervisor/Section Head Date Division Head Date

Approved By:

Department Head Date

Attachments:

☐ Original to Department Head ☐ Copy - Employee

☐ Copy to P-Card Reconciler / Approver P-card Approver Name

For Commissioners Use Only

Submitted By: Date

Submit request at least five (5) days in advance of travel;
21 days if air reservations needed.

Approved By: President/Vice President/Chairman of Finance Date

* Indicate source of travel quote: attach if available

10FI0308

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

CELLULAR COMMUNICATIONS AUTHORIZATION REQUEST FORM

Completed form is to be submitted to the **Information Technology Department**.

The employee identified below requests a cellular telephone to be paid and used for the purposes of the MWRDGC.

Employee Name: _____ (Please Print) Work Telephone: (____) _____

Employee ID #: _____ Title: _____ Cellular Telephone: (____) _____ (If previously assigned)

MWRDGC Mailing address: _____

Department: _____ Section: _____ Location: _____ (Plant name, Main Office Building (MOB), or MOB Annex)

Position Control Number (PCN): _____

Please Provide Official Business Purpose: _____

Please check the features that are required:

- ☐ Cellular Phone
- ☐ Pager Replacement Phone
- ☐ Smart Phone
- ☐ Other: _____
- ☐ Text Messaging
- ☐ Tethering
- ☐ Cellular Data Air Card

Cellular telephones under the Districts current contract include the following features:

- Free Mobile to Mobile on the Cellular Vendors network
- Call Waiting
- Call Forwarding
- Caller Identification
- Voice Mail
- Three Way Calling

Any use of cellular telephones will be considered an agreement by the employee to abide by the rules and guidelines of the Metropolitan Water Reclamation District of Chicago concerning cellular telephone usage.

Employee requesting cell phone: _____ (Signature) Emp. ID# _____ Date: _____

Employee's Supervisor _____ (Signature) Emp. ID# _____ Date: _____

Department Head: _____ Emp. ID# _____ Date: _____
(*Requires Department Head Approval*): (Signature)

Information Technology Department Approval (*Signatures)*

Director of Information Technology: _____ (Signature) Emp. ID# _____ Date: _____

Senior Telecommunications Specialist: _____ (Signature) Emp. ID# _____ Date: _____

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
INFORMATION TECHNOLOGY DEPARTMENT
COMPUTER ACCOUNT REQUEST

COPY

Submit completed form to: Birute Sonta, Computer Security Analyst, Information Technology Department (ITD)

Employee Name: _____ Anticipated Date of Departure *(Temporary Workers Only):* _____

Employee ID #: _____ Title: _____ Position Control Number (PCN): _____

Work Telephone: _____ Department: _____ (e.g. M&O) Section # : _____ (e.g. 600) Location: _____ (Plant Name, MOB, or MOB Annex)

CHECK SPECIFIC SYSTEM REQUIREMENTS:

Workstation Type: ☐ Thin Client ☐ PC

☐ Windows Network Logon Account

SAP: ☐ New ☐ Reactivated

☐ LIMS *Approved* : _____ *(LIMS Coordinator)*

☐ FAX via E-mail *Approved* : _____ *(Department Head)*

☐ Other:** _____

☐ Other:** _____

☐ Other:** _____

ITD USE ONLY: ***(date and initial each account created)***

Username	Date	Created By
Mailbox:		
All SAP Users Mailbox:		
E-FAX:		

****DO NOT USE THIS FORM TO:**

- **Request access to MMS - Use *MMS Account Request Form* instead**
- **Request changes to SAP Authorizations - Use *SAP Authorization Change Request Form* instead**
- **Request access to specific software programs - Use *Software Installation Request Form* instead**

COMMENTS:

Any use of assigned computer account(s) will be considered an agreement by the employee to abide by the rules and guidelines of the Metropolitan Water Reclamation District of Chicago concerning computer usage and such will only be used for District business.

Employee: _____ (Signature) Emp. ID# _____ Date: _____

Employee Supervisor: _____ Emp. ID# _____ Date: _____

Computer Security Analyst: _____ Emp. ID# _____ Date: _____

Log Date: _____ Logged By: _____

COPY

Metropolitan Water Reclamation District
P-Card Authorization Form

(Use this form for purchases other than vehicle, conference, seminar, and travel expenses)

AMOUNT: _____

PURPOSE: _____

_____

ITEM DESCRIPTION: _____

_____

REQUESTED BY: _____ **I.D. #** _____

PURCHASED BY: _____ **DATE:** _____

BUDGET CODE: _____/_____/_____/_____

Fund/Cost Center/Commitment Item/Functional Area
Ensure budgeted funds are available

BUDGET REFERENCE NUMBER: _____

SUPERVISOR APPROVAL (UP TO $150.00): _____

DEPARTMENT HEAD APPROVAL ($150.00 TO $500.00): _____

EXECUTIVE DIRECTOR APPROVAL (OVER $500.00): _____

P-CARD # (LAST 4 DIGITS): _____

FOR Commissioners Use On Single Purchases Over $500.00:

Submitted By: _____ **Approved By:** _____

President/Vice-President/Chairman of Finance

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
FINANCE DEPARTMENT
EMPLOYEE'S EXPENSE INVOICE

Submitted On		
Month	Day	Year

Use this form for employee reimbursements not made on time sheets.

EMP. NO.

EMPLOYEE NAME (FIRST, LAST) | NAME OF DEPARTMENT | LOCATION

DATE MO/DAY/YR	DESCRIPTION (ATTACH ALL RECEIPTS)	FUND	COMMITMENT ITEM	COST CENTER	FUNCTIONAL AREA	PREPAYMENT PCARD	AMOUNT PAID BY EMPLOYEE
	Itemized Totals					$0.00	$0.00

RECAPITULATION

FUND	COMMITMENT ITEM	COST CENTER	FUNCTIONAL AREA	PREPAYMENT PCARD	AMOUNT PAID BY EMPLOYEE
	Recapitulation Totals			$0.00	$0.00

Certified Correct:

Total Expenses $0.00

Employee Date

Checked and Approved: | **Approved:** | **Entered By:**

Supervisor/Section/Subsection Head/Date | Department Head/Division Head/Date | Payroll Section/Date

For Commissioners Use Only:

Submitted By: _____ **Approved By:** _____ _____

President/Vice-President/Chairman of Finance Date

Date Submitted: _____

#07FI0308

APPENDIX E

REPORTS

APPENDIX E

COMPONENTS FOR MONITORING AND RESEARCH DEPARTMENT REPORTS

Though textual matter will vary within each report, certain common components are necessary in order to complete a report, or document, for posting on the District Website, i.e. Report Cover page, Title page, Table of Contents, etc. (Front Matter of Report). The report type will determine the subject content of the report (Body), and the Appendices (Back Matter of Report) may include text, tables, figures, charts, etc. Listed below are the components necessary to complete a report, or convert a manuscript, letter, memorandum, or technical memorandum into a report.

	Report Type					
Required Components	**EI[1]**	**EII[2]**	**EIII[3]**	**EIV[4]**	**EV[5]**	**EVI[6]**
Blue Report Cover Page	X	X		X*	X	X
Report Title Page	X			X*	X	X
Table of Contents	X			X*		
List of Tables	X			X*		
List of Figures	X			X*		
List of Acronyms	X			X		
Acknowledgement	X			X		
Disclaimer	X			X		
Summary	X			X		
Appendices, if required	X			X*		
Other Components						
Modified Title Page		X				
Foreword and/or Disclaimer		X			X	X
Modified Title Headings		X	X			X
Special Logo			X			
Special Formatting		X	X	X*		X

[1] EI – Research Reports.
[2] EII – Manuscript Reports.
[3] EIII – Bulletin Brochures.
[4] EIV – Monitoring Reports (*Regulatory Agency Letters Converted to Reports).
[5] EV – Memorandum Reports.
[6] EVI – Technical Memorandum Reports.

APPENDIX E

E0_ REPORT COVER PAGE LAYOUT FORMATTING_GUIDELINES

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-

TITLES ON COVER AND TITLE PAGES SHOULD BE CENTERED WITHIN THE MARGINS IN ORDER TO ACHIEVE AN ATTRACTIVE APPEARANCE

OCTOBER 2015

Comment [s1]: MWRD Logo

Comment [s2]: Arial Black, 20-Point, Type, Bold and Italic. Single Spaced

Comment [s3]: Arial 14-Point Type, Bold and Italic

Modify for appropriate report type-

Comment [s4]: Arial, 14-Point type, Bold and Italic, Double Line Spacing

Comment [s5]: Arial, 14-Point Type, Bold and Italic

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

Comment [s6]: Title Page Logo Box: First Line, Arial, 14-Point Type, Bold and Italic. Single Space
Second Line, Times New Roman, 12-Point type, Bold and Italic
Single Line Spacing.
Page Borders on Cover Page and Title Page

TITLES ON COVER AND TITLE PAGES SHOULD BE CENTERED WITHIN THE MARGINS IN ORDER TO ACHIEVE AN ATTRACTIVE APPEARANCE

Comment [s7]: Times New Roman, 12-Point Type, Bold, 1.50-inch line Spacing. All Caps

By

Comment [s8]: Times New Roman, 12-Point type, Bold. Small "y" in By

Author
Title

All Other Authors and Reviewers Individually
Titles

Assistant Director's Name
Division Name

Comment [s9]: List contributors

Comment [s10]: Times New Roman, 12-Point Type, Bold, Single Line Spacing.

Monitoring and Research Department
Thomas C. Granato, Director

October 2015

Comment [s11]: Times New Roman, 12-Point type, bold, Single Line Spacing.

APPENDIX E

EI_RESEARCH AND MONITORING REPORTS COVER PAGE_TEMPLATE

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-XX

CONTROLLED SOLIDS DISTRIBUTION PROGRAM:

TREND OF BIOSOLIDS DISTRIBUTED

OCTOBER 2015

APPENDIX E

EI_RESEARCH AND MONITORING REPORTS COVER PAGE_TEMPLATE

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

CONTROLLED SOLIDS DISTRIBUTION PROGRAM: TREND OF BIOSOLIDS DISTRIBUTED

By

Olawale Oladeji
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Lakhwinder Hundal
Supervising Environmental Soil Scientist

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Environmental Monitoring and Research Manager

Heng Zhang
Assistant Director of Monitoring and Research

Monitoring and Research Department
Thomas C. Granato, Director

XXXX 2015

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

EI AND EIV_RESEARCH AND MONITORING REPORTS-GUIDELINES

X
X

Style and Spacing

X

One-column, single-spaced, first line indented .50-inch. Enumerated text indented .50-inch on each margin. Report formatting and content guidance is shown on Pages 27-33 and 39 and Appendix E0.

X
X

Font and Margins

Times New Roman 12-point size font. Top, bottom, left and right margins set at 1 inch, justified with hyphenation. Headers are one inch. Footers are set at .50 inch. Refer to Page 7 for pagination information.

Table of Contents, Acknowledgement, Disclaimer, Etc. (Front Matter)

The redesigned M&R Department report format; will include a List of Acronyms, which should be included in Research and Monitoring Reports. Insert it after the List of Figures and before the Summary/Abstract page. The front matter of reports (up to the Introduction page) are numbered in Roman Numerals.

Report Text (Body) and Appendices (Back Matter)

The body of the report is numbered in Arabic Numbers, while the Appendices are numbered in a combination of Roman Numerals and Arabic Numbers. A cover page is inserted before each Appendix.

OCTOBER 2015

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

Report Title Headings

FIRST-ORDER HEADING These begin a new page and are centered across the entire page in boldface type with all capital letters. Leave two blank lines after a first-order heading. Guidelines for all Heading styles are shown in the Style Guide on Pages 11 and 12 and in Appendix F.

Second-Order Heading

Second-order headings start flush with the left margin, on a line by itself. Type second-order headings in boldface, upper and lowercase. Insert two blank lines before the heading if it follows plain text or a second-, third-, or fourth-order heading. Leave one blank line between heading and paragraph.

Third-Order Heading. Third-order headings begin a paragraph and is immediately followed by text on the same line. Indent the heading .50 inch from the left margin. Type in boldface, upper and lowercase text. The third-order heading should be followed by a period. The text begins 1 or 2 spaces after the punctuation (maintain consistency). Insert one blank line before the heading if it follows plain text or a second-, third-, or fourth-order heading. Leave one blank line after paragraph.

Fourth-Order Heading. Fourth-order headings begin a paragraph and is immediately followed by text on the same line. Indent a fourth-order heading .50 inch from the left margin. Type in italics upper and lowercase text, not boldface. Fourth-order headings should be followed by a period. The text begins 1 or 2 spaces after the punctuation (maintain consistency). Insert one blank line before the heading if it follows plain text or a second-, third-, or another fourth-order heading. Leave one blank line after fourth-order paragraph.

Bulleted and Enumerated Items

Bulleted, numbered, or lettered items are indented .50 inch from both the left and right margins. (Numbered or lettered items should not be enclosed in parentheses.) Type should be indented .25 inches from the bullet, number, or lettered item with one blank line (12 points) above and below the list as a whole. If the list contains more than one item, leave a blank line (12 points) between all items in the list. If the item continues onto a second line, indent it so it begins under the first word in the line above. Spacing between items can be reduced to 6-point type if document or report is long. See Enumerated Text guidance shown in Appendix F.

Tables and Figures

Follow current formatting for Tables and Figures shown in Appendix F.

Monitoring and Research Department
Thomas C. Granato, Director **October 2015**

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 14-58

RE-EVALUATION OF LOCAL PRETREATMENT LIMITS

December 2014

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

RE-EVALUATION OF LOCAL PRETREATMENT LIMITS

By

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Senior Environmental Soil Scientist

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Thomas C. Granato
Director of Monitoring and Research

Monitoring and Research Department
Thomas C. Granato, Director

December 2014

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LIST OF ACRONYMS

District	Metropolitan Water Reclamation District of Greater Chicago
H_2S	hydrogen sulfide
HASMA	Harlem Avenue Solids Management Area
LASMA	Lawndale Avenue Solids Management Area
M&O	Maintenance and Operations
M&R	Monitoring and Research
ppbv	parts per billion by volume
RASMA	Ridgeland Avenue Solids Management Area
SDAs	solids drying areas
SDS	solids drying site
SPS	solids processing site
WRP	water reclamation plant

INTRODUCTION

The General Pretreatment Regulations of the Code of Federal Regulations (40 CFR Part 403) require that each Control Authority develop an approved pretreatment program. Each Control Authority must develop and enforce local limits to protect against pass-through and interference, which may be caused by industrial discharges to the publicly owned treatment works or water reclamation plants (WRPs) under its jurisdiction. The Metropolitan Water Reclamation District of Greater Chicago (District) re-evaluates its local limits to ensure a firm technical basis and adjust to changing conditions. Under this requirement, the District must review the adequacy of discharge limits and establish additional standards, if necessary.

The District operates seven activated sludge WRPs. The seven WRPs are the Calumet WRP, John E. Egan (Egan) WRP, Hanover Park WRP, James C. Kirie (Kirie) WRP, Lemont WRP, Terrence J. O'Brien (O'Brien) WRP and Stickney WRP.

The District operates anaerobic sludge digestion at four WRPs (Calumet, Egan, Hanover Park and Stickney). The Calumet, Egan, Hanover Park, and Stickney WRPs process the sludge from their own primary and secondary treatment. In addition, the primary and secondary sludge from the O'Brien WRP is piped to the Stickney WRP digester; the Lemont WRP sends its primary and secondary sludge to the Stickney WRP digesters via truck, and the secondary sludge from the Kirie WRP is piped to the Egan WRP digesters.

The local limits are intended to protect water quality, sludge quality, the biological integrity of WRPs, worker health and safety, the collection system, and air quality. Each of the District's seven WRPs is evaluated individually with regard to these issues. The District wishes to maintain uniform local limits throughout its jurisdiction, so the most stringent limit for any pollutant of concern (POC) at any single WRP is used as the limiting concentration for that pollutant throughout the District's service area. This study is a comprehensive re-evaluation for each of the District's seven WRPs to assess the needs of updating existing or establishing new local limits.

The POCs are identified for each WRP. The data collection strategy and analyses of data quality are reported. The District takes into account site-specific conditions, including National Pollutant Discharge Elimination System (NPDES) permit limits and compliance, receiving water quality, biosolids quality, and potential biological inhibition. The development of local limits are based on the methodology in the Local Limits Development Guidance (USEPA, 2004a), using maximum allowable headworks loading (MAHL). The historical influent loading data is evaluated and compared to the MAHL. In each case, the POCs technically based determinations and the historical data are evaluated and compared to the current District pretreatment local limits. A uniform allocation method is used within each of the seven service areas. Recommendations for any changes to the current limits are also presented.

DETERMINE POLLUTANTS OF CONCERN

The District's WRPs are required to prohibit industrial user discharges in amounts that result in the violation of water quality based NPDES permit limits. In addition, the District utilizes a toxicity-based approach for the receiving streams based on the State of Illinois Water Quality Standards in cases where there are no applicable NPDES permit limits at the respective WRPs. The District prohibits industrial user discharges in amounts that cause potential violations of biosolids regulations. The evaluation for biological process inhibition is considered, although the District has rarely experienced biological process inhibition at its WRPs. Worker health and safety, collection system problems, and air emissions are also considered. The POCs are identified for each of the District's WRPs. Each WRP is evaluated independently of the other District WRPs. Each WRP has its own NPDES permit, and each has unique operational requirements. Each WRP also has a unique industrial user base. Each WRP is evaluated on the impact of the fifteen national POCs and the additional parameters determined based on the above-mentioned consideration.

National Pollutants of Concern

The 2004 USEPA Guidance recommends screening of fifteen POCs. These are five-day biochemical oxygen demand (BOD_5), ammonia, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, total suspended solids (TSS), and zinc. The screening also includes four additional pollutants (fluoride, phenol, FOG, and total phosphorus) due to the potential concerns of receiving stream water quality standards, collection system problems, and potential NPDES permit limits. Iron is also included in the evaluation based on State of Illinois Water Quality Standards for receiving streams. The POCs are screened at each of the seven District WRPs.

National Pollutant Discharge Elimination System Permit Conditions

The NPDES permits issued to WRPs contain specific effluent limitations and water quality based pollutant limitations. The pollutants contained in the District's NPDES permits are screened with site-specific information for each WRP. The District's seven WRPs have the following pollutant limits. This re-evaluation is being conducted due to new NPDES permit issuance for the Stickney, Calumet and O'Brien WRPs. The new permit limits for these three plants are presented. All units are in milligrams per liter (mg/L).

Calumet Water Reclamation Plant:

NPDES Permit Daily Maximum Limit (mg/L):

1. Ammonia (NH_3-N) seasonal (summer/winter)	5.0/8.0
2. Cyanide (total)	0.30

NPDES Permit Monthly Maximum Limit (mg/L):

hazardous air pollutants and subject to implementation of maximum achievable control technology. Under the guidance, a WRP would be subject to installing maximum achievable control technology if it meets two of the following three criteria:

1. Has a hydraulic capacity greater than 50 MGD.

2. Accepts more that 30 percent industrial waste contribution.

3. Has influent priority pollutant volatile organic chemical (VOC) concentrations greater than 5 mg/L.

None of the District's seven WRPs exceed two of these criteria and thus are not subject to maximum achievable control technology. The pretreatment regulations do not require the adoption of local limits to protect air quality unless the air quality standards associated with the WRP require it. The District evaluates VOC emissions annually using USEPA approved models. The District has found all potential pollutants to be below the threshold of concern.

Biological Inhibition of Water Reclamation Plants

Potential biological inhibition at WRPs is evaluated based on thresholds reported in the 2004 USEPA Guidance Appendices (USEPA, 2004b). The District's WRPs rarely experience biological inhibition. See Appendix Table AIII-1 for the inhibition thresholds used in the evaluation of the activated sludge process. All seven District WRPs are screened for activated sludge biological process inhibition. The District uses both nitrogenous and carbonaceous biological processes in secondary treatment. The anaerobic digestion process inhibition thresholds are shown in Appendix Table AIII-1. The four District WRPs utilizing anaerobic digestion are evaluated for potential disruption to the biological process. The POC loads from other WRPs that send their sludge to these WRPs are included in the evaluation.

Summary of Screening Process

The following tables summarize the POCs for each of the District's seven WRPs. The screening process is site-specific. Each District WRP is evaluated on the POCs indicated in Table 1 through Table 7.

TABLE 8: AVERAGE FLOW DATA FOR YEARS 2010 AND 2011 AT THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO WATER RECLAMATION PLANTS

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
	MGD						
WRP influent	250.5	27.4	9.3	38.4	2.5	235.0	721.0
Industrial	8.3	0.5	0.2	0.9	0.0	1.9	22.6
Domestic[1]	242.2	26.8	9.1	37.5	2.5	233.1	698.4
Receiving Stream 7Q10[2]	12.9	0	0	0	848.6	0	201.0
Receiving Stream 1Q10[3]	0	0	0	0	526.0	0	54.0
Primary and secondary effluent to digesters	0.61	0.20	0.03	n/a	n/a	n/a	2.53
Digester draw-off	0.61	0.21	0.03	n/a	n/a	n/a	2.07

[1]Domestic = WRP influent – Industrial.

[2] 7Q10, refers to the lowest consecutive seven-day streamflow that is likely to occur in a ten-year period.
Source: http://www.isws.illinois.edu/docs/maps/lowflow/images/maps/map2.gif.

[3]Computed by USGS using USGS gage data, WRP flows, and Chicago River Controlling Works flows.

Pollutant Removal Efficiency

Pollutant removal efficiencies at the District WRPs are needed to calculate allowable headworks loading based on effluent criteria.

Site-specific data collected over a period of two years (2010 and 2011) were used. The removal efficiency is the fraction or percent of the influent pollutant loadings which is removed from the liquid stream across an entire WRP. The removal efficiency can also be determined across a specific treatment unit. The mean removal efficiency method as described in the 2004 USEPA Guidance is used (USEPA, 2004a). The removal efficiency (R_{wrp}) for any given conservative or non-conservative pollutant is calculated with Equation 1.

Equation 1: Mean Removal Efficiency

$$R_{wrp} = \frac{L_{inf} - L_{eff}}{L_{inf}}$$

where,

R_{wrp} = removal Efficiency across the WRP, as a Decimal

L_{inf} = Average Influent Load, lbs/day

L_{eff} = Average Effluent Load, lbs/day

Frequently, the measured influent and effluent concentrations are near or less than method detection limits. Consequently, calculated removal efficiencies can be erratic. Where adequate data is lacking to establish a reliable percentage removal, an estimated removal efficiency is used. An estimated removal efficiency is used where more than seventy percent of the samples result in a pollutant concentration below the detection limit. For this purpose, the combined average removal efficiency from the other District WRPs is used as an estimate. This is an acceptable estimate since all of the District's WRPs have the same activated sludge process and operate in the same climate. In cases where there is not enough data for any removal efficiency determination, the values from the 2003 Re-evaluation of Local Limits Report (MWRDGC, 2003) were used. Table 9 summarizes the removal efficiencies for each WRP. The activated sludge inhibition evaluations are based on the pollutant concentrations entering the activated sludge unit. The primary treatment effluents are not typically sampled for metal concentrations at the District's WRPs. The 1987 USEPA Guidance literature values are used to determine estimated pollutant removal of the primary clarifiers (USEPA, 1987). The exception is the Kirie WRP, which does not have primary clarifiers. The removal efficiencies from primary treatment at each WRP are provided in Appendix Table AV-2.

TABLE 15: EFFLUENT WATER QUALITY EVALUATION FOR LEAD

			Water Reclamation Plant						
			Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
Concentration Limit, mg/L[1]	NPDES	Daily Limit	n/a*	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity[2]	n/a	0.0438	0.0470	0.0545	n/a	n/a	n/a
		Acute Toxicity[2]	n/a	0.209	0.224	0.260	n/a	n/a	n/a
		Ind. Aquatic Life Use	0.10	n/a	n/a	n/a	0.10	0.10	0.10
AHL, lbs/day[3]	NPDES	Daily Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Monthly Limit	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	State Water	Chronic Toxicity	n/a	20.07	12.99	29.10	n/a	n/a	n/a
		Acute Toxicity	n/a	95.80	61.75	138.79	n/a	n/a	n/a
		Ind. Aquatic Life Use	348.20	n/a	n/a	n/a	588.4	455.8	1,099
Water Quality Based Allowable Headworks Loading (WQAHL), lbs/day[4]			348.20	20.07	12.99	29.10	588.4	455.8	1,099

TABLE 15 (Continued): EFFLUENT WATER QUALITY EVALUATION FOR LEAD

	Water Reclamation Plant						
	Calumet	Egan	Hanover Park	Kirie	Lemont	O'Brien	Stickney
AAIL, (L_{avg}), lbs/day[5]	41.81	4.56	1.54	6.41	0.40	39.22	315.9
AMIL, (L_{max}), lbs/day[5]	142.4	7.53	4.51	13.94	1.15	75.10	1,242
Actual loading vs. WQAHL							
% L_{avg} /WQAHL[6]	12	23	12	22	< 1	9	29
% L_{max} /WQAHL[7]	41	38	35	48	< 1	16	113
%L_{max}/AHL Acute Toxicity[8]	n/a	8	7	10	n/a	n/a	n/a
Further Local Limit Evaluation Recommended	no	no	no	no	no	no	yes

*n/a = Not applicable.

[1]Concentration limit determined from State of Illinois NPDES permit for each WRP and State of Illinois water quality standards in the respective receiving waters.

[2]Average hardness from applicable receiving waters during 2010 - 2011 was used to calculate quality standards; these standards were converted from soluble to total metal concentration using C_f in Appendix Table A1-3 before calculating the allowable headworks loading (AHL).

[3] AHL (Allowable Headworks Loading) is calculated using equation 2 or equation 3.

[4]WQAHL is the lowest calculated allowable headworks loading for each WRP.

[5]AAIL = Actual Average Influent Loading. Average flow and POC concentration of 2010 and 2011 data are used; AMIL = Actual Maximum Influent Loading. Daily flow and POC concentration of 2010 and 2011 data, when available, are used excluding outliers.

[6]When % L_{avg} /WQAHL is greater than 60 percent, further local limit evaluation is recommended; otherwise none.

[7]When % L_{max} /WQAHL is greater than 80 percent, further local limit evaluation is recommended; otherwise none.

[8]When % L_{max} /WQAHL is greater than 80 percent based on chronic, %L_{max}/AHL Acute Toxicity may be estimated and if < 80%, no limit may be necessary.

loading limits. The current sampling protocol attempts collection from at least 10 percent of all loads discharged per calendar year. The District's hauled waste program may be expanded at a future date to include intake of high-strength wastes for energy production.

Expansion and Growth Allowance

The industrial base within the District's jurisdiction has shown a steady decline since the early 1990s. Since 1996 the number of SIUs has declined 39 percent. Table 66 reflects the actual number of SIUs under the District's jurisdiction from 2007 to 2012.

TABLE 66: SIGNIFICANT INDUSTRIAL USERS

Year	Number of SIUs
2007	407
2008	394
2009	373
2010	363
2011	361
2012	357

The industrial decline as a result of closure and/or relocation has led to a decrease in the WRPs' industrial loading. The urban geographical areas once occupied by industry have been subject to urban gentrification, resulting in an increase in the residential population. According to the United States Census Bureau, the population of the Chicago metropolitan area grew by approximately 350,000 (3.7 percent) between 2000 and 2010. During the same period, the city of Chicago population declined by approximately 200,000 (6.9 percent).

Evaluation of Local Limits for Pollutants of Concern

Arsenic. Arsenic is currently not regulated under a local limit. Arsenic was evaluated at each of the District's seven activated sludge WRPs. The technically based evaluation considered water quality, biosolids quality, and biological inhibition. The allowable headworks loadings were determined for each environmental criterion. The derived AHLs were compared to the average and maximum historical influent loadings. The biosolids arsenic concentrations were compared to the limits established in the 40 CFR Part 503.13 Regulation.

The effluent water quality evaluation for arsenic, Table 10, indicates that it is not necessary to further evaluate the need for a local limit for arsenic at the District's seven WRPs

APPENDIX AI

TABLE AI-1: STATE OF ILLINOIS WATER QUALITY STANDARDS

Pollutant[1]	State Water Quality Standards		
	Indigenous Aquatic Life Use	General Use	
	(mg/L)	Acute Toxicity (mg/L)	Chronic Toxicity (mg/L)
Arsenic	1.0	0.36[2]	0.19[2]
Cadmium	0.15	0.0257 - 0.0323[2,3]	0.00208 - 0.00242[2,3]
Chromium, Trivalent	1.0	1.19 - 1.42[2,3]	0.387 - 0.459[2,3]
Chromium, Hexavalent	0.3	0.016	0.011
Copper	1.0	0.0416 - 0.0506[2,3]	0.0255 - 0.0305[2,3]
Lead	0.1	0.209 - 0.260[2,3]	0.0438 - 0.0545[2,3]
Iron	2.0, 0.5[2]	1.0[4]	n/a
Fluoride	15.0	16.8 - 18.8[3]	4.0
Mercury	0.0005	0.0022[2,3], 0.000012[5]	0.001[2,3]
Nickel	1.0	0.184 - 0.219[2,3]	0.0111 - 0.0133[2,3]
Selenium	1.0	1.0[4]	n/a
Silver	1.1	0.005[4]	n/a
Zinc	1.0	0.267 - 0.318[2,3]	0.0698 - 0.0833[2,3]
Ammonia-nitrogen	0.1[6]	15	3.29 - 4.08[7]
Cyanide (WAD)	n/a	0.022	0.010[8]
Cyanide, Total	0.10	n/a	n/a
Phenol	0.3	0.1[4]	n/a
Fats, oils, and grease	15.0	n/a	n/a
$cBOD_5/BOD_5$	n/a	n/a	n/a
Total Suspended Solids	n/a	n/a	n/a
Total Phosphorus	n/a	n/a	n/a

[1]Standard in total form unless otherwise noted.
[2]Standard in soluble form.
[3]Average hardness from applicable receiving waters during 2010-2011 was used to calculate standard using hardness-based equations presented in 35 IAC Sections 302.208 and 302.407.
[4]Single value standard.
[5]Human health standard.
[6]Standard for un-ionized ammonia.
[7]Average pH and temperature from applicable receiving waters during 2010-2011 was used to calculate total ammonia nitrogen standards using equations presented in 35 IAC Sections 302.212 and 302.412.
[8]Site-specific chronic cyanide standard for Salt Creek, Higgins Creek, and DuPage River.

TABLE AI-2: PARAMETERS USED TO DERIVE WATER QUALITY STANDARDS

WRP	Waterway	Station	2010 – 2011 Averages		
			Hardness (mg/L)	pH	Temperature (°C)
Calumet	Little Calumet River	Halsted Street	249	7.20	15.6
Egan	Salt Creek	Arlington Heights Road	258	7.53	15.2
Hanover Park	West Branch DuPage River	Walnut Lane	276	7.53	16.0
Kirie	Higgins Creek	Willie Road	318	7.63	17.0
Lemont	Chicago San-Ship Canal	Stephen Street	244	7.13	16.2
O'Brien	North Shore Channel	Touhy Avenue	217	7.26	15.7
Stickney	Chicago San-Ship Canal	Harlem Avenue	234	7.19	16.9

APPENDIX E

EII_ MANUSCRIPT REPORT COVER PAGES _TEMPLATE

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MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-XX

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Thomas C. Granato, Director

XXXXX 2015

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FOREWORD

The Metropolitan Water Reclamation District of Greater Chicago (District) recognizes the value of

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The contents of this Manuscript constitute --- at the time of publication, and are subject to change as additional studies are completed and experience is attained, and as the full context of the District's operating environment is considered.

NOTE: TEXT IN THE FOREWORD AND DISCLAIMER WILL VARY DEPENDING UPON THE SUBJECT ADDRESSED IN THE MANUSCRIPT

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THE "BODY" OF THE MANUSCRIPT BEGINS AFTER THIS PAGE AND BEGINS WITH THE ARABIC NUMBER 1

EII SAMPLE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** April 10, 2015

TO: Thomas C. Granato
Director of Monitoring and Research

COPY

FROM: Heng Zhang
Assistant Director of Monitoring and Research

SUBJECT: Submission of Manuscript for *Journal of Environmental Quality* Entitled "Steel Mill Slag Brownfield Reclamation Using Biosolids and Sediments: 2. Leaching of Environmental Stressors"

Attached for your review and approval is a manuscript entitled "Steel Mill Slag Brownfield Reclamation Using Biosolids and Sediments: 2. Leaching of Environmental Stressors." The manuscript has also been submitted for review to the *Journal of Environmental Quality (JEQ)* to meet the submittal deadline for a special issue.

If approved, the manuscript will be revised to include yours and JEQ comments and re-submitted electronically to *JEQ*.

APPROVED BY:

Thomas C. Granato
Director of Monitoring and Research

HZ:AC:LH:OO:cm
HZ:OO:cm
Attachment
cc: Cox
Hundal
Oladeji

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-XX

MANUSCRIPT REPORT

STEEL MILL SLAG BROWNFIELD RECLAMATION USING BIOSOLIDS AND SEDIMENTS: 2. LEACHING OF ENVIRONMENTAL STRESSORS

XXXXXXXXX 2015

Steel Mill Slag Brownfield Reclamation Using Biosolids and Sediments: 2. Leaching of Environmental Stressors.

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Additional Keywords: Groundwater, leaching, brownfields, remediation, pollutants,

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DISCLAIMER

The contents of this manuscript constitute the state of knowledge and recommendations developed by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) at the time of publication and are subject to change as additional studies are completed. Mention of proprietary equipment in this report does not constitute endorsement by the MWRDGC.

ABSTRACT

Abandoned steel manufacturing sites, such as the former U.S. Steel Southworks (USX) site in Chicago, are often characterized by soils with slag that require remediation to support and sustain vegetation. Capping slag material using biosolids blended with locally available dredged sediments could offer an economical remediation option; however, uncertainty about environmental stressors leaching from the amendments needs to be evaluated. Field-scale plots were established at the USX site located in close proximity to Lake Michigan, Chicago, Illinois, to evaluate the environmental impacts of capping a steel mill slag brownfield with mixtures of biosolids and dredged sediment at four rates of biosolids (0, 25, 50, and 100 % v/v) with and without clay lining (to simulate typical B-horizon in soil). Water samples collected during the 4-year study period from lysimeters and wells located in the plots, remote location 60 m from the plots, and three locations in Lake Michigan show that P, trace metals, and most nutrient elements did not migrate from the amendments with percolating water. The highest concentrations of NO_3-N (>400 mg L^{-1}) were observed in subsurface water from the 50 and 100% biosolids amendments during the first 12 months after amendments were applied, and then declined to less than 25 mg L^{-1} once the vegetation was established. Concentrations of As, Cd, Cr, Cu, Hg, Ni, Pb, Sb, and Zn in subsurface water of the amended plots and water from Lake Michigan were below state regulatory limits for groundwater. Only 12 out of the 111 organic priority pollutants analyzed were detected and occurred in less than 1% of the samples, and concentrations were close to analytical detection limits. The results from this study show that capping brownfields with biosolids amended sediments had a minimal impact on groundwater or nearby surface water.

INTRODUCTION

Brownfields are abandoned or under-utilized industrial and commercial facilities where environmental contamination is a challenge to expansion or redevelopment. Many brownfields in the United States are in urban areas and contribute little or no value to the surrounding neighborhoods. Such sites are often characterized by elevated concentrations of heavy metals that can threaten ecosystems (Navarro et al., 2008). Urban population pressure and shortage of land are encouraging the remediation of brownfields.

When land applied, biosolids have been successfully used in the restoration of unproductive soils such as mine lands (Roberts et al., 1988a, 1988b; Basta et al., 2001; Brown et al., 2003; Trlica and Brown, 2013). Biosolids reduce the solubility and bioavailability of heavy metals and provide organic matter and essential plant nutrients to improve soil fertility, which enhances the establishment of vegetation and reduces wind and water erosion. Successful remediation with biosolids prompted the U.S. Environmental Protection Agency (USEPA) to recommend the use of residuals-based amendments to reclaim disturbed lands (Allen et al., 2007; USEPA, 2012).

Industrial operations, such as smelting of ores, often emit metals, such as Pb, Zn, Cd, Cu, and As, to surrounding areas and contribute to the creation of brownfields (Friesl et al., 2006; Pusz, 2007). Unlike organic contaminants, the metals do not degrade and are less mobile in soil. The former U.S. Steel Southworks (USX) site in Chicago, Illinois, is a typical brownfields created from industrial operations and is characterized by deep, heterogeneous and highly porous deposits of steel slag, and has been barren for decades because of the inability of slag materials to support vegetation. An economical and sustainable option for remediation of the USX site to support and sustain vegetation is to cap the slag with readily available materials such as biosolids blended with soil materials, such as dredged sediments.

MATERIALS AND METHODS

Treatments and Monitoring Devices. The four-year field plot study conducted by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) in collaboration with the Chicago Park District involved capping a parcel of USX steel mill slag site with mixtures of biosolids and sediments at 0, 25, 50, and 100 % biosolids/sediment(v/v) to establish and sustain vegetation at the site. The research plots were established on an approximately 0.4 ha parcel of slag area at the USX site along Lake Michigan on Chicago's southern lakefront. Two sets of plots, each receiving the same application of biosolids/sediments mixtures, were established on the eastern and western sections of the parcel and separated by small berms. On the east section, a 0.01 m thick layer of clay loam soil was placed on the slag prior to placing the amendments to simulate the heavy textured B-horizon commonly found in most natural soil profiles (referred to as clay-lined plots). On the west section, the amendments were placed directly on the slag (referred to as non-lined plots). Anaerobically digested exceptional quality (EQ) air-dried biosolids from the MWRDGC's Calumet water reclamation plant and dredged sediments from a local waterway were brought to the USX site for *in-situ* blending. Chemical properties of the biosolids and sediment used, as well as detailed experimental setup, are reported in Brose et al. (this issue). The clay liner was included in the study to simulate B-horizon to regulate water movement in the soil profile, which is critical for sustaining vegetation as well as retaining nutrients in the root zone thereby encouraging uptake by plants and reducing nutrients leaching to groundwater. Thus, the study has four biosolids treatments (0, 25, 50, and 100 % biosolids/sediment (v/v)) and two clay lining treatments (with and without clay lining) arranged in a 2 by 4 randomized complete block design.

The biosolids and sediment were mixed at the site and placed at 0.3 m depths for planting turfgrass in the plots. Prior to spreading the amendments, two suction lysimeters (1.5 m and 3 m

deep) and one well (6 m deep) were installed in each plot and at a remote location (approximately 60 m south of the plots) for the purpose of monitoring the subsurface water and groundwater quality (Fig. 1). The 6 m depth below the slag surface was selected because it represents the static water level of Lake Michigan. Sampling wells and lysimeters could not be replicated because of the size of the plots. Also, due to frequent obstructions encountered during drilling, wells were not installed in 50% biosolids clay-lined and 0% biosolids non-lined plots. In addition to the lysimeters and wells, three locations at points approximately 15 m offshore were designated for sampling in Lake Michigan. Two suction lysimeters (1.5 m and 3 m deep) and a well that was 6 m deep are located at a remote area approximately 60 m away from the plots and designated to monitor leachate from an untreated slag site.

Sampling and Analysis. Water samples from the lysimeters and wells in the plots and at the remote location were collected monthly (for analysis of water quality and inorganic constituents) and quarterly (for analysis of organic priority pollutants). Monthly water samples were collected for the entire four-year study period and bimonthly samples for the last six months of the last year from the lysimeters, wells, Lake Michigan, and three remote sampling locations. The water samples were analyzed for pH, electrical conductivity (EC), sulfate (SO_4^{2-}), chloride (Cl^-), total P, nitrate-N plus nitrite-N (designated as NO_3^--N), ammonium-N (NH_4^+-N), and total Kjeldahl N (TKN), and nine trace metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Sb, and Zn). The pH and EC were determined in the samples directly using a pH/EC meter (Rhoades, 1982). The NO_3-N, NO_2-N, and NH_4^+-N were analyzed by Lachat using a continuous flow injection system (Milwaukee, WI). Total P and TKN were also determined by colorimetric method following digestion with H_2SO_4 in the presence of potassium sulfate and mercuric sulfate, (USEPA, 1983). Sulfate was analyzed using ion chromatography and Cl^- by titration.

repeatedly over the period of four years, the observations of any pair of sampling periods could be correlated. Thus, repeated measure analysis (RMA), which is a multivariate analysis of variance (MANOVA), was used to overcome the likelihood of overestimating or underestimating *p*-value that determines the significant differences among the treatment means. The RMA was performed using GLM procedure in SAS (SAS, 2012) with biosolids rates and clay lining as main effects and sampling year as the repeated field. The assumption of sphericity was tested by Mauchly's method (Mauchly, 1940). If Mauchly's method showed that the assumption of homogeneous sphericity is not met (p-value<0.05), then the degrees of freedom were adjusted by using Greenhouse and Geisser (Geisser and Greenhouse, 1958; Greenhouse and Geisser, 1959) method to make the F-ratio more conservative. Multiple comparisons of treatments were done by Tukey's method. All statistical tests were performed at the 5% level of significance.

RESULTS AND DISCUSSION

Soil Analysis. Soil pH in the surface (0 - 0.15 m) and subsurface (0.15 - 0.30 m) depths ranged between 6.0 and 8.2, and was similar in most samples for the 0, 25 and 50% biosolids amendments, but lower ($p<0.05$) for the 100% biosolids amendment (Table 1). Lower pH in the 100% biosolids amendment could result from acidification (McBride, 1995) associated with the higher amount of nitrification during organic matter mineralization in this amendment (Table 1). The pH affects sorption capacity of soils and can affect release of environmental stressors such as metals (Apul et al., 2010) and organic compounds; however, the lowest soil pH observed in this study, which was in the 100% biosolids treatment, is not low enough to affect sorption-desorption processes significantly.

Biosolids application increased soil EC, which was highest in the 100% biosolids amendment and is attributed to higher levels of nutrients and soluble salts supplied by biosolids.

Soil EC dissipated over time and was lower in the last year of the study period than in the first year (Table 1). EC was greater at the 0.15 - 0.30 m depth than at the 0 - 0.15 m depth (data not shown). The decrease in surface soil EC with time and increase with depth can be attributed to the movement of soluble salts from the upper to the lower depths with percolating water.

Soil total P increased with increasing rate of biosolids and showed minimal change over time. Although soil P increased with increased biosolids rate, impacts of P loading on leacheable P is expected to be minimal because of biosolids constituents such as Fe, Al, Mn, and Ca compounds can sorb and retain P in soils (O'Connor et al., 2004; Basta et al., 2005; Hettiarachchi et al., 2006).

The TKN and NO_3-N concentrations in soils also increased with increasing biosolids rate (Table 1). Water-extractable NH_3-N was generally more than ten times lower than the water-extractable NO_3-N concentrations in the soil and was directly related to loading rates of the two N species in the biosolids treatments. The SO_4-S concentrations in the amendments containing bio-solids were highest in the initial sampling but decreased over time, and less than half of the initial soil SO_4-S concentrations were observed in the last year of the study period. The SO_4-S concentrations were highest in the 100 % biosolids treatment for all samples taken during the study. Generally, soil metals increased with increasing rate of biosolids, and the trend remained unchanged during the study period (Table 1), demonstrating that the metals were not appreciably leached from the soil profile or taken up by turfgrass.

SUBSURFACE AND LAKE WATER QUALITY PARAMETERS

General Chemistry. The clay lining had minimal impact on most parameters measured in water samples. Impacts of biosolids rates on pH, EC, SO_4 TKN, and TP in water sampled from 1.5 m, 3 m, and 6 m deep lysimeters and wells during the first and the last year of the study are shown

in Table 2. There was no consistent trend in pH, EC, and SO_4^{2-} in water samples from lysimeters and wells in the biosolids amended plots (Table 2). In this study, the subsurface water chemistry is more likely to be controlled by the properties of the slag than by the amendments used in the plots. The pH, which ranged from 7.0 to 9.0, were similar to the pH in the subsurface water at the remote location. The pH values in all lysimeters and wells were within the 6.5 - 9.5 regulatory pH limits for class II groundwater in Part 630 Section 8 of the IEPA (415 ILCS 5/27) (Illinois Pollution Control Board, 2003). The Biosolids rate had no effect on the EC of subsurface water at the 1.5 m depth and in most cases, differences in the control and biosolids amended plots were statistically insignificant. In some cases, at the 3 and 6 m depths, EC was significantly different among the treatments but there was no trend related to biosolids application rate.

Sulfate concentrations increased with increasing rate of biosolids. Mean concentrations of SO_4^{2-} in water samples ranged from 130 mg L^{-1} to 1,749 mg L^{-1}, and most samples taken from the biosolids-amended plots had SO_4^{2-} concentrations greater than the 400 mg L^{-1} regulatory limit for groundwater (Table 2). Elevated levels of SO_4 were also observed in samples from the 0% biosolids amendment plots (Tables 2) and also in samples from remote locations (data not shown). Biosolids used in this study contained 0.3% total S and may contribute to the elevated SO_4^{2-} in subsurface water samples collected from biosolids-amended plots; however, over half of the sulfur in biosolids is bound in various organic forms (Hundal et al., 2000). Atmospheric deposition can also contribute to the observed elevated SO_4^{2-} in the water.

Nitrogen. Concentrations of inorganic and organic nitrogen species (NH_3-N, NO_2-N, NO_3-N and TKN) in water samples collected from lysimeters during the study are presented in Table 2 and Figures 2 - 5. Mean groundwater concentrations of NO_3-N and TKN were greater in the plots than at the remote location. Generally, the mean concentrations of N species increased in response

but could also be attributed to highly heterogeneous composition of slag materials and variations in permeability of the slag (Muchovej and Rechcigl, 1995).

Concentration trends of NH_3-N in water samples taken from lysimeters are presented in Figure 4. As expected, NH_3-N concentrations were generally much lower than the NO_3-N concentrations (Figures 3 and 4). In the 1.5 m depth lysimeters, NH_3-N concentrations were low (<2 mg L^{-1}), except for a few spikes observed between the first and second years of the study period in the 50 and 100% biosolids amendments. At the 3 m depth, the 100% biosolids plots showed consistently higher NH_3-N concentrations (mostly between 10 and 20 mg L^{-1}) than the 25% or 50% biosolids plots (< 2 mg L^{-1}). The concentrations of NH_3-N in water samples for most of the lysimeters and wells from 25 and 50% biosolids amendments, with only a few exceptions, were generally less than 2.5 mg L^{-1}.

The trends of TKN concentration (Figure 5) were similar to those of NH_3-N, but TKN concentrations were much higher than NH_3-N. The higher concentrations of TKN compared to NH_3-N indicate that a major fraction of the total N in the lysimeters and wells existed as soluble organic N. The TKN concentrations in water samples from lysimeters were similar in plots amended with 0, 25, and 50% biosolids rates; however, higher concentrations were observed in the 100% biosolids plots.

Phosphorus. Mean concentration of total P in the wells and lysimeters ranged from <0.1 to 0.7 mg L^{-1}, which was similar to the concentrations in water samples collected from the remote location. Phosphorus concentrations in most samples were lower than 0.3 mg L^{-1}, except in samples taken from 1.5 m lysimeters installed in the 100 % biosolids plots (Table 2). In general, concentrations of P in most samples taken from subsurface (3 and 6 m) depth were <0.1 mg L^{-1} and similar for the different rate of biosolids. Thus, P in the applied biosolids did not leach from the 25-

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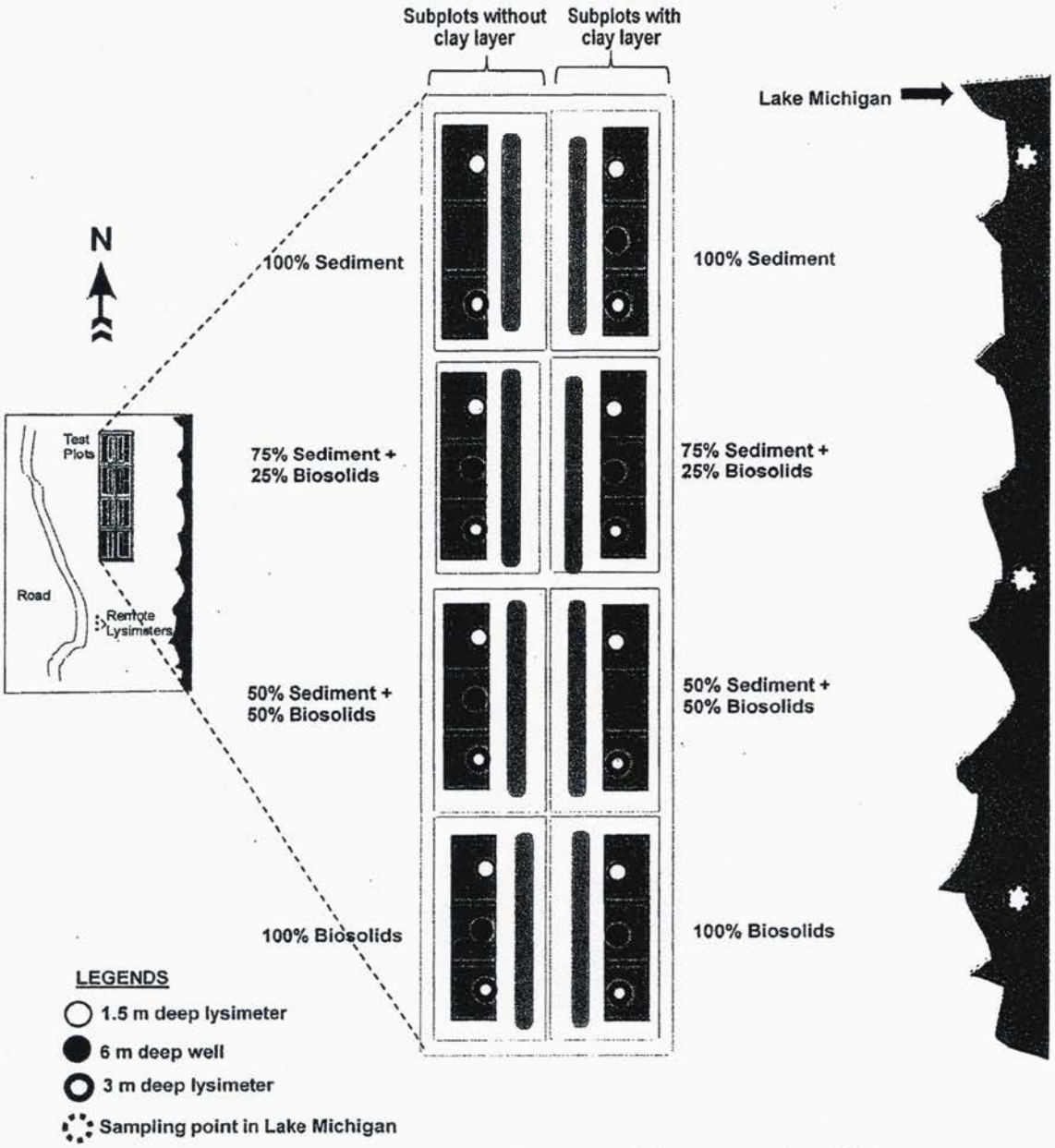
List of Figures



Note: Additional remote lysimeters and well are located 60 meter south of Plots

Figure 1:

EIII_BULLETIN BROCHURE REPORT TEMPLATE

EIII_BULLETIN BROCHURE REPORT GUIDELINES

The special logo template above is used for Bulletins/Brochure Reports that are distributed to the general public to convey a District message. Before beginning, it is suggested that the author contact the Public Affairs Office for assistance in preparing this type of report. These reports are much shorter (1-3 pages) than regular reports. The margins, font, headings, tables and figures follow the Research Report guidelines, with the following exceptions.

Font and Margins

Font is Times New Roman, 12-point type, Block style. Justified with No Hyphenation. Margins for text are 1-inch on each side, top and bottom, with special Header spacing for the District logo and page borders. Footers are .50-inch. Date and page numbers are inside the border, the date at the right margin and page number is centered.

Headings

The bulletin/brochure report should begin with a first-order heading immediately following the District logo, in bold font and centered across the page. The type size of the heading may be larger than 12-point type for readability and eye appeal. Follow basic guidelines for Second-Order headings, except only one blank line is required before and after the Second-Order Heading (Appendix F).

Tables and Figures

When tables or figures are referenced in the text, they are not underlined. Table titles are centered within the text margins and typed in bold, italicized font. The word Table is capitalized with a period following the table number. The title of the table is typed in sentence case (only the first word is capitalized), no periods are used. Borders are placed around the tables/figures. The table title and superscript information are typed on the outside of the border.

Table 1. Trace metal content in the District's biosolids and part 503 EQ standards

[1]Mean of 2005 data. Footnotes end with a period. (Type size in footnotes reduced by 1 point from body type size.)

Protecting Our Water Environment

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

Do Biosolids Contain Metals?

Like other residuals, biosolids contain trace metals (Table 1). The potential for adverse impact on soil and water quality from trace metals present in biosolids are minimal because of regulatory controls on the allowable concentrations in biosolids that are land applied. Biosolids considered suitable for land application must meet United States Environmental Agency's (USEPA) stringent quality standards for metal concentrations under Part 503 regulations, which were promulgated in 1993 (Table 2).

Table 1: Trace metal content in common manures and District's centrifuge cake biosolids.

Trace metal	Cattle slurry	Poultry manure	Swine manure	Biosolids[1]
	----------g/wet ton----------			
As	0.2-0.8	0.5-27	NA	1
Cd	0.1-0.3	0.5	0.3	1
Cu	100-300	200-500	450-900	108
Mo	2-20	NA	20	5
Pb	2-6	10	1	36
Zn	20-200	200-550	50	237

[1]Data for biosolids applied to the Will and Kankakee County research plots; NA – Not available.

In the early 1970s, the levels of cadmium (Cd) and other metals in biosolids were relatively high, due mainly to discharges from the "point source" facilities such as industries. Since the enactment of the Clean Water Act in 1972, industrial pretreatment programs have been implemented to reduce heavy metals in discharges, which resulted in significant reductions in metal content in biosolids (Figure 1).

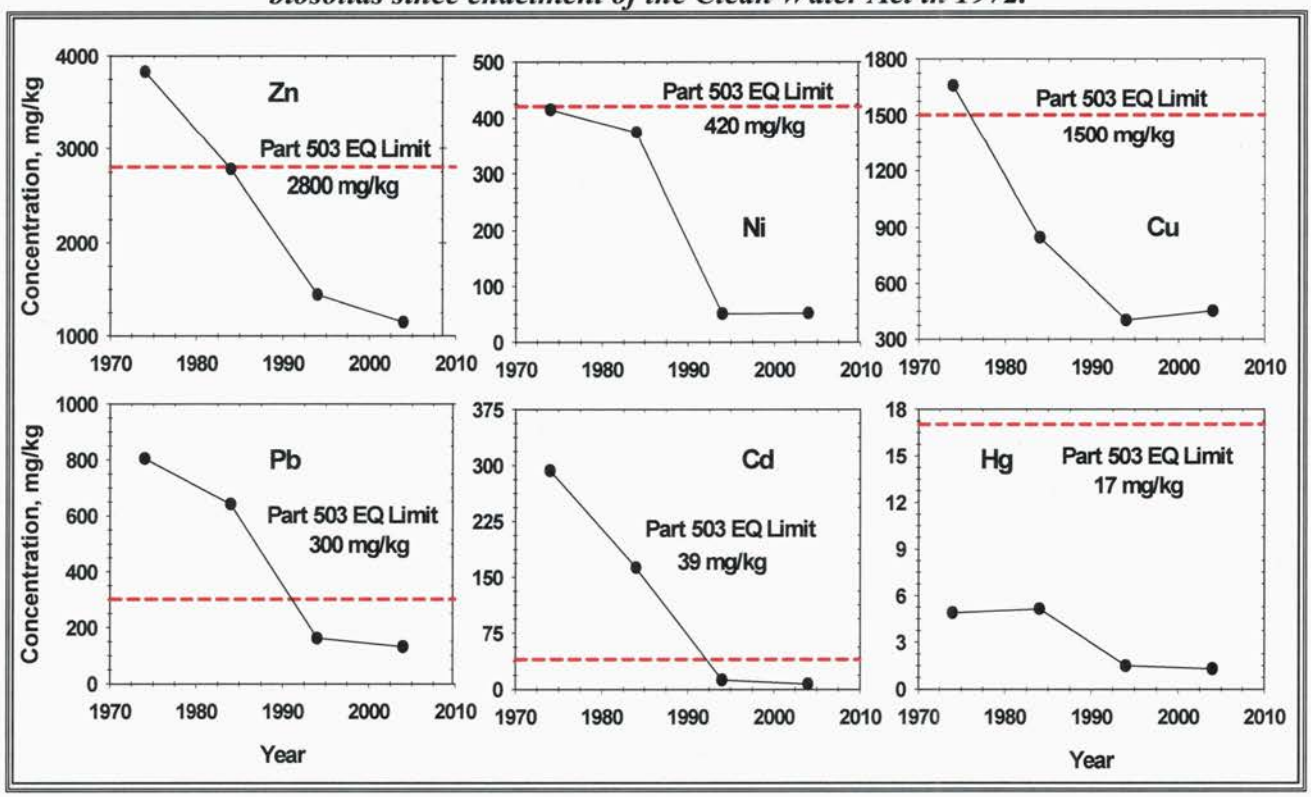
Table 2: Trace metal content in the District's biosolids and Part 503 EQ standards.

Trace metal	Mean Biosolids Concentration[1]		Part 503 EQ Limit
	Stickney WRP[2]	Calumet WRP[2]	
	----------mg/dry kg----------		
As	5	6	41
Cd	4	3	39
Cu	394	429	1,500
Hg	0.98	1.1	17
Mo	15	19	75
Ni	50	36	420
Pb	128	91	300
Se	<1	7	100
Zn	852	952	2,800

[1]Mean of 2005 data from the centrifuge cake biosolids generated at the Stickney and Calumet WRPs.
[2]Water reclamation plant.

To enforce these regulations and to ensure high quality biosolids that can be beneficially utilized, the Metropolitan Water Reclamation District of Greater Chicago (District) supports a Research and Development Department of over 280 professionals including pollution control officers who monitor and limit the discharges of pollutants to our sewers from local industry. As a result, all biosolids generated by the District consistently meet the most stringent metal standards (Exception Quality – EQ) of the Part 503 Rule. On an average, the concentrations of all regulated metals in the District biosolids are 5-50 times lower than the standards of Part 503 Rule (Table 2).

Figure 1. Decreasing trend in concentration (dry weight basis) of trace metals in District biosolids since enactment of the Clean Water Act in 1972.



APPENDIX E

EIV_MONITORING REPORT COVER PAGE_TEMPLATE

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-XX

CONTROLLED SOLIDS DISTRIBUTION PROGRAM:

TREND OF BIOSOLIDS DISTRIBUTED

OCTOBER 2015

APPENDIX E
EIV_MONITORING REPORT COVER PAGE_TEMPLATE

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

CONTROLLED SOLIDS DISTRIBUTION PROGRAM:
TREND OF BIOSOLIDS DISTRIBUTED

By

Olawale Oladeji
Associate Environmental Soil Scientist

Dominic Brose
Associate Environmental Soil Scientist

Lakhwinder Hundal
Supervising Environmental Soil Scientist

Albert Cox
Environmental Monitoring and Research Manager

Heng Zhang
Assistant Director of Monitoring and Research

Monitoring and Research Department
Thomas C. Granato, Director

XXXX 2015

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

EIV_MONITORING REPORT FORMATTING GUIDELINES

Monitoring Reports transmit data with limited verbiage; once approved they are assigned a report number and posted on the District's Website. Some begin as letters prepared for submittal to regulatory agencies and transmitted with a cover letter prior to being assigned a report number and posted on the District's Website. Appendix Pages EIV-1 and 2 discuss formatting guidelines for Monitoring Reports, while Appendix Page EIV-3 describes guidelines for the Monitoring Report transmittal IO Memo and cover letter.

Style and Spacing

X

One-column, single-spaced, first line indented .50-inch. Enumerated text indented .50-inch on each margin. General formatting guidance for all Reports is shown on Pages 27-39 of the Style Guide.

X

X

Font and Margins

Times New Roman 12-point size font. Top, bottom, left and right margins set at 1 inch, justified with hyphenation. Headers are one inch. Footers are set at .50 inch. Refer to Style Guide for pagination information. Follow guidelines in Appendices A and C, respectively for IO Memos and Letters.

Table of Contents, Acknowledgement, Disclaimer, Etc. (Front Matter)

Follow the Research Report format guidelines; single-spaced, one-column format, and add a First Order Heading page to include a List of Acronyms inserted after the List of Figures. The List of Acronyms is omitted in Letters converted to reports. The front matter of reports (up to the Introduction page) are numbered in Roman Numerals.

SEPTEMBER 2015

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

Report Text (Body) and Appendices (Back Matter)

The body of the report is numbered in Arabic Numbers, while the Appendices are numbered in a combination of Roman Numerals and Arabic Numbers. A cover page is inserted before each Appendix.

Report Headings

FIRST-ORDER HEADING These begin a new page and are centered across the entire page in boldface type with all capital letters. Leave two blank lines after a first-order heading. Guidelines for all Heading styles are shown in Pages 11-12 and Appendix F.

Second-Order Heading

Second-order headings start flush with the left margin, on a line by itself. Type second-order headings in bold upper and lowercase. Insert two blank lines before the heading if it follows plain text or a second-, third-, or fourth-order heading. Leave one blank line between heading and paragraph.

Third-Order Heading. Third-order heading begin a paragraph and is immediately followed by text on the same line. Indent the heading .50 inch from the left margin. Type in boldface, upper and lowercase text. The third-order heading should be followed by a period. The text begins 1 or 2 spaces after the punctuation (maintain consistency). Insert one blank line before the heading if it follows plain text or a second-, third-, or fourth-order heading. Leave one blank line after paragraph.

Fourth-Order Heading. Fourth-order headings begin a paragraph and is immediately followed by text on the same line. Indent a fourth-order heading .50 inch from the left margin. Type in italics upper and lowercase text, not boldface. Fourth-order headings should be followed by a period. The text begins 1 or 2 spaces after the punctuation (maintain consistency). Insert one blank line before the heading if it follows plain text or a second-, third-, or another fourth-order heading. Leave one blank line after the paragraph.

Tables and Figures

Follow current formatting for Tables and Figures shown in the Style Guide Page 11 and Appendix F. Tables and Figures should be able to stand alone if separated from the report; therefore, Title headings should be spelled out with no acronyms.

Monitoring and Research Department
Thomas C. Granato, Director **September 2015**

(Continued from Page EIV-2)

Bulleted and Enumerated Items

Bulleted, numbered, or lettered items are indented .50 inch from both the left and right margins. (Numbered or lettered items should not be enclosed in parentheses.) Type should be indented .25 inches from the bullet, number, or lettered item with one blank line (12 points) above and below the list as a whole. If the list contains more than one item, leave a blank line (12 points) between all items in the list. If the item continues onto a second line, indent it so it begins under the first word in the line above. Spacing between items can be reduced to 6-point type if document or report is long. See Enumerated Text guidance shown in Appendix F.

Transmittal Letters for Monitoring Reports

Monitoring Reports are submitted to the Department Director's office attached to an IO Approval Memo (Appendix AII).

Letters to the Illinois EPA or other regulatory agencies (sample enclosed), conveying required monitoring information for WRP permits, contain a cover letter to the agency (Appendix CI). All cc and cc/att: recipients should be shown on the original letter. No bcc's should be indicated.

The transmittal letter, the report cover pages (sans the report number), and the data are submitted to the Department Director's office for signature. The signed document is then transmitted to the agency and a copy of everything is returned to the EM&RD to assign a report number. The typist should compile the document components in the following order: Report Cover and Title Page, Table of Contents, Lists of any Tables and/or Figures (the Letter and Attachments become the body of the report), and finally the Appendices (if included). Once completed, the Monitoring Report is posted on the District's Website.

Samples of a Monitoring Report, and a Monitoring Report compiled from a Letter to a regulatory agency are included at the end of Appendix EIV.

COPY

SAMPLE EIV

EIV_IO APPROVAL MEMO (AII) _SAMPLE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** xxxxxx

TO: Thomas C. Granato
Director of Monitoring and Research

FROM: Heng Zhang
Assistant Director of Monitoring and Research

SUBJECT: Transmittal of Report Entitled "Ambient Water Quality Monitoring in the Chicago, Calumet, and Des Plaines River Systems: A Summary of Biological Sampling and Habitat Assessments During 2014"

We are submitting the subject report for your review and approval. The report summarizes the results of the biological sampling and habitat assessments for the Ambient Water Quality Monitoring Program in the District's service area waterways during 2014.

APPROVED BY:

Thomas C. Granato
Director of Monitoring and Research

HZ:JW:DG:cm
Attachment
cc: Zhang
Cox
Wasik
Gallagher

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, Illinois 60611-3154 f: 312.751.5194 312.751.5190

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THOMAS C. GRANATO, Ph.D., BCES
Director of Monitoring and Research
thomas.granato@mwrd.org

June 29, 2015

COPY

Ms. Marcia Willhite
Bureau Chief
Bureau of Water
Illinois Environmental Protection Agency
P. O. Box 19276
Springfield, IL 62794-9276

Dear Ms. Willhite:

Subject: Tunnel and Reservoir Plan, Gloria Alitto Majewski Chicagoland Underflow Plan Reservoir Water Quality Monitoring Wells, Annual Groundwater Monitoring Report for 2014

Attached are three copies of "Tunnel and Reservoir Plan, Gloria Alitto Majewski Chicagoland Underflow Plan Reservoir Water Quality Monitoring Wells, Annual Groundwater Monitoring Report for 2014."

Very truly yours,

Tom Granato

Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research

TCG:PL:cm
Attachment
cc/att: Ms. Sally K. Swanson (USEPA Region 5 - WC15J) - (2)
Dr. Zhang
Dr. Cox
Dr. Hundal
Dr. Lindo
cc: Mr. St. Pierre
Ms. Sharma
Mr. Cohen

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

COPY

REPORT NO. 15-19

ODOR MONITORING PROGRAM AT THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO'S SOLIDS DRYING AND SOLIDS PROCESSING FACILITIES DURING 2014

June 2015

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 (312) 751-5600

ODOR MONITORING PROGRAM AT THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO'S SOLIDS DRYING AND SOLIDS PROCESSING FACILITIES DURING 2014

By

Ali K. Oskouie
Senior Environmental Research Scientist

Weizhe An
Associate Environmental Research Scientist

Monitoring and Research Department
Thomas C. Granato, Director

June 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ACRONYMS

District	Metropolitan Water Reclamation District of Greater Chicago
H_2S	hydrogen sulfide
HASMA	Harlem Avenue Solids Management Area
LASMA	Lawndale Avenue Solids Management Area
M&O	Maintenance and Operations
M&R	Monitoring and Research
ppbv	parts per billion by volume
RASMA	Ridgeland Avenue Solids Management Area
SDAs	solids drying areas
SDS	solids drying site
SPS	solids processing site
WRP	water reclamation plant

ACKNOWLEDGMENTS

The authors wish to acknowledge the assistance of the Maintenance and Operations Department personnel in carrying out odor monitoring activities at various facilities.

The efforts of the laboratory technicians, Messrs. Robert Bodnar, Marc Byrnes, Anthony Haizel, Shawn Kowalski, Harold Robinson, Edgar Herbas, and Thota Reddy in the Wastewater Treatment Process Research Section, who carried out the odor monitoring surveys and maintained the database are greatly appreciated.

Thanks are also due to Ms. Laura Franklin, Administrative Specialist, for her diligence in proofreading and formatting this report.

DISCLAIMER

Mention of proprietary equipment in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

SUMMARY

The Metropolitan Water Reclamation District of Greater Chicago (District) has maintained a program of monitoring odors at one solids drying site (SDS), one solids processing site (SPS), and five solids drying areas (SDAs) since 1990. Both Monitoring and Research (M&R) Department and Maintenance and Operations (M&O) Department personnel made subjective observations regarding the type and intensity of any odor perceived. The M&R Department staff recorded instantaneous hydrogen sulfide (H_2S) measurements using a handheld monitor at each monitoring site. The number of locations at each facility varied from 4 to 17. The frequency of monitoring varied from one to two days per week at the SDS, SDAs, and SPS. Each odor observation was characterized as very strong, strong, easily noticeable, faint, very faint, or no odor.

During 2014, one very strong odor was observed at the SPS. At all the areas that were monitored, the observations were characterized as faint to no odor from 77 to 99 percent of the time.

At each of the SDS, SDAs and SPS, there are specific locations which have noticeable odors. A summary of locations which had occasional strong or very strong odors is presented in Table 1.

The H_2S levels generally followed a pattern similar to the odor observations with occasional high values. The average level of H_2S ranged from 3.6 to 15.3 parts per billion by volume (ppbv) at the SDS, SDAs, and SPS.

INTRODUCTION

The M&R Department in conjunction with the M&O Department has been conducting an odor monitoring program at various District solids drying and processing facilities for the past 25 years. The program was initiated by the M&R Department to monitor the solids processing and drying sites at the Lawndale Avenue Solids Management Area (LASMA), Harlem Avenue Solids Management Area (HASMA), Marathon, and Vulcan in 1990, and was expanded to the Calumet SDS in 1992 and to the Ridgeland Avenue Solids Management Area (RASMA) and Stony Island SDA in 2001 as part of the District's Solids Drying Area operating permits.

At each location a similar procedure is followed to monitor odors. M&R Department personnel, and at some facilities M&O Department personnel, visit various locations at each facility on a regular basis. The odor monitoring personnel make subjective observations regarding the character and intensity of odors at each of the stations. The odor intensities are ranked on a scale of no odor, very faint, faint, easily noticeable, strong, and very strong. In addition to the subjective odor measurements, the ambient air is sampled and analyzed for H_2S concentration using a Jerome Model 631-X H_2S analyzer.

The objective of this program is to collect and maintain a database of odor levels within and around each solids drying and processing facility. This data can be used to study the trends in odor levels associated with solids drying and processing operations and to correlate odor levels to conditions related to solids drying and processing operations or changing conditions within the facility.

A summary of the odor monitoring program for the solids drying and processing facilities is presented in Table 2. This table includes a brief description of the program with regard to when the monitoring commenced at each facility, the number of monitoring locations, the frequency of the monitoring, who conducts the monitoring, if H_2S is measured, and odor complaints.

Maps showing the odor monitoring locations are presented in Appendix AI.

The number of monitoring locations at each facility varies from 4 to 17, depending upon the size of the facility and the history of odor episodes at those facilities. The solids drying and processing facilities are monitored one or two days per week.

In 2014, odor complaints were received only at the Calumet SDS. The two complaints received were both verified.

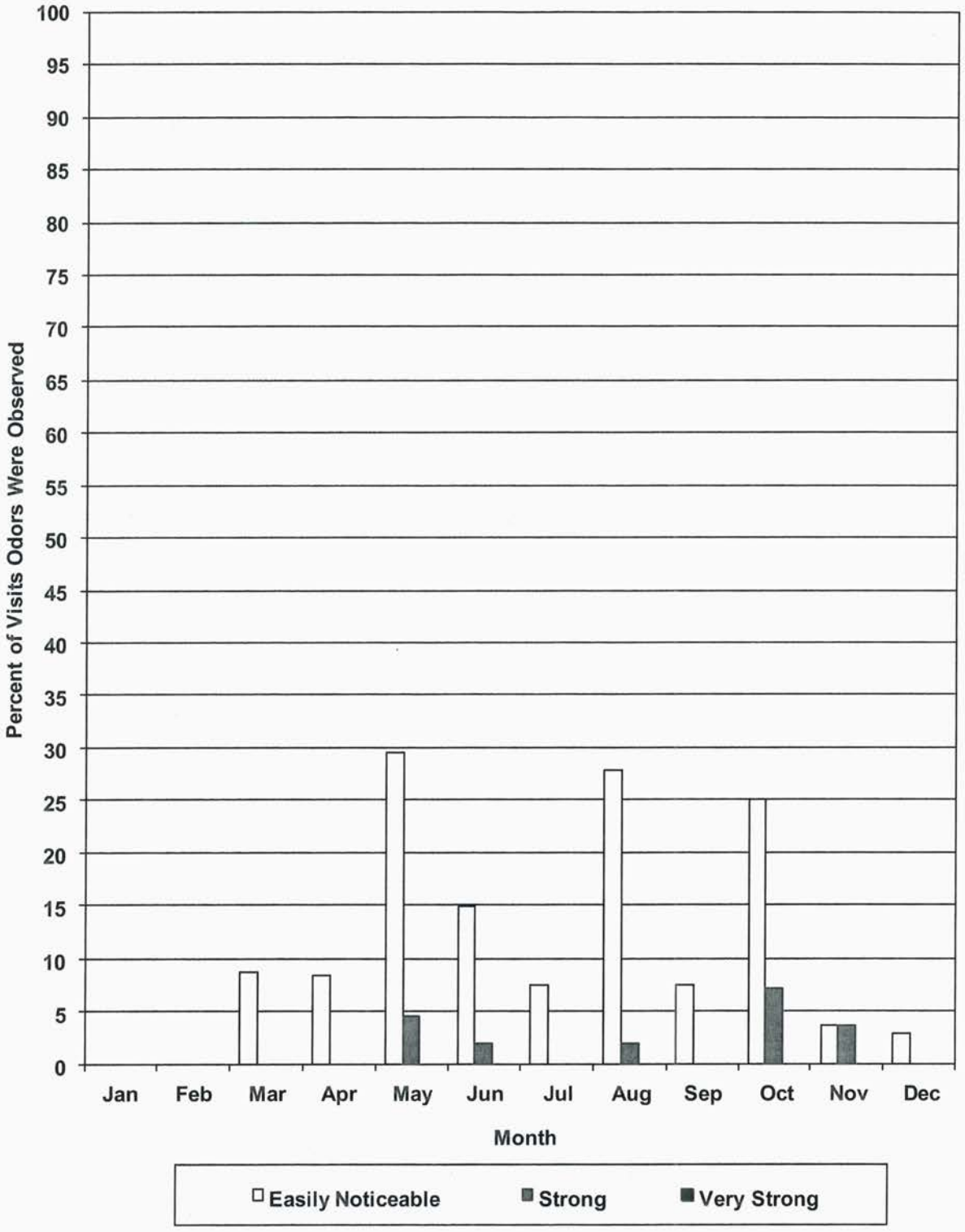
This report presents the odor monitoring data for the year 2014. The odor monitoring data in terms of frequency of occurrence, locations of possible odor sources, and H_2S levels have been reviewed and summarized.

TABLE 2: ODOR MONITORING PROGRAM FOR 2014

Facility	Number of Locations Monitored	Year Began	Months of Year	Days per Week	Departments Participating	H_2S Measured	Number of Odor Complaints	Number of Complaints Verified
Calumet SDS	9	1992	12	1 2	M&R M&O	Yes	2	2
HASMA, Vulcan, and Marathon SDAs, and LASMA SPS	17	1990	12	1 to 2	M&R	Yes	0	0
RASMA SDA	4	2001	12	1 to 2	M&R	Yes	0	0
Stony Island SDA	4	2001	12	1	M&R	Yes	0	0

Note: HASMA = Harlem Avenue Solids Management Area
LASMA = Lawndale Avenue Solids Management Area
RASMA = Ridgeland Avenue Solids Management Area
SDA = Solids Drying Area.
SDS = Solids Drying Site.
SPS = Solids Processing Site.
M&R = Monitoring and Research Department.
M&O = Maintenance and Operations Department.

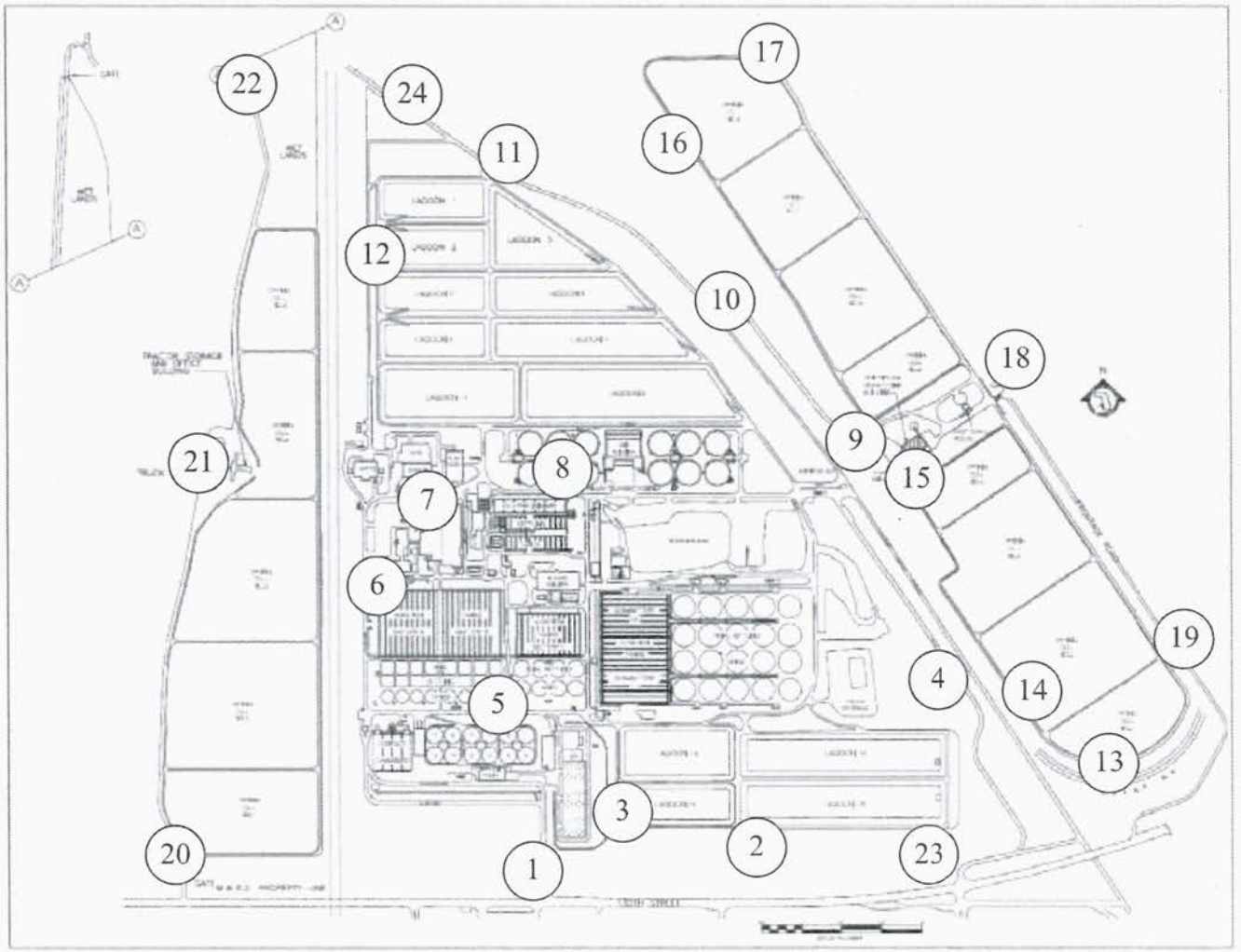
FIGURE 1: PERCENT OF AVERAGE MONTHLY ODOR OBSERVANCES AT THE CALUMET WATER RECLAMATION PLANT SOLIDS DRYING SITES – 2014



APPENDIX AI

LOCATION OF ODOR MONITORING STATIONS AT THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO SOLIDS DRYING AREAS AND SOLIDS PROCESSING SITES

FIGURE AI-1: CALUMET WATER RECLAMATION PLANT AND CALUMET WATER RECLAMATION PLANT SOLIDS DRYING AREAS*



*Numbered circles (14–22) indicate odor monitoring locations for Solids Drying Areas.

APPENDIX EIV

REGULATORY AGENCY MONITORING REPORT

SAMPLE

COPY

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-24

TUNNEL AND RESERVOIR PLAN

GLORIA ALITTO MAJEWSKI

CHICAGOLAND UNDERFLOW PLAN RESERVOIR

WATER QUALITY MONITORING WELLS

ANNUAL GROUNDWATER MONITORING REPORT

FOR 2014

July 2015

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 (312) 751-5600

TUNNEL AND RESERVOIR PLAN
GLORIA ALITTO MAJEWSKI
CHICAGOLAND UNDERFLOW PLAN RESERVOIR
WATER QUALITY MONITORING WELLS
ANNUAL GROUNDWATER MONITORING REPORT
FOR 2014

Monitoring and Research Department
Thomas C. Granato, Director

July 2015

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June 29, 2015

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Ms. Marcia Willhite
Bureau Chief
Bureau of Water
Illinois Environmental Protection Agency
P. O. Box 19276
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Dear Ms. Willhite:

Subject: Tunnel and Reservoir Plan, Gloria Alitto Majewski Chicagoland Underflow Plan Reservoir Water Quality Monitoring Wells, Annual Groundwater Monitoring Report for 2014

Attached are three copies of "Tunnel and Reservoir Plan, Gloria Alitto Majewski Chicagoland Underflow Plan Reservoir Water Quality Monitoring Wells, Annual Groundwater Monitoring Report for 2014."

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Dr. Zhang
Dr. Cox
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Dr. Lindo
cc: Mr. St. Pierre
Ms. Sharma
Mr. Cohen

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ANNUAL DATA FOR MONITORING WELLS

Introduction

Four monitoring wells, QK-1 through QK-4, are located on the perimeter of the Gloria Alitto Majewski Chicagoland Underflow Plan Reservoir. Well QK-1 is positioned at the northwest corner of the reservoir, with QK-2, -3, and -4 at the northeast, southeast, and southwest corners, respectively (Figure 1). In addition, there are nine privately owned water supply wells, WX1 through WX 9, which are located within 1,000 ft of the reservoir. The four monitoring wells are sampled quarterly (Illinois Environmental Protection Agency [IEPA] memorandum dated October 14, 1997). Groundwater elevations are measured during each sampling event. There are no observation wells associated with this site.

According to IEPA requirements, sampling and analysis will also be performed on a weekly basis for at least six weeks, following a rain event in which the reservoir is used to store combined sewer overflow from the Tunnel and Reservoir Plan system. There were no major fill events at this site during 2014. Following the replacement of a faulty pump in well QK-1 on 3/29/2013, the well functioned for a short period of time but started malfunctioning due to excessive silt accumulation. Major repairs were performed on wells at this site during May through August 2014. The pumps in wells QK-1, -3, and -4 were removed to clear silt accumulation. These wells were thoroughly flushed, and pumps were re-installed.

Summary of Data

Monitoring Wells. The analytical data for groundwater sampled during 2014 from monitoring wells QK-1 through QK-4 are presented in Table 1. Physical characteristics, such as elevation, groundwater temperature, and estimated time of recharge for each well between initial drawdown and sampling, are also included.

Following major repairs and flushing, all wells were decontaminated, using the United States Environmental Protection Agency's standard operating procedure of applying 15 percent hypochlorite solution. Decontamination was performed during June 30 – August 14, 2014. All wells are now clean and functional.

Table 2 lists the overall descriptive statistics for groundwater data of monitoring wells QK-1 through -4 for the year 2014. Based on the water level elevations of these wells (Table 1), there were no significant fluctuations during the year.

FIGURE 1: MAP OF FOUR MONITORING WELLS AND NINE PRIVATE WELLS SURROUNDING THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN RESERVOIR

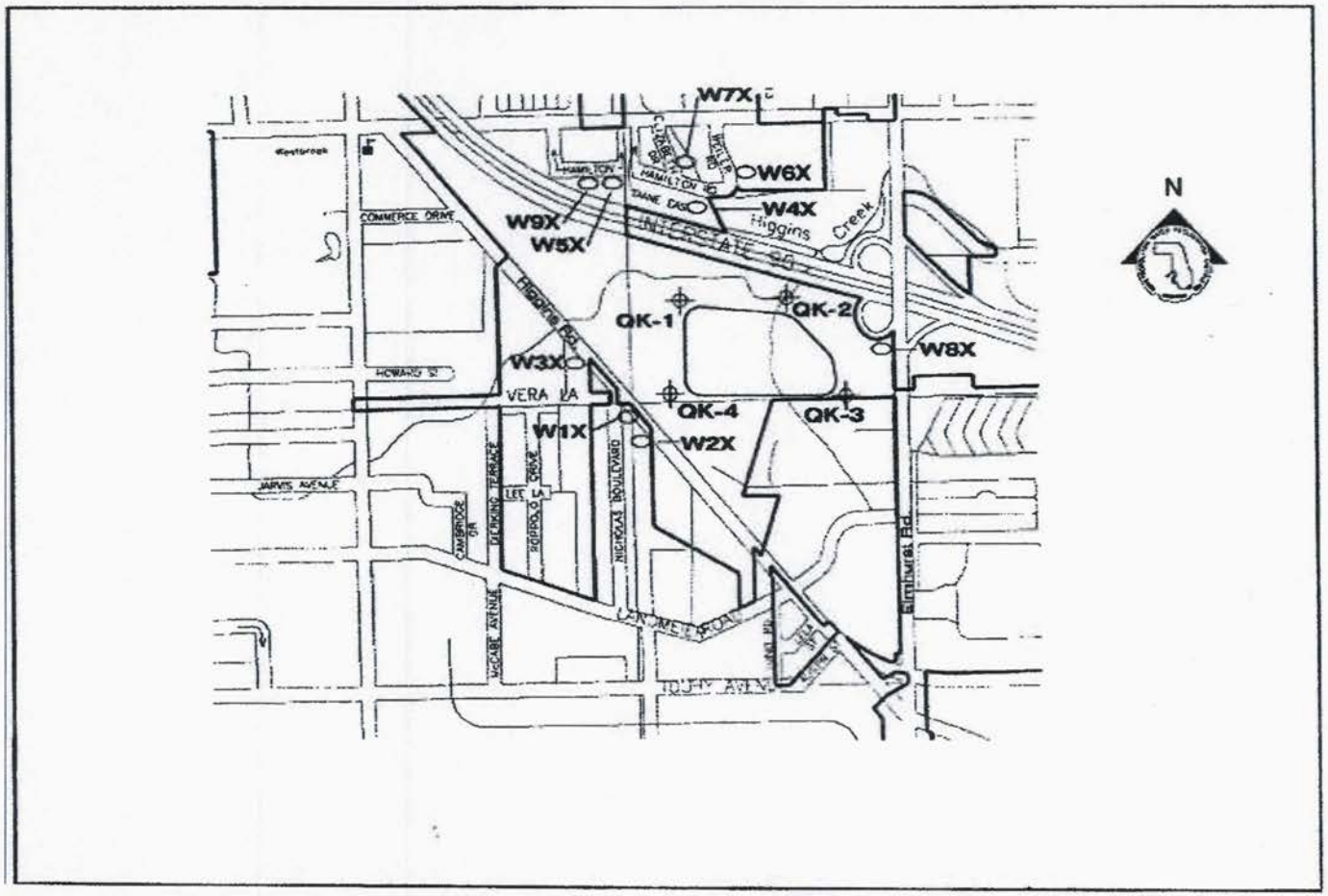

TABLE 1: ANALYSIS OF GROUNDWATER FROM MONITORING WELLS QK-1 THROUGH QK-4 IN THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN OF THE TUNNEL AND RESERVOIR PLAN SAMPLED DURING 2014

Well[1]	Date Sampled	pH	EC[2]	TDS[2]	TOC[2]	Cl⁻	SO_4^{2-}	NH_3-N	Hardness	Fecal Coliform	Temp	Water Elevation[3]	Recharge Time
			mS/m	mg/L						CFU/100 mL	°C	ft	hr
QK-1	02/25/14	7.0	99	1,148	1	38	579	<0.10	665	<1	9.1	4.3	<4
QK-1	08/14/14	NAR[4]	NAR	NAR	NAR	58	NAR	NAR	NAR	<1	12.9	7.3	<4
QK-1	08/20/14	7.6	96	1,092	1	94	308	0.55	505	<1	14.8	8.3	<4
QK-1	10/07/14	7.3	120	1,288	1	26	515	<0.10	762	<1	12.5	-0.7	<4
QK-1	12/03/14	7.4	110	1,320	<1	24	724	<0.10	744	<1	10.4	5.3	<4
QK-2	03/26/14	7.7	77	898	1	<10	528	<0.10	436	<1	9.3	-4.0	<4
QK-2	08/14/14	NAR	NAR	NAR	NAR	<10	NAR	NAR	NAR	<1	15.8	-3.0	<4
QK-2	08/20/14	8.0	94	1,018	1	24	405	<0.10	389	<1	21.4	-5.0	<4
QK-2	10/07/14	8.1	87	884	1	<10	436	<0.10	480	<1	13.5	-8.0	<4
QK-3	03/26/14	7.3	55	1,488	1	19	914	<0.10	812	<1	10.5	-9.5	<4
QK-3	06/30/14	NAR	NAR	NAR	NAR	19	NAR	NAR	NAR	<1	8.9	-8.5	<4
QK-3	07/16/14	NAR	NAR	NAR	NAR	24	NAR	NAR	NAR	50	13.7	-6.5	<4
QK-3	08/13/14	NAR	NAR	NAR	NAR	24	NAR	NAR	NAR	26	15.3	-3.5	<4
QK-3	08/20/14	7.6	59	1,360	2	23	578	0.36	584	10	17.8	-9.5	<4
QK-3	10/07/14	7.7	104	1,126	1	20	576	0.39	620	1	12.6	-15	<4
QK-3	12/03/14	7.5	56	1,188	1	18	674	0.25	633	<1	11.4	-11	<4
QK-4	03/26/14	7.4	87	960	1	52	434	0.53	534	<1	9.7	8.9	<4
QK-4	07/16/14	NAR	NAR	NAR	NAR	53	NAR	NAR	NAR	<1	14.3	11	<4

TABLE 1 (Continued): ANALYSIS OF GROUNDWATER FROM MONITORING WELLS QK-1 THROUGH QK-4 IN THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN OF THE TUNNEL AND RESERVOIR PLAN SAMPLED DURING 2014

Well[1]	Date Sampled	pH	EC[2]	TDS[2]	TOC[2]	Cl^-	SO_4^{2-}	NH_3-N	Hardness	Fecal Coliform	Temp	Water Elevation[3]	Recharge Time
			mS/m	mg/L						CFU/100 mL	°C	ft	hr
QK-4	08/14/14	NAR	NAR	NAR	NAR	44	NAR	NAR	NAR	<1	12.5	14	<4
QK-4	08/20/14	7.5	96	1,090	1	67	359	0.62	492	<1	14.1	5.9	<4
QK-4	10/07/14	7.6	94	864	1	88	272	0.65	509	<1	12.4	3.9	<4
QK-4	12/03/14	7.5	89	880	1	90	331	0.61	508	<1	10.9	21	<4

[1]Pump in Well QK-1 replaced in July 2014; QK-3 and -4 flushed and desilted; not required for QK-2. Original pumps replaced.
[2]EC = electrical conductivity; TDS = total dissolved solids; TOC = total dissolved organic carbon.
[3]Relative to Chicago city datum (579.48 ft above mean sea level) at intersection of Madison and State Streets.
[4]No additional analyses required; pre- and post-decontamination samples (6/30, 7/16, 8/13, and 8/14/14) tested for Cl and FC only.

TABLE 2: DESCRIPTIVE STATISTICS FOR GROUNDWATER DATA OF MONITORING WELLS QK-1 THROUGH QK-4 IN THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN OF THE TUNNEL AND RESERVOIR PLAN DURING 2014

Well[1]	Statistic	pH	EC[2]	TDS[2]	TOC[2]	Cl^-	SO_4^{2-}	NH_3-N	Hardness	Fecal Coliform[3]
			mS/m	mg/L						CFU/100 mL
QK-1	Minimum	7.0	96	1,092	<1	24	308	<0.10	505	<1
	Mean	7.4	105	1,212	1	48	532	0.21	638	<1
	Maximum	7.6	120	1,320	1	94	724	0.55	744	<1
	Std. Dev.	0.2	9	109	0.2	29	173	0.23	122	NA[4]
	Median	7.4	103	1,218	1	38	547	0.10	665	<1
	Coeff. of Var. (%)	3.1	9	9	17	61	33	110	19	NA
QK-2	Minimum	7.7	77	884	1	<10	405	<0.10	389	<1
	Mean	8.0	90	933	1	14	456	<0.10	413	<1
	Maximum	8.1	104	1,018	1	24	528	<0.10	436	<1
	Std. Dev.	0.2	11	74	0.0	7	64	0.00	33	NA
	Median	8.1	91	898	1	10	436	<0.10	413	<1
	Coeff. of Var. (%)	2.2	12	8	0.0	52	14	0.00	8	NA
QK-3	Minimum	7.0	55	1,126	1	18	576	<0.10	584	<1
	Mean	7.5	87	1,291	1	21	685	0.28	676	4
	Maximum	8.0	120	1,488	2	24	914	0.39	812	50
	Std. Dev.	0.3	29	165	0.6	3	159	0.13	120	NA
	Median	7.6	104	1,274	1	20	626	0.31	633	1
	Coeff. of Var. (%)	4.4	33	13	43	12	23	48	18	NA

TABLE 2 (Continued): DESCRIPTIVE STATISTICS FOR GROUNDWATER DATA OF MONITORING WELLS QK-1 THROUGH QK-4 IN THE GLORIA ALITTO MAJEWSKI CHICAGOLAND UNDERFLOW PLAN OF THE TUNNEL AND RESERVOIR PLAN DURING 2014

Well[1]	Statistic	pH	EC[2]	TDS[2]	TOC[2]	Cl^-	SO_4^{2-}	NH_3-N	Hardness	Fecal Coliform[3]
			mS/m	mg/L						CFU/100 mL
QK-4	Minimum	7.4	87	864	<1	44	272	0.53	492	<1
	Mean	7.5	92	949	1	66	349	0.60	511	2
	Maximum	7.6	97	1,090	1	90	434	0.65	534	37
	Std. Dev.	0.1	4	103	0.1	20	67	0.05	21	NA
	Median	7.5	92	920	1	60	345	0.62	508	1
	Coeff. of Var. (%)	1.0	5	11	5	30	19	9	4	NA

[1]All wells repaired, serviced, and decontaminated during 2014.
[2]EC = electrical conductivity; TDS = total dissolved solids; TOC = total dissolved organic carbon.
[3]Geometric mean calculated.
[4]Not applicable for Fecal Coliform data.

APPENDIX E
EV_MEMORANDUM REPORT COVER_TEMPLATE

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-XX

MEMORANDUM REPORT

CHARACTERIZATION OF THE POST-CENTRATE STREAM AFTER ENHANCED BIOLOGICAL PHOSPHORUS REMOVAL IMPLEMENTATION AT THE STICKNEY WATER RECLAMATION PLANT

AUGUST 2015

EV

APPENDIX E
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Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

MEMORANDUM REPORT

CHARACTERIZATION OF THE POST-CENTRATE STREAM AFTER ENHANCED BIOLOGICAL PHOSPHORUS REMOVAL IMPLEMENTATION AT THE STICKNEY WATER RECLAMATION PLANT

By:

Kamlesh K. Patel
Senior Environmental Research Scientist

Joseph Kozak
Supervising Environmental Research Scientist

Heng Zhang
Assistant Director of Monitoring and Research

Monitoring and Research Department
Thomas C. Granato, Director

August 2015

APPENDIX E
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FOREWORD

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Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

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Memorandum Report Cover Page Template

The cover pages for the report consists of the M&R Blue Report Cover page, the Title page, and the Foreword/Disclaimer page. The report cover pages are a modified version of the Research, Monitoring, and Data Reports and contain the words "MEMORANDUM REPORT NO. 15-" above the report name. A Table of Contents and other front matter is not required for these reports (Page 39).

IO Memo

Follow the IO Memo guidelines (Appendix AI) for formatting the Department memo, i.e. Times New Roman, 12-point font, 1-inch margins, 1-inch header, .50-inch footer. Block style, single-spaced, Justified, No Hyphenation, signature initials, cc recipients, etc. Note special instructions for using acronyms in IO Memoranda. Page numbers are inserted in the Header Section on continuation pages of the IO Memo.

Report Documentation

The report data attachment follow the M&R Department Research Report Guidelines shown in Appendix EI for document content and Appendix F for additional document formatting for headings, tables and figures. Page Numbers (1, 2, 3, etc.) are centered in the .50-inch Footer Section in the report data. Acronym usage follows standard report format.

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

MEMORANDUM REPORT

THE FIRST AND SECOND PAGE TITLE SHOULD BE CENTERED WITHIN THE PAGE BOARDER IN ORDER TO ACHIEVE AN ATTRACTIVE PRESENTATION

By

XXXXX XXXX
Title

XXXXXXX XX
Title

XXX XXXXX
Assistant Director of Monitoring and Research

Monitoring and Research Department
Thomas C. Granato, Director

September 2015

FOREWORD

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EV_MEMORANDUM REPORT IO MEMO (AI) _ SAMPLE

INTEROFFICE MEMORANDUM

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

DEPARTMENT: Monitoring and Research **DATE:** XXXXXXX

TO: Manju P. Sharma
Director of Maintenance and Operations

Catherine A. O'Connor
Director of Engineering

COPY

FROM: Thomas C. Granato
Director of Monitoring and Research

SUBJECT: Results of the Preliminary Baseline Odor Study at the Egan WRP Pretreatment and Thickening Buildings

An M&R Department study was conducted to evaluate the odor conditions at the Egan WRP Pretreatment and Thickening Buildings. The results of this study were compared to the results of a 2010 study by the Illinois Institute of Technology (IIT) that identified some odor concerns inside these two buildings, especially the Pretreatment Building. The details of the evaluation are provided in the attached report.

The IIT study included investigating the two levels (fine screens upper level and coarse screens lower level) of the Pretreatment Building and the Thickening Building for ammonia (NH_3), hydrogen sulfide (H_2S), and effective dose at the fiftieth percentile (ED_{50}). The M&R Department revisited these study areas in October and November 2013 to verify the results of the IIT study by conducting more comprehensive and frequent monitoring for indoor air pollutants including carbon dioxide (CO_2).

Both IIT and District studies indicated that the Pretreatment Building is more odorous than the Thickening Building. The NH_3, H_2S, and ED_{50} results generated by the M&R Department were higher than IIT's results, although the plant conditions may be more conducive to higher emissions during IIT's study periods (summer) than the District's study period (fall). The M&R Department's evaluation also indicates that CO_2 concentrations in all areas of both buildings were very concerning, especially in the Pretreatment Building, and improved ventilation should be seriously considered by the management.

The M&R Department recommends modifying the ventilation system and cleaning the screens and conveyors more often for the Pretreatment Building. A proper ventilation rate to provide a minimum air change rate of 12/hour is also suggested by the M&R Department to conform to the recommendations made by the National Fire Protection Association.

Please contact Ali Oskouie at extension 8-4070 if you have any questions regarding the attached report.

TCG:HZ:AO:lf
Attachment
cc: H. Zhang/E. Podczerwinski
J. Kozak/O. Oskouie

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-XX

MEMORANDUM REPORT

RESULTS OF THE PRELIMINARY BASELINE ODOR STUDY AT THE JOHN E. EGAN WATER RECLAMATION PLANT PRETREATMENT AND THICKENING BUILDINGS

XXXXX 2015

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

RESULTS OF THE PRELIMINARY BASELINE ODOR STUDY AT THE JOHN E. EGAN WATER RECLAMATION PLANT PRETREATMENT AND THICKENING BUILDINGS

By:

Ali Oskouie
Senior Environmental Research Scientist

Joseph Kozak
Supervising Environmental Research Scientist

Heng Zhang
Assistant Director of Monitoring & Research

Monitoring and Research Department
Thomas C. Granato, Director

XXXX 2015

FOREWORD

The Metropolitan Water Reclamation District of Greater Chicago (District) recognizes the value of xxxxxxx.

DISCLAIMER

The contents of this memorandum constitute the state of knowledge and recommendations developed by the District at the time of publication, and are subject to change as additional studies are completed and experience is attained, and as the full context of the District's operating environment is considered.

SAMPLE_ MEMORANDUM REPORT (EV)

RESULTS OF THE PRELIMINARY BASELINE ODOR STUDY AT THE JOHN E. EGAN WATER RECLAMATION PLANT PRETREATMENT AND THICKENING BUILDINGS

A Monitoring and Research (M&R) Department study was conducted to evaluate the odor conditions at the John E. Egan Water Reclamation Plant (Egan WRP) Pretreatment and Thickening Buildings. The results of this study were compared to the results of a 2010 Illinois Institute of Technology (IIT) study that identified some odor concerns inside these two buildings, especially the Pretreatment Building.

The two levels (fine screens upper level and coarse screens lower level) of the Pretreatment Building monitored are illustrated in Figures 1 and 2. The Thickening Building monitored is illustrated in Figure 3. From the IIT study, the maximum values for effective dose at the fiftieth percentile (ED_{50}), ammonia (NH_3) concentrations, and hydrogen sulfide (H_2S) concentrations in the Pretreatment and Thickening Buildings based on seven sampling events are shown in Table 1. Please note that the area and location nomenclature used by IIT was different from the M&R Department. It is unclear from the IIT report the exact locations listed in Table 1 that these are referring to with respect to the M&R Department monitoring locations in Figures 1 through 3, but some assumptions have been made for comparison of results below.

It is clear from Table 1 that the most problematic areas in the Pretreatment and Thickening Building in terms of ED_{50} are the fine screen area in the upper level and above the wet well in the lower level of the Pretreatment Building. The average H_2S concentrations in all six areas of the Pretreatment Building were four to five orders of magnitude higher than the human detection level of 0.5 parts per billion by volume (ppbv) (Metcalf & Eddy: Wastewater Engineering: Treatment and Reuse); the three areas of the Thickening Building were three to four orders of magnitude above the H_2S detection limit. The average NH_3 concentrations in all areas of both buildings were higher than the human detection level of 40 ppbv (Haz-Map: Information on hazard chemicals and occupational diseases. Bethesda (MD): NIH: http:// hazmap.nlm.nih.gov/index.html). The Occupational Safety and Health Administration (OSHA) permissible exposure limits (PEL) for H_2S and NH_3 are 20 parts per million by volume (ppmv) and 50 ppmv, respectively, at any time during an 8-hour shift period. All areas were below these PELs.

Based on IIT's final report, the average air ventilation rate inside the Pretreatment Building screen room and the Gravity Belt Thickening (GBT) Building, and at the middle of the thickening room were 2.6/hr, 7.2/hr, and 2.6/hr, respectively. All are substantially lower than 12/hour as suggested in the National Fire Protection Association's (NFPA's) Publication Number 820 for wastewater treatment and collection facilities.

The M&R Department has re-evaluated the odors in light of IIT's findings and recommendations and has gathered further information to map the gradient of the odorous compounds in the Pretreatment and Thickening Buildings. IIT recommended the following for the Pretreatment Building:

- Increasing the capacity of the local exhaust system (LES) for the wet well, expanding the fan area of the hood, and reinstalling the LES closer to the water system in the Pretreatment Building.

- Installing a new LES above the screening conveyor and coarse screen.

- Investigating the return flow of the side stream (aerated grit chambers) below the surface of the liquid to minimize the turbulence in the wet well.

For the Thickening Building, IIT recommended the following:

- Installing a hood at a lower level and a hood fan as large as the area of the GBTs.

Materials and Methods

To perform this study, the Pretreatment Building was divided into two floors, namely: fine screen level (upstairs) and coarse screen level (downstairs). There is only one level in the Thickening Building. Figures 1 through 3 show schematics of the Pretreatment Building and Thickening Building.

The M&R Department made instantaneous measurements of H_2S, relative humidity (RH), temperature (T), ammonia (NH_3), and carbon dioxide (CO_2) using handheld devices once or twice a week for seven weeks (October 11, 2013, through November 20, 2013) from 23 total locations in both buildings, simultaneously collected Tedlar bag gas samples from seven total locations in both buildings for olfactometry testing in the M&R Department's Air Quality Laboratory, and continuously measured H_2S using OdaLogs at eight total locations in both buildings in each of two levels of the Pretreatment Building and the main level of the Thickening Building.

The M&R Department conducted H_2S (using Jerome), CO_2, relative humidity (RH), NH_3, and temperature monitoring at Locations 1 to 6 (Figure 1). The Department also conducted Tedlar bag sampling at TB1 and TB2, and high-range OdaLog measurements at ODH1 and ODH2. The M&R Department conducted H_2S (using Jerome), CO_2, relative humidity (RH), NH_3, and temperature monitoring at Locations 1 to 6 (Figure 2). The M&R Dep also conducted Tedlar bag sampling at TB3 and TB4 and high-range OdaLog measurements at ODH3 and ODH4. The Department conducted H_2S (using Jerome), CO_2, relative humidity (RH), NH_3, and temperature monitoring at Locations 1 to 11 (Figure 3). The M&R Department also conducted Tedlar bag sampling at TB5 to TB7 and low-range OdaLog measurements at ODL1a to ODL4a.

For the instantaneous meter readings, duplicate readings were made at each location. Monitoring for other reduced sulfide compounds was not performed, as the IIT study did not identify any concerns for these parameters in these two buildings. The total number of instantaneous sampling events was 11.

Results

A side-by-side comparison of IIT and the M&R Department's ED_{50}, NH_3, and instantaneous H_2S results was made (Table 2). The values for H_2S and NH_3 in this table are averages of instantaneous measurements. The average values of ED_{50}, NH_3 and H_2S were higher than the average values measured by the IIT team, except for the M&R Department's ED_{50} values in the middle of the Thickening Building (Figure 3, Locations TB6 and TB10). Even though the concentrations measured by the M&R Department for NH_3 and H_2S were higher than IIT's results, they were still below the aforementioned OSHA PEL values for an 8-hour shift period. However, it should be noted that a couple of the M&R Department measured NH_3 concentrations in the Pretreatment Building are close to OSHA's PEL of 50 ppmv if they persisted for an 8-hour period, especially near the Fine Screens (Figure 1, Locations 1, 4, 5, and 6).

The IIT and District studies were performed during different time periods. To put the results of Table 2 in context, the effect plant conditions, namely wet/dry weather conditions, wastewater temperature, and influent loadings were evaluated for both time periods, but we found no significant difference between the two study periods except for the precipitation, however the average influent rate was higher by about 20 percent for IIT study. The average precipitation was 0.06 inches per day during the IIT study and 0.13 inches per day during the M&R Department study. The average flow was 28.23 MGD during the IIT study and 22.74 MGD during the M&R Department study. Also the GBT recycle flow rate, Egan WRP WAS flow rates to the GBT, James C. Kirie (Kirie) WRP sludge flow rates, and the WRP Sludge flow rate to the GBT were compared for both study periods; the two study periods ranged were within 11 to 26 percent of each other for these flows.

Based on the M&R Department's study, the maximum concentrations for H_2S do not cause any concerns either. The maximum measured H_2S concentration of 15 ppmv in the fine screen room at Location 5 (Figure 1) did not exceed the OSHA PEL for H_2S.

A comparison of the H_2S results from the OdaLogs and Jerome handheld devices for this period of the study was performed in the hope of eliminating one of the methods for measuring H_2S in future studies (Table 3). The average, maximum, and standard deviations from the two devices were not in agreement with each other at all locations, with the Jeromes all showing higher measurements than the OdaLogs. This discrepancy could be due to using the average of OdaLog readings over an 8-hour shift period as opposed to two instantaneous Jerome recordings. Therefore, for future studies both methods should be used, and the worst-case scenario should be considered for evaluation of the ventilation system in the building.

CO_2, which is considered a major indicator of the efficiency of ventilation in buildings, was evaluated for the different areas during this study (Table 4). The OSHA PEL for CO_2 in the workplace is 5,000 ppmv, which is the enforceable limit for an 8-hour work shift in a 40-hour work week. According to the American Society of Heating, Refrigerating and Air-Conditioning Engineers, a CO_2 level of more than 1,000 ppmv is an indicator of possible inadequate ventilation. The ventilation inside the Pretreatment Building appears to be inadequate based on the latter, and the Thickening Building is very near the 1,000 ppmv threshold based on average concentrations.

1. ED_{50} by IIT identified easily noticeable odor conditions. In general, ED_{50} levels exceeding 100 can be considered potentially offensive for visitors to the premises; however, an ED_{50} of 200 might not be considered an uncomfortable environment for the resident staff.

The following recommendations are made considering the results of monitoring by the M&R Department:

1. For the Pretreatment Building, IIT has recommended modifying the ventilation system and cleaning the screens and conveyors. The District agrees, and has specified the gradient of concentration of the odorous compounds. We also recommend determination of ventilation rates considering the District's study based on the maximum measured concentrations of CO_2 in the Coarse Screens, Fine Screens, and the GBT Buildings in designing the ventilation system. To accomplish this, the following area-specific mass flux equation (Emission Rate [ER]) could be used to set the air exchange rate (AER) for rooms in both the Pretreatment and the Thickening Buildings based on the aforementioned maximum concentration.

$$ER = \frac{V \times AER \times (C - C^{\circ})}{A}$$

Where

V = Volume of the room
AER = Air exchange rate
C = Concentration of the emitted compound
C° = Ambient (control) concentration
A = Exposed area

This will aid in determination of a conservative AER to reduce the concentration of odorous compounds to below OSHA's prescribed limits for H_2S, CO_2, and NH_3 inside the building. Using this equation, ER needs to be minimized using temporal variation (on an 8-hour period) of measured indoor concentrations of CO_2 corresponding to different AERs until C- C ° becomes negligible. This is the optimum AER for a specific room.

2. A proper ventilation rate to provide an air change rate of 12/hour is suggested by the M&R Department to conform to the NFPA recommendations for both buildings. The gradient of CO_2 concentrations identified in this study can provide guidance on the installation of proper location for intakes, exhausts, and exhaust fans at the Pretreatment and Thickening Buildings to provide cleaner air to the indoor environment of these two building in a short period of time (reduced air exchange rate).

TABLE 2: SIDE-BY-SIDE COMPARISON BETWEEN THE RESULTS OF ANALYSIS (AVERAGE VALUES) FOR EFFECTIVE DOSE AT THE FIFTIETH PERCENTILE, AMMONIA, AND HYDROGEN SULFIDE BY THE MONITORING AND RESEARCH DEPARTMENT AND THE ILLINOIS INSTITUTE OF TECHNOLOGY

	ED_{50} (D/T)		NH_3 (ppmv)		H_2S (ppmv)[1]	
	District[2]	IIT	District[3]	IIT	District[3]	IIT
Pretreatment Building						
Coarse Screen Area	92	70	32	3	2.61	0.49
Fine Screen Area	96	72	41	5	4.39	0.49
Above Wet Well	92	76	33	4	3.10	0.42
Screening Conveyors	92	79	33	4	3.10	0.47
South of Coarse Screen	154	63	36	2	2.93	0.80
North of Fine Screen	80	63	48	2	5.14	0.65
Thickening Building						
Middle of Two GBTs in Service	68	32	6	4	0.07	0.06
Near Plastic Curtain Wall	19	20	8	3	0.07	0.03
Middle of the Thickening Building	14	15	9	3	0.03	0.02

[1]Jerome instantaneous measurements (two measurements per day).
[2]Average of one or two days of measurements.
[3]Average of two measurements per sampling day for eleven days.
Note: It is assumed that the IIT's measurements were made in the following locations:

Coarse Screen Area: Figure 2, Locations 1 and 4, TB3 and TB4; Fine Screen Area: Figure 1, Locations 1 and 4, TB1 and TB2; Above the Wet Well: Figure 2, Location 1, TB3 and TB4; Screening Conveyors: Figure 2 Locations 1 and 4, TB3 and TB4; South of Coarse Screen: Figure 2, Locations 2 and 3 and TB3; North of Fine Screen Room: Figure 1, Locations 5 and 6, and TB2 ; Middle of two GBTs in service: Figure 3, Location 11, and TB5; Near Plastic Curtain Wall: Figure 3, Location 10, and TB6; Middle of the Thickening Building: Figure 3, Locations 11 and TB5).

TABLE 3: A COMPARISON BETWEEN THE JEROME AND ODALOG HYDROGEN SULFIDE RECORDINGS AT DIFFERENT AREAS INSIDE THE PRETREATMENT AND THICKENING BUILDINGS

	Fine Screen[1]				Coarse Screen[1]				GBT Room[2,3]	
	Jerome (3)	OdaLog (ODH1)	Jerome (6)	OdaLog (ODH2)	Jerome (2)	OdaLog (ODH3)	Jerome (6)	OdaLog (ODH4)	Jerome (2)	OdaLog (ODL1a)
Mean (ppbv)	3,197	2,906	4,911	2,490	2,996	1,632	1,802	1,607	44	13
Max (ppbv)	14,000	4,480	15,000	3,670	7,650	2,730	6,400	2,850	106	27
Stdev (ppbv)	4,044	1,135	5,098	986	2,310	688	1,830	722	34	6

Note: OdaLog (8-hour average); Jerome instantaneous measurements (average of two readings).
[1]Numbers in parentheses show the monitoring locations as shown on Figures 1 and 2.
[2]Numbers in parentheses show the monitoring locations as shown on Figure 3.
[3]Additional data at different locations in the GBT room were not included as the OdaLogs malfunctioned.

TABLE 4: STATISTICAL DATA FOR CARBON DIOXIDE CONCENTRATIONS IN DIFFERENT AREAS INSIDE THE PRETREATMENT AND THICKENING BUILDING

	Carbon Dioxide Concentration (ppmv)		
	Average	Max	Stdev
FINE SCR-1	1,178	1,547	151
FINE SCR-2	949	1,253	128
FINE SCR-3	938	1,063	71
FINE SCR-4	1,056	1,228	101
FINE SCR-5	1,113	1,262	92
FINE SCR-6	1,076	1,207	109
COARSE SCR-1	1,459	2,392	335
COARSE SCR-2	1,437	2,394	338
COARSE SCR-3	1,456	2,433	348
COARSE SCR-4	1,492	2,498	366
COARSE SCR-5	1,577	2,715	418
COARSE SCR-6	1,468	2,147	305
GBT-1	821	1,026	82
GBT-2	805	879	43
GBT-3	833	900	45
GBT-4	822	894	45
GBT-5	785	842	31
GBT-6	820	1,042	81
GBT-7	871	1,364	178
GBT-8	807	893	45
GBT-9	843	1,017	68
GBT-10	843	951	53
GBT-11	879	1,001	82

APPENDIX E

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Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 15-XX

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TECHNICAL MEMORANDUM NO. XX

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August 2015

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XXXXXX PHOSPHORUS TASK FORCE

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By

Xxxx Xxxxxx
Title

Xxxx Xxxxx
Title

Monitoring and Research Department
Thomas C. Granato, Director

XXXXX 2015

FOREWORD

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APPENDIX EVI
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Title

Technical Memorandum [Insert number]

Date:

To: Phosphorus Task Force & Advisory Committee

From: Phosphorus Study/Planning Team

Subject:

Body of Memorandum

Closing (if any)

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MONITORING AND RESEARCH DEPARTMENT

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Technical Memorandum (TM) Reports convey findings and recommendations and have been prepared by various departments and distributed throughout the District. Once a copy of the final TM is received, the Department Director's office will attach it to a Report Cover Template, assign a report number obtained from the EM&R Division, and upload the report on the District Website.

Technical Memorandum Report Cover Page Template

The template for this type of report includes a modified M&R Blue Report Cover Page, a Title Page, and an Acknowledgement/Disclaimer Page. A TM Report cover page and sample is attached for assistance in completing the Report Cover. A Table of Contents is not required, but the Foreword and Disclaimer text will vary depending upon the subject of the Technical Memorandum Report. The number of the TM Report will be the same as the number indicated in the TM.

Technical IO Memorandum

Refer to the TM Guidelines (Appendix BII), which defines the formatting required for these types of reports. Follow the M&R Department report guidelines when formatting Headings, Tables, or Figures. The report contains modified First-Order Headings as indicated in the Sample attached. No signature or initials are required on the final TM A Reader copy should be provided for approval tracking purposes. Follow Report Guidelines when using acronyms.

April 2015

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

CALUMET PHOSPHORUS TASK FORCE

TECHNICAL MEMORANDUM NO. XX

By

XXX XXXXXX
XXXXXXXXX XXXXX

XXXX XXXXX
XXXXXXXX XXXXX XXXXXXX

Monitoring and Research Department
Thomas C. Granato, Director

April 2015

FOREWORD

The Metropolitan Water Reclamation District of Greater Chicago (District) recognizes the value of

DISCLAIMER

The contents of this technical memorandum constitute the state of knowledge and recommendations developed by the District's Phosphorus Task Force at the time of publication, and are subject to change as additional studies are completed and experience is attained, and as the full context of the District's operating environment is considered.

NOTE: TEXT IN THE FOREWORD AND DISCLAIMER WILL VARY DEPENDING UPON THE SUBJECT ADDRESSED IN THE TECHNICAL MEMORANDUM

The Title Heading used here will become the Report Title and will be used on the Type V: Technical Memorandum Cover Template. The Title can be Full or Left Margin Justified Depending upon Length of Title

Technical Memorandum [Insert Memo Number]

Date:

To: Phosphorus Task Force & Advisory Committee

From: Phosphorus Study/Planning Team

Subject: Subject Justified, indented .50-inch from right margin.

X (One or two blank lines depending upon length of memo.)
X

TITLE HEADING: The Technical Memorandums (TMs) are prepared using the B-II: Special IO Memo Heading guidelines shown above (14-Point Bold Font, Times New Roman), the title can be prepared Full or Left-Hand Justified for the Title and the TM number. Leave one blank line before and after inserting a Line to separate the Title Heading portion from the Date

DATE, TO, FROM, SUBJECT: Currently, only the Phosphorus Team are initiating TMs, so the addresses are those indicated above. The subject line is prepared in Times New Roman, 12-point font, .50-inch indent on right-hand margin, no hyphenation, no acronyms.

BODY: The body of the TM is prepared following the Research Report format guidelines for text, tables, and figures and when utilizing 1st, 2nd, and 3rd order headings. Tables and/or figures can be embedded within the text if space allows, refrain from dividing the table at the end of the page.

The text is prepared in Times-New Roman, 12-point font, Block style, Justified with no Hyphenation. Page numbers are inserted at center position on the bottom of each page, beginning on the first page. The TMs may contain reviewer/author/typist initials on the Reader copy for tracking the review process, but all initials are removed from the final document.

The TMs are reviewed, approved and distributed by the initiating division.

The final TM is forwarded to the Director's office where staff will prepare and attach the Technical Memorandum 3-page Report Cover; obtain an M&R Report Number from the EM&R Division, and post the TM Report on the District's Website.

NOTE: Do not insert Headers on any continuation pages.

COPY

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 14-42

STICKNEY PHOSPHORUS TASK FORCE

TECHNICAL MEMORANDUM NO. 5

STICKNEY BIO-P INFLUENT CHANNEL AND LABORATORY MIXED LIQUOR FERMENTATION SUMMARY

October 2014

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

STICKNEY PHOSPHORUS TASK FORCE

TECHNICAL MEMORANDUM NO. 5

STICKNEY BIO-P INFLUENT CHANNEL AND LABORATORY MIXED LIQUOR FERMENTATION SUMMARY

By:

Joseph Kozak
Supervising Environmental Research Scientist

Cindy Qin
Associate Environmental Research Scientist

Yvonne Lefler
Senior Civil Engineer

Joseph Cummings
Principal Engineer

Brett Garelli
Deputy Director of Maintenance and Operations

Glen Rohloff
Managing Civil Engineer

Monitoring and Research Department
Thomas C. Granato, Director

October 2014

FOREWORD

The Metropolitan Water Reclamation District of Greater Chicago (MWRD) recognizes the value of phosphorus as a non-renewable resource. In an effort to optimize the sustainable removal of phosphorus from its wastewater influents and the subsequent recovery of phosphorus in various forms suitable for use as an agronomic fertilizer, the MWRD initiated a Phosphorus Removal and Recovery Task Force in 2012. The Task Force initiated a study phase at several of the MWRD's Water Reclamation Plants (WRPs) to evaluate the feasibility of implementing enhanced biological phosphorus removal and to develop operational guidelines for optimizing its effectiveness. The Task Force has created WRP specific study workgroups that are focused on each of the WRPs that have been identified to participate in this initiative. As the workgroups complete various phases of their studies and evaluations they are documenting their findings and recommendations in technical memoranda. These memoranda are written by the WRP specific workgroups and vetted by the Task Force before being published. Their purpose is to capture the state of knowledge and study findings and to make recommendations for implementation of enhanced biological phosphorus removal as they are understood at the time the memoranda are published.

DISCLAIMER

The contents of this technical memorandum constitute the state of knowledge and recommendations developed by the MWRD's Phosphorus Task Force at the time of publication, and are subject to change as additional studies are completed and experience is attained, and as the full context of the MWRD's operating environment is considered.

Stickney Bio-P Influent Channel and Laboratory Mixed Liquor Fermentation Summary

Technical Memorandum 5

Date: June 4, 2014

To: Phosphorus Task Force & Advisory Committee

From: Phosphorus Study/Planning Team

Subject: Stickney Bio-P Influent Channel and Laboratory Mixed Liquor Fermentation Summary

1.0. Background

Volatile fatty acids (VFAs) are required as the precursor for enhanced biological phosphorus (P) removal (EBPR). There are a number of ways to generate VFAs internally for plants with relatively low influent VFAs, e.g. return activated sludge (RAS) fermentation and primary sludge fermentation. An emerging process for producing VFAs is mixed liquor (ML) fermentation, referred to as influent channel fermentation herein. Influent channel fermentation is an unmixed inline fermentation process. The fermentation of readily biodegradable chemical oxygen demand (rbCOD) in the ML to VFAs may produce the needed carbon (C) source for phosphate-accumulating organisms (PAOs) to grow and survive.

To encourage inline fermentation, the aeration and mixing in the activated sludge influent channel was stopped to encourage the ML to settle and a sludge blanket to accumulate and ferment on the channel bottom. The air to the channel was turned on for 5 to 15 minutes periodically to resuspend solids, prevent compaction of solids in the zone, and replace a portion of the sludge blanket for turnover of active solids.

2.0. Methods and Experiments

2.1. Inline Fermentation

At the beginning of the study, M&O staff fully opened all of the air valves in the east-west (EW) influent channel in Battery D, then turned off all the air mains to the influent channel.

On a routine basis at 10:00 a.m., air mains were turned on for approximately 5-15 minutes to resuspend a portion of the sludge blanket. Routine air blow-outs continued throughout the study.

M&R staff collected ML samples from the mixing channel corner (MCC) (beginning of the EW influent channel) and mixing channel (MC) (middle of the EW influent channel) at 9:30 a.m. (before blow-out) and 10:30 a.m. (right after blow-out) twice per week, weather permitting. The samples were measured for pH, temperature, TSS, ORP, VSS, sol COD, NH_3-N, NO_3-N, and ortho-P. This provided a recording of the change in nitrogen, C, and P levels in the influent channel. In order to identify the hydrolyzation and fermentation potential, attempts were made to grab a sample of the sludge blanket from the middle of the influent channel with a ponar sampler. These samples were scheduled to be analyzed for sol COD and VFA concentrations two times per week. Different blow-out schedules were tested, i.e. daily for three weeks, Monday and Friday for four weeks, and lastly Monday only for four weeks.

2.2. Laboratory Mixed Liquor Fermentation

ML samples were collected from the MC in Battery D on 2/24/14, 3/3/14, and 3/10/14. The ML samples were then placed in 5-gallon buckets. The test bucket for summer fermentation tests was placed in the pilot room at room temperature ranging from 19°C to 23°C with the lights off. The test bucket for winter fermentation tests was placed in the environmental room at 10°C on 2/24/14 and 4°C on 3/3/14 and 3/10/14 with the lights off. Grab samples were taken from the test buckets at time intervals of 3, 27, 51, and 75 hours, respectively. The ML samples were mixed gently before each grab sample. The collected samples were measured for pH, temperature, TSS, ORP, VSS, sol COD, NH_3-N, NO_3-N, and ortho P.

3.0. Results and Discussion

Table 1 summarizes the sol COD results of ML samples collected for the full-scale inline fermentation study with different blow-out schedules, i.e. daily for three weeks, Monday and Friday for four weeks, and lastly Monday only for four weeks. The average sol COD level shows no difference before and after blow-out regardless of the different blow-out schedules. It may due to the fact that fermented soluble C was consumed so quickly upon production that the ML sampling performed could not catch the release. Similarly, the average ORP in the test channel before and after the blow-out during the study period showed no change as well. The average changes before and after blow-out for NH_3-N, NO_3-N and ortho-P concentrations in the test channel were 0.101 mg/L, 0.009 mg/L and -0.007 mg/L, respectively, during the whole study period, i.e. essentially no change

In order to determine if a sludge blanket accumulated on the bottom of influent channel, an effort was made to collect a sludge sample with a ponar sampler. However, even after the longest blow-out schedule (once per week, Monday only), no sludge sample could be collected. This indicates that little to no sludge blanket was formed during the study period, which may be due to the relatively fast velocity (~1.7 feet per second) in the test channel.

Table 2 summarizes the sol COD results of the laboratory ML fermentation tests. With the ML sitting in the buckets, sol COD concentration increased up to 413 mg/L after three days' solids retention time (SRT) at room temperature. The ratios of sol COD to MLVSS in the tested ML shown in Table 3 ranged from 7.85 percent to 14.86 percent after three days SRT for summer fermentation tests. Due to a broken environmental room, only one ML winter fermentation was tested at 10°C; the other two tests were conducted in the sample storage room at 4°C. The average ending sol COD concentration for winter ML fermentation was 82 mg/L; this number would likely be higher if the tests were done at 10°C (please note two ML winter fermentations were tested at 4°C due to environmental room problems on 3/3/14 and 3/10/14). The ratios of sol COD to MLVSS ranged from 1.62 percent to 3.92 percent after three days SRT for winter fermentation tests.

Figure 1 shows the sol COD profile of Stickney ML laboratory fermentation in simulated summer and winter conditions. For both summer and winter ML fermentation tests, sol COD increased after one day of fermentation. A correlation between ORP and released sol COD concentration was graphed in Figure 2. An ORP value of about -125 mV or lower corresponds to a sol COD concentration of 100 mg/L or higher. Figure 3a shows all the test parameters against sampling time on 2/24/2014. Please note the winter fermentation on 2/24/2014 was conducted at 10°C. MLSS on 2/24/2014 was 4,400 mg/L, and MLVSS was 3,360 mg/L. It can be seen that sol COD was produced two to three times higher in the summer temperature than at the winter temperatures. However, ortho P release was only little different between summer or winter fermentation. Figures 3b and 3c show all the test parameters against time from the 3/3/14 and 3/10/14 fermentation tests in which winter fermentation was tested at 4°C (staff did not take an ORP reading at 75 hrs on 3/10/2014); therefore sol COD concentrations were much lower compared to sol COD from the 2/24/14 tests at 10°C.

In summary, a sludge blanket cannot be built up in the EW influent channel due to the high velocity without adding a baffle or some other device. Laboratory ML fermentation tests indicate that if we are able to generate a sludge blanket, a fair amount of sol COD can be produced at an SRT of three days depending on temperature.

TABLE 1: SOLUBLE CHEMICAL OXYGEN DEMAND RESULTS OF MIXED LIQUOR FROM INLINE FERMENTATION PILOT STUDY IN BATTERY D

	ST_D_MCC*		ST_D_MC**	
	Before	After	Before	After
Daily Blow Out (12/12/13 – 1/5/14)				
# of samples	3	3	3	3
Minimum	44	40	43	34
Maximum	102	117	87	104
Average	64	68	61	62
Monday & Friday Blow Out (1/6/14 – 3/9/14)				
# of samples	6	6	6	6
Minimum	37	39	37	37
Maximum	138	132	136	142
Average	65	63	61	61
Monday Blow Out (3/10/14 – 4/7/14)				
# of samples	5	5	5	5
Minimum	25	27	25	31
Maximum	126	94	149	214
Average	55	53	71	76

*Sampling point ST_D_MCC is in the corner of the NW and EW influent channels of Stickney Battery D.

**Sampling point ST_D_MC is in the EW influent channel of Stickney Battery D before entering aeration tank # 4.

TABLE 2: SOLUBLE CHEMICAL OXYGEN DEMAND RESULTS OF LABORATORY MIXED LIQUOR FERMENTATION TESTS*

	Summer				Winter			
	sol COD (mg/L)				sol COD (mg/L)			
Time	3 hr	27 hr	51 hr	75 hr	3 hr	27 hr	51 hr	75 hr
# of samples	3	3	3	3	3	3	3	3
Minimum	25	92	170	256	25	25	33	52
Average	28	127	193	342	28	38	63	82
Maximum	33	170	216	413	35	50	109	105

*Summer ML fermentation tests were conducted at room temperature; liquid temperatures ranged from 16°C to 23°C. Winter ML fermentation tests were conducted in an environmental room. Due to environmental room shut-down problems, one test (2/24/2014) was tested at 10°C and the other two were tested at 4°C; liquid temperatures ranged from 4°C to 13°C.

TABLE 3: SOLUBLE CHEMICAL OXYGEN DEMAND TO MIXED LIQUOR VOLATILE SUSPENDED SOLIDS RATIOS PERCENTAGE AT THREE-DAYS SOLIDS RETENTION TIME FOR LABORATORY MIXED LIQUOR FERMENTATION TESTS

Date	2/24/2014		3/3/2014		3/10/2014	
	Summer	Winter	Summer	Winter	Summer	Winter
Temperature (°C)	19–22	10	19–23	4	19–21	4
solCOD/MLVSS (%)	7.85	3.92	14.86	2.54	9.86	1.62

FIGURE 1: SOLUBLE CHEMICAL OXYGEN DEMAND PROFILE OF STICKNEY MIXED LIQUOR LABORATORY FERMENTATION TESTS UNDER SUMMER AND WINTER CONDITIONS (SOLID LINE FOR SUMMER FERMENTATION AND DASHED LINE FOR WINTER FERMENTATION)

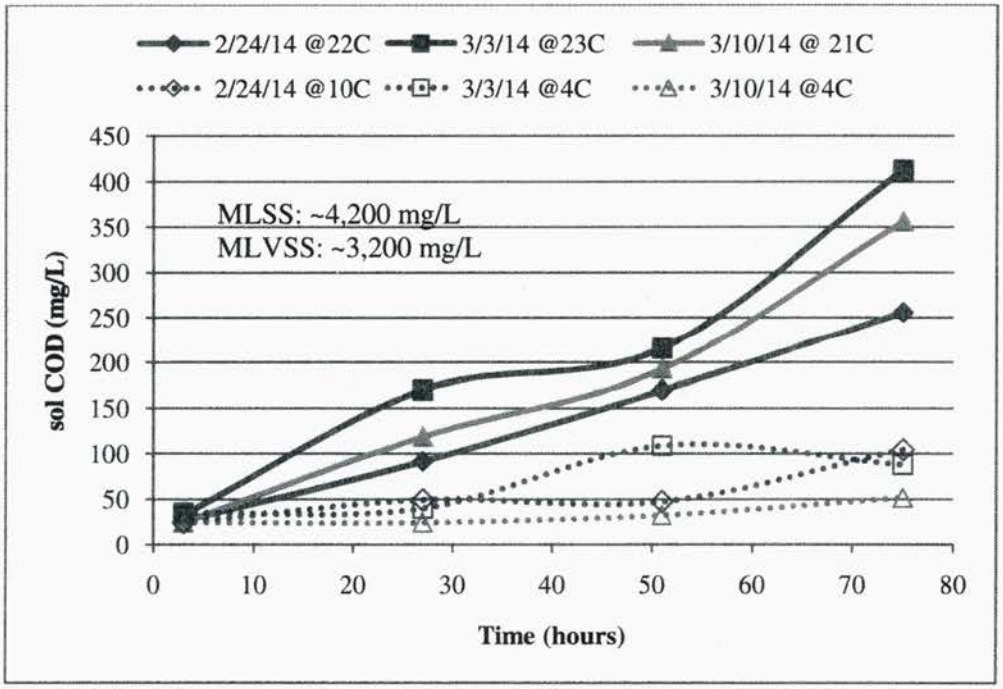


FIGURE 2: SOLUBLE CHEMICAL OXYGEN DEMAND AND OXIDATION-REDUCTION POTENTIAL RELATIONSHIP FROM THE LABORATORY MIXED LIQUOR FERMENTATION TESTS

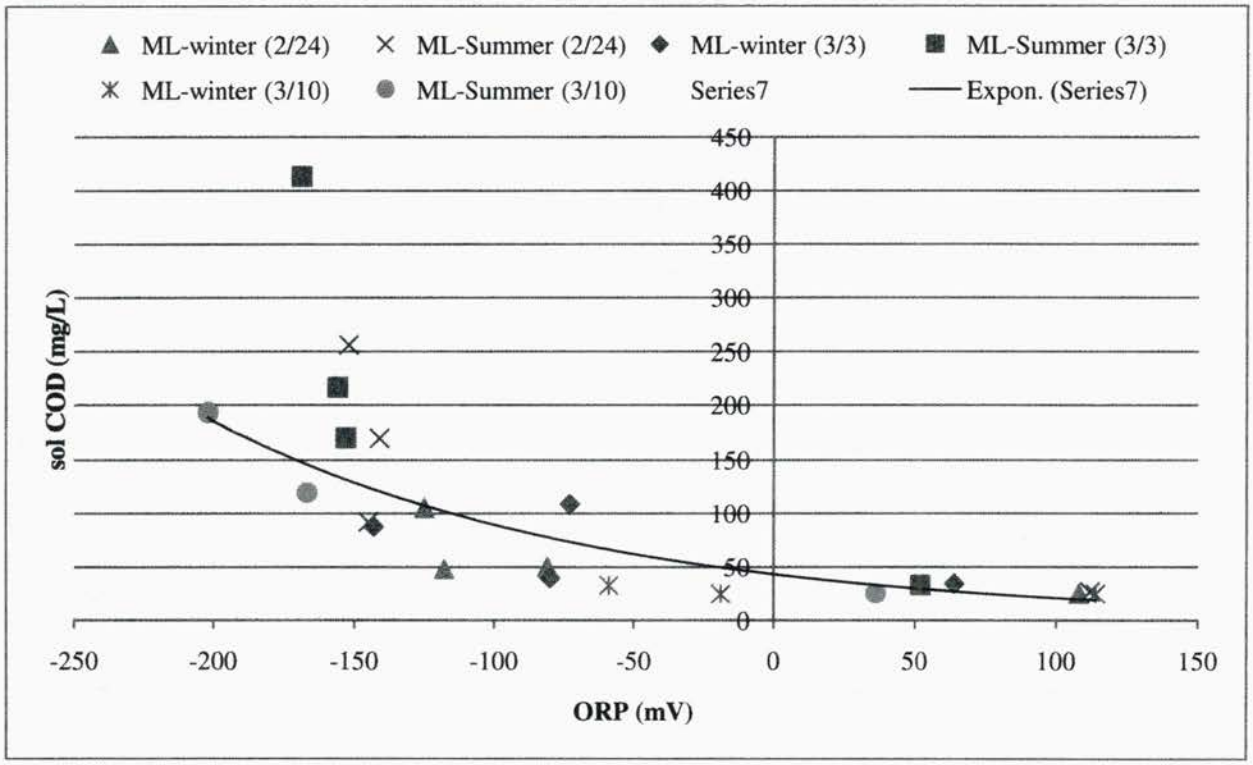
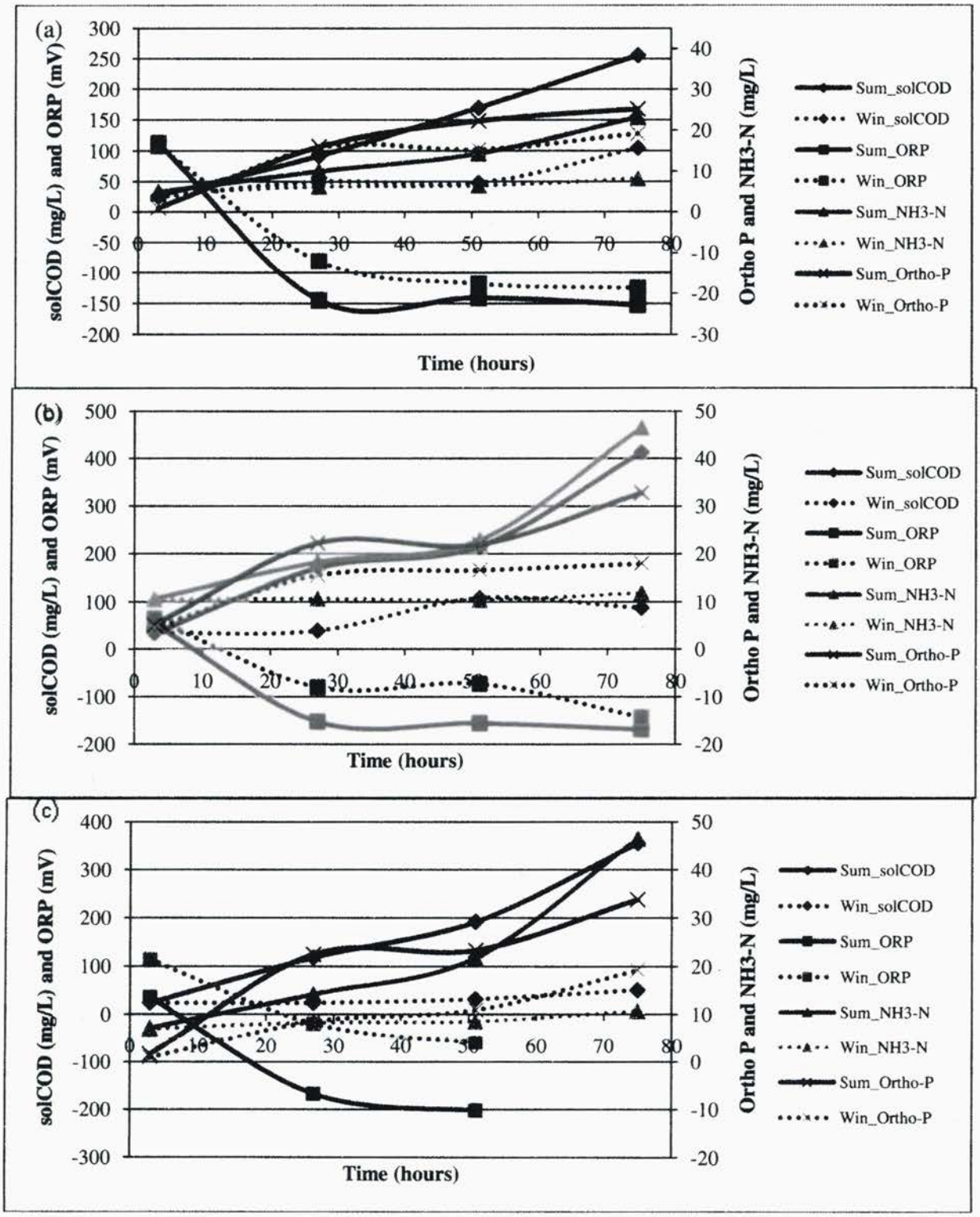


FIGURE 3: PROFILE OF ALL PARAMETERS FOR (a) 2/24/2014 FERMENTATION TEST (WINTER FERMENTATION TESTED AT 10 °C), (b) 3/3/2014 AND (c) 3/10/2014 FERMENTATION TESTS (WINTER FERMENTATION TESTED AT 4 °C)



APPENDIX F

GUIDELINES FOR DOCUMENT CONTENT

M&R DEPARTMENT ITEMS TO BUDGET AND ADMINISTRATIVE SECTION

Assistant Directors, Administrative Section Heads, and All Clerical Staff

Recently, we have noticed an increase in paper items being delivered directly to Dr. Granato's office, without them first being routed through my office or my staff's offices. Accordingly, Dr. Granato requested that a "reminder" be distributed to everyone, listing those items that should come here first. (Note: The lists, below, may not be exhaustive and are subject to revision, so reasonable judgment should be used.) Also, the lists only includes **paper items**, as electronic submittals are almost always already preset to go to their next destination(s):

Deliver to Marquita Hawkins:

1. All insurance-related documents for Purchase Orders and Contracts
2. Reports that need to be printed at Print Shop (PDF printer ready please)

Deliver to the or Ruba Abozir or JoAnn Stramm, et al. *(Revised)*:

1. Sole-source memos for Purchase Orders under $10,000
2. Service-agreement packets for items under $10,000
3. Documents pertaining to F&D goods only (no service) $25,000 or less
4. Memos to the Executive Director requesting approval of all Job Order Contract (JOC) matters

Deliver to Karen Bradley *(Revised)*:

ANY ITEM BELOW MAY BE ATTACHED TO A BOARD LETTER FOR GOODS AND SERVICES (usually $10,000 or more):

1. Purchase requisitions
2. Purchase Order change notices
3. Special memos to Procurement and Materials Management Department
4. Drafts of contract detailed specifications
5. Drafts of RFP specifications
6. Drafts of agreements
7. Memos to the Executive Director requesting authority to hire an outside consultant and issue an RFP
8. Memos to the Executive Director requesting authority to increase a project
9. Memos to the Executive Director requesting approval of an out-of-state certificate
10. Letters to consultants changing project completion dates and/or project values
11. Board Letter Questionnaires

Deliver to Michael Cohen:

1. Requests for FMLA
2. Requests for leaves of absence, supervisory-differential pay, acting pay, provisional appointments, and transfers
3. Conference/Seminar Approval forms for Training and Out-of-District Travel
4. All employee Expense forms and P-Card Approval Request forms
5. Requests for memberships and subscriptions
6. E-Learning applications/agreements
7. All employee performance evaluations, both annual and probationary
8. Requests for SAP and PBF account access and changes
9. Requests for a new MWRD computer account or changes to an existing account
10. Tuition-reimbursement requests

TYPIST AND PROOFREADER CHECKLIST
FOR MONITORING AND RESEARCH DEPARTMENT REPORTS

Please Check All Reports for the Following:	~~a~~-√	**Comments**
Margins (1)		
1-inch margin throughout. 1-inch Headers		
.50-inch margin for Footers		
Font (2)		
Times New Roman 12 – or 10.5 in special cases		
Format (3)		
Headings – 1st Order 2spaces after. 2nd Order 2 spaces before if no 1st. Order. 3rd. and 4th. Order, 1 space before each. 1 space after body heading and between paragraphs. (See Appendix F)		
Hyphens - No hyphens at the end of each page		
Table of Contents (4)		
No acronyms		
Page numbers should match the Table of Contents		
Titles should match the Table of Contents		
Tables and Figures (5)		
Column numbers should be decimally aligned		
Headings should be centered on Tables and Figures		
No acronyms		
Footnotes 11-point type. Periods after all footnotes		
Tables and Figures should follow text after being referenced in report.		
List of Acronyms (6)		
Include a List of Acronyms. No acronyms used in the Table of Contents, Titles, Tables, and Figures.		
Acronyms should be spelled out at first occurrence only in the text.		
Spell Check, Grammar, and Punctuation (7)		
Spell check and read the document to catch grammatical errors, punctuation, acronyms, and typos.		
Miscellaneous (8)		
"and" **not** "&"		
" Nd and th" **not** "ND and TH"		
"No." **not** "#"		
the "District" **not** "MWRDGC"		
Thomas **C.** Granato use middle initial		

INSTRUCTIONS FOR FORMATTING REPORTS
OCTOBER 2015

Style and Spacing

One-column, single-spaced, first line indented 0.50 inch. Leave two blank line between First-Order Headings and text. Leave two blank lines before a Second-Order Headings and one blank line after the heading, if it follows a First-Order Heading, do not leave any blank lines before the heading, but leave one blank line after the heading.. Leave one blank line before Third- and Forth-Order Headings and one blank line after the heading. See "Heading Styles" (Pages 11 – 12) for more detailed information.

Font. Times New Roman 12-point font size.

Margins. Top, bottom, left and right (one-inch margins), justified with hyphenation. Headers are one inch. Footers are .50 inch.

Table of Contents, Acknowledgement, and Disclaimer

No change from current M&R Department format (single-spaced, one-column format). The table should include section headings and major section subheading in the order they appear in the report, along with the pages on which they appear. The Acknowledgement and Disclaimer text if short, can be placed on the same page.

Bulleted and Enumerated Items

Bulleted, numbered, or lettered items should be indented 0.50-inch from the left and right margins. If any item in the list requires more than one line, indent the second line so that it begins under the first word in the line above. Leave one blank 12-point line before the start of the list and after the last line of the list. Insert one blank line between all items in the list (6- or 12-points spacing depending upon the length of list and/or report). Maintain consistent item spacing throughout the document.

X – *12 point blank line*

1. Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxx.

X – *6 or 12 point blank line depending upon length of list and/or report.*

2. Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.

X

3. Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.

X – *12 point blank line after last line of enumerated list.*

FORMAT FOR TITLE HEADING STYLES

The line spacing styles for Third- and Fourth-Order Headings have been revised for all IO Memos Abstracts, Letters, Reports and Informational Documents and are explained below and shown on Pages 11-12. Insert one blank line when the first-order heading begins in the center of the page for various reports.

X

FIRST-ORDER HEADING

X

X

First-Order Headings begin a new page and are centered across the entire page in boldface with all capital letters. Insert two blank lines after each First-Order Heading. Blank line spacing should be equal to the type size being used in the text.

X

First-Order Headings in Memorandum Reports and Technical Memorandum Reports do not have to begin a new page, they can be placed in the center of the page, with two blank lines before the heading and one blank line after it, depending upon the text that follows.

X

X

Second-Order Heading

X

Second-order headings start flush with the left margin on a line by itself. Type second-order headings in bold caps and lowercase with no ending punctuation. Insert two blank lines before a second-order heading when it follows plain text, or a second-, third-, or fourth-order heading. The first line of text in second-order heading paragraphs is indented .50-inch from the left margin. Leave one blank line between the heading and the paragraph text. Leave one blank line after the paragraph text.

X

Do not leave any blank lines before a second-order heading when it follows a first-order heading.

X

Third-Order Heading. A third-order heading begins a new paragraph and is immediately followed by text on the same line. Indent the first line of a third-order heading .50-inch from the left side margin. Type the heading in bold caps and lowercase. The third-order heading is punctuated with a period. The text begins one or two spaces after the heading punctuation. Insert one blank line after the third-order heading paragraph and subsequent paragraphs. If a second-order heading immediately follows, do not leave any blank lines at the end of the third-order heading paragraph.

X

Fourth-Order Heading. A fourth-order heading begins a new paragraph and is immediately followed by text on the same line. Indent the first line of a fourth-order heading .50-inch from the left side margin. Type in italics caps and lowercase. Fourth-order headings are punctuated with a period. Leave one blank line after the fourth-order heading paragraph and subsequent paragraphs. If a second-order heading immediately follows, do not leave any blank lines at the end of the fourth-order heading paragraph.

FORMATTING FOR TABLES AND FIGURES

Tables and Figures should be prepared as stand-alone documents in the event they may be extracted from the report and used as attachments to other correspondence or documents.

Table and Figure Titles

Do not use acronyms in Table or Figure titles. Throughout the report, the acronyms should be defined at first use and then used throughout the text without further identification. Do not alternate between the acronym and the full name. Insert any acronyms used in the List of Acronyms in the front matter of the report. Refer to Pages xi – xiv for a complete list of approved acronyms.

Continuation pages of tables and figures should include the table title, formatted with the table or figure number and the word (Continued): then the title of the table or figure, e.g. "TABLE 5 (Continued): TOTAL BETA CONCENTRATION"

If Tables or Figures are indicated in an appendix, they should reflect the appendix number in the table title. They should also be included in the List of Tables or Figures.

Numerical Columns in Tables

Numbers within columns should be right-hand justified in the center of the column, unless they contain decimal points, in which case the numbers should be aligned at the decimal point. If the column contains both numbers with and without decimals, align the numbers in the column at what would be the decimal point location.

Proofread ALL titles and page numbers against the Table of Contents to ensure correctness.

LIST OF ACRONYMS

District	Metropolitan Water Reclamation District of Greater Chicago
H_2S	hydrogen sulfide
HASMA	Harlem Avenue Solids Management Area
LASMA	Lawndale Avenue Solids Management Area
M&O	Maintenance and Operations
M&R	Monitoring and Research
ppbv	parts per billion by volume
RASMA	Ridgeland Avenue Solids Management Area
SDAs	solids drying areas
SDS	solids drying site
SPS	solids processing site
WRP	water reclamation plant

TABLE 2: SIDE-BY-SIDE COMPARISON BETWEEN THE RESULTS OF ANALYSIS (AVERAGE VALUES) FOR EFFECTIVE DOSE AT THE FIFTIETH PERCENTILE, AMMONIA, AND HYDROGEN SULFIDE BY THE MONITORING AND RESEARCH DEPARTMENT AND THE ILLINOIS INSTITUTE OF TECHNOLOGY

	ED_{50} (D/T)		NH_3 (ppmv)		H_2S (ppmv)[1]	
	District[2]	IIT	District[3]	IIT	District[3]	IIT
Pretreatment Building						
Coarse Screen Area	92	70	32	3	2.61	0.49
Fine Screen Area	96	72	41	5	4.39	0.49
Above Wet Well	92	76	33	4	3.10	0.42
Screening Conveyors	92	79	33	4	3.10	0.47
South of Coarse Screen	154	63	36	2	2.93	0.80
North of Fine Screen	80	63	48	2	5.14	0.65
Thickening Building						
Middle of Two GBTs in Service	68	32	6	4	0.07	0.06
Near Plastic Curtain Wall	19	20	8	3	0.07	0.03
Middle of the Thickening Building	14	15	9	3	0.03	0.02

[1]Jerome instantaneous measurements (two measurements per day).
[2]Average of one or two days of measurements.
[3]Average of two measurements per sampling day for eleven days.
Note: It is assumed that the IIT's measurements were made in the following locations:

Coarse Screen Area: Figure 2, Locations 1 and 4, TB3 and TB4; Fine Screen Area: Figure 1, Locations 1 and 4, TB1 and TB2; Above the Wet Well: Figure 2, Location 1, TB3 and TB4; Screening Conveyors: Figure 2 Locations 1 and 4, TB3 and TB4; South of Coarse Screen: Figure 2, Locations 2 and 3 and TB3; North of Fine Screen Room: Figure 1, Locations 5 and 6, and TB2 ; Middle of two GBTs in service: Figure 3, Location 11, and TB5; Near Plastic Curtain Wall: Figure 3, Location 10, and TB6; Middle of the Thickening Building: Figure 3, Locations 11 and TB5).

TABLE 3: A COMPARISON BETWEEN THE JEROME AND ODALOG HYDROGEN SULFIDE RECORDINGS AT DIFFERENT AREAS INSIDE THE PRETREATMENT AND THICKENING BUILDINGS

	Fine Screen[1]				Coarse Screen[1]				GBT Room[2,3]	
	Jerome (3)	OdaLog (ODH1)	Jerome (6)	OdaLog (ODH2)	Jerome (2)	OdaLog (ODH3)	Jerome (6)	OdaLog (ODH4)	Jerome (2)	OdaLog (ODL1a)
Mean (ppbv)	3,197	2,906	4,911	2,490	2,996	1,632	1,802	1,607	44	13
Max (ppbv)	14,000	4,480	15,000	3,670	7,650	2,730	6,400	2,850	106	27
Stdev (ppbv)	4,044	1,135	5,098	986	2,310	688	1,830	722	34	6

Note: OdaLog (8-hour average); Jerome instantaneous measurements (average of two readings).
[1]Numbers in parentheses show the monitoring locations as shown on Figures 1 and 2.
[2]Numbers in parentheses show the monitoring locations as shown on Figure 3.
[3]Additional data at different locations in the GBT room were not included as the OdaLogs malfunctioned.

Sample 6

TABLE 4: STATISTICAL DATA FOR CARBON DIOXIDE CONCENTRATIONS IN DIFFERENT AREAS INSIDE THE PRETREATMENT AND THICKENING BUILDING

	Carbon Dioxide Concentration (ppmv)		
	Average	Max	Stdev
FINE SCR-1	1,178	1,547	151
FINE SCR-2	949	1,253	128
FINE SCR-3	938	1,063	71
FINE SCR-4	1,056	1,228	101
FINE SCR-5	1,113	1,262	92
FINE SCR-6	1,076	1,207	109
COARSE SCR-1	1,459	2,392	335
COARSE SCR-2	1,437	2,394	338
COARSE SCR-3	1,456	2,433	348
COARSE SCR-4	1,492	2,498	366
COARSE SCR-5	1,577	2,715	418
COARSE SCR-6	1,468	2,147	305
GBT-1	821	1,026	82
GBT-2	805	879	43
GBT-3	833	900	45
GBT-4	822	894	45
GBT-5	785	842	31
GBT-6	820	1,042	81
GBT-7	871	1,364	178
GBT-8	807	893	45
GBT-9	843	1,017	68
GBT-10	843	951	53
GBT-11	879	1,001	82

TABLE 3: SUMMARY OF STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS ANALYSIS OF THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM

Strengths

Benefits to District

1. Low hauling cost due to proximity of outlets and high solids content of Class A products.
2. Diverse customer base and application types offer potential for a sustainable program.
3. User groups (e.g. Illinois Association of Park Districts) enhance outreach programs.
4. Higher quality of air-dried biosolids results in less PR issues compared to the Class B.
5. Program provides a direct benefit to the District constituents (improves public image and builds partnership).
6. Use of biosolids within District service area protects programs operating outside District service area.

Benefits to Users

1. Cost savings to users operating on limited budgets builds a returning customer base.
2. Environmentally friendly.
3. Perform better than fertilizer.
4. Conserves water by reducing irrigation frequency.
5. Improves soil health and thus turf performance.

Weaknesses

Demand and Availability

1. Availability and use of air-dried biosolids is weather-dependent.
2. Demand and availability not guaranteed.

Public Education

1. Customers have limited knowledge on benefits and resources (e.g. specialized spreader) to use.
2. Proximity to urban and residential areas creates potential nuisance problems due to odor and dust from air-dried biosolids.

Biosolids Quality

1. Limited guarantee on nitrogen supply and physical characteristics.
2. Odor and dust potential of air-dried biosolids.

Logistical Hurdles

1. New users lack spreading capability.
2. Biosolids are bulky compared to chemical fertilizers.
3. Extensive coordination required to match generator, spreading contracts, and users' schedules.

State Regulations

1. Setback distance and other restrictions in Illinois biosolids rule.
2. Biosolids defined as "waste" in Illinois Environmental Protection Act.

Opportunity

1. High cost of fertilizers.
2. Tight budgets of potential users.
3. Support from other biosolids generators and researchers.
4. Demonstrated performance.
5. Quality improvement potential.
6. Rising societal consciousness of sustainability.

Threat

1. Regulatory restrictions due to potential environmental impacts of biosolids phosphorus.
2. Emerging issues related to safety of land application practices.
3. Negative public perception due to lack of awareness and education on benefits and safety of biosolids.
4. Odor and dust potential of air-dried biosolids.

FIGURE 1: NUMBER OF BIOSOLIDS USERS UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM BETWEEN 2008 AND 2014

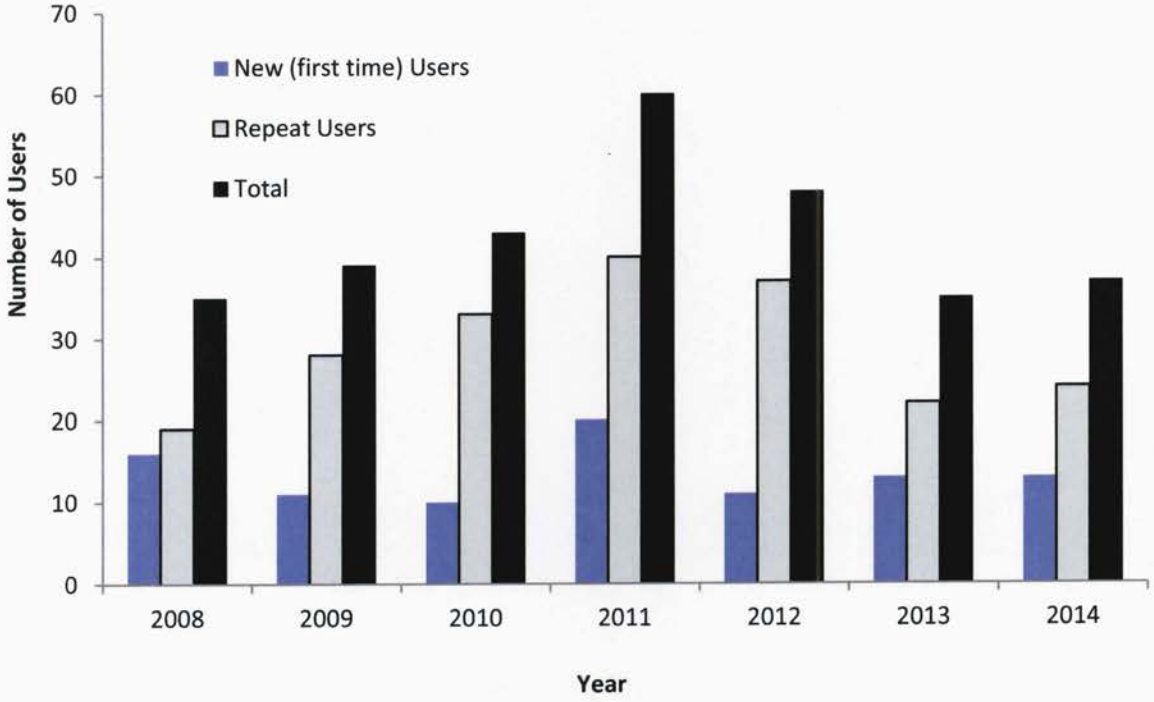


FIGURE 3: MONTHLY BIOSOLIDS USE UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM DURING 2012, 2013, AND 2014

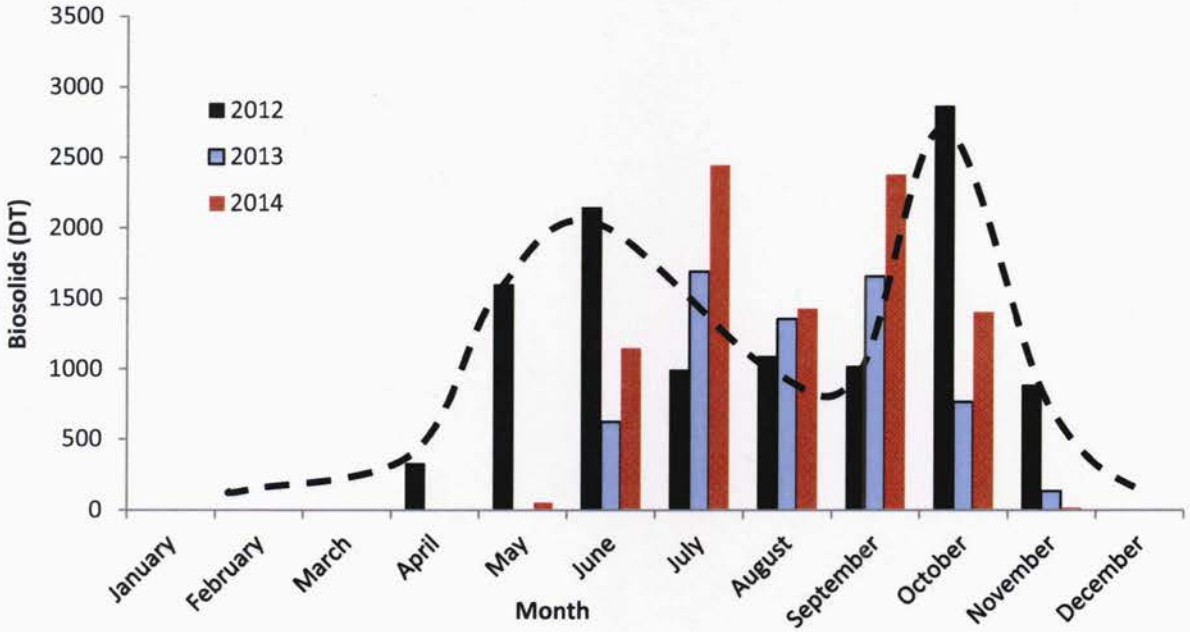
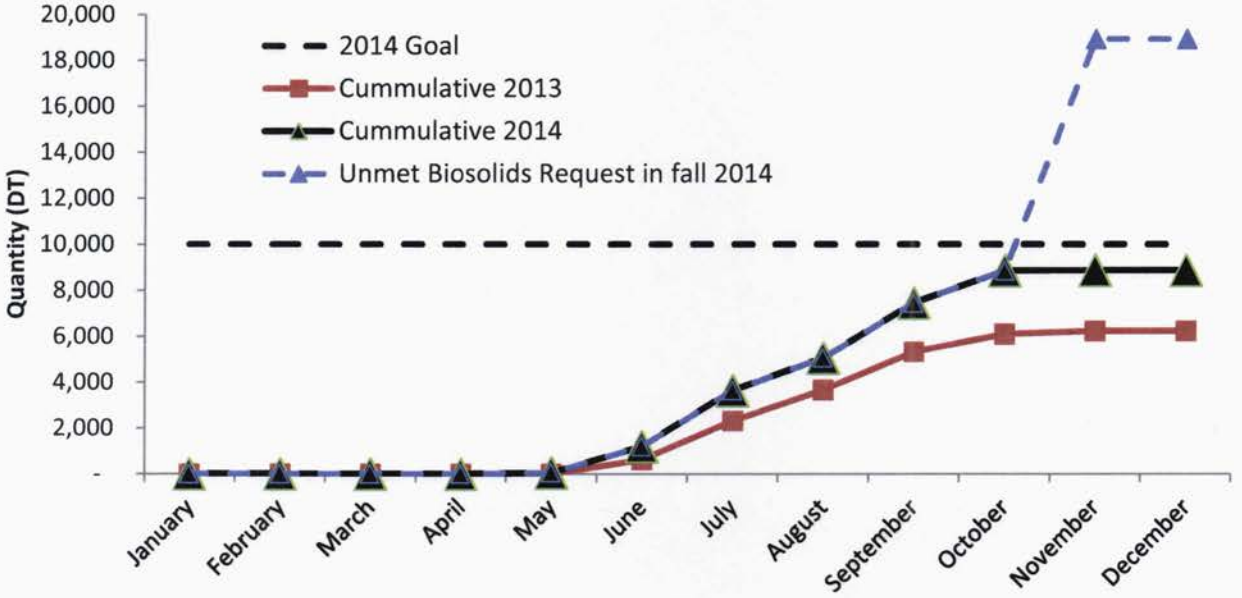


FIGURE 4: CUMULATIVE BIOSOLIDS USED UNDER THE CONTROLLED SOLIDS DISTRIBUTION PROGRAM IN 2013 AND 2014 AND THE 2014 GOAL



1. ED_{50} by IIT identified easily noticeable odor conditions. In general, ED_{50} levels exceeding 100 can be considered potentially offensive for visitors to the premises; however, an ED_{50} of 200 might not be considered an uncomfortable environment for the resident staff.

The following recommendations are made considering the results of monitoring by the M&R Department:

1. For the Pretreatment Building, IIT has recommended modifying the ventilation system and cleaning the screens and conveyors. The District agrees, and has specified the gradient of concentration of the odorous compounds. We also recommend determination of ventilation rates considering the District's study based on the maximum measured concentrations of CO_2 in the Coarse Screens, Fine Screens, and the GBT Buildings in designing the ventilation system. To accomplish this, the following area-specific mass flux equation (Emission Rate [ER]) could be used to set the air exchange rate (AER) for rooms in both the Pretreatment and the Thickening Buildings based on the aforementioned maximum concentration.

$$ER = \frac{V \times AER \times (C - C^{\circ})}{A}$$

Where

V = Volume of the room
AER = Air exchange rate
C = Concentration of the emitted compound
C° = Ambient (control) concentration
A = Exposed area

This will aid in determination of a conservative AER to reduce the concentration of odorous compounds to below OSHA's prescribed limits for H_2S, CO_2, and NH_3 inside the building. Using this equation, ER needs to be minimized using temporal variation (on an 8-hour period) of measured indoor concentrations of CO_2 corresponding to different AERs until C- C ° becomes negligible. This is the optimum AER for a specific room.

2. A proper ventilation rate to provide an air change rate of 12/hour is suggested by the M&R Department to conform to the NFPA recommendations for both buildings. The gradient of CO_2 concentrations identified in this study can provide guidance on the installation of proper location for intakes, exhausts, and exhaust fans at the Pretreatment and Thickening Buildings to provide cleaner air to the indoor environment of these two building in a short period of time (reduced air exchange rate).