

## 10-10-Company Wide

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
10-10001	2	1-Jun-09	Standard Operating Procedures (SOPs)	none	81-5, -9, -16 -65	Current
10-10002	4	1-Jul-10	Corrective and Preventive Action	none	81-62	Current
10-10003	1	16-Aug-10	Use of the Term A2LA and the A2LA Accredited Symbol	none	NA	Current
10-10004	0	2-Nov-09	Documentation and Handling of Original Observations (Raw Data) and Records	none	81-18	Current
10-10005	0	15-Dec-08	Laboratory Notebooks and Log Books: Distribution and Archiving	none	61-12	Current
10-10006	0	15-Dec-08	Documentation Procedures for Registration of Equipment and Instruments	none	81-11	Current
10-10007	Retired		Management Review	none	NA	Retired
10-10008	0	15-May-06	Sample Receipt and Log-in of Organic, Inorganic, and Micro Samples	none	81-50	Current
10-10009	0	2-Mar-09	Procedure to Follow for an On Site Inspection/Audit by a Regulatory Agency or Client	none	61-9	Current
10-10010	In Progress		New Employee Training	none		In Progress
10-10011	0	1-Jun-09	Complaints and Customer Feedback	none	NA	Current
10-10012	Retired		Action Planning	none	NA	Retired
10-10013	3	15-Jun-09	MVTL Document Control	none	NA	Current
10-10014	In Progress		Computer Security	In Progress	In Progress	In Progress
10-10015	0	27-Sep-10	Maintaining Resumes (CVs)	none	81-6	Current
10-10017	0	1-Sep-08	Non-GLP/GCP/VICH GL9 Archiving Procedures	none	81-8	Current
10-10018	0	15-Aug-08	Storage, Transportation and Check-out of Physical Reference Standards	none	NA	Current
10-10019	In Progress		Training Documentation	In Progress	In Progress	In Progress
10-10020	In Progress		Responding to Audits	In Progress	In Progress	In Progress
10-10021	0	16-Aug-10	Maintenance and Use Logs	GLP Regulations	81-51	Current
81-001	5	1-Aug-02	Establishing Minimum Safety Requirements	none	NA	Current
81-006	Retired		Maintaining Resumes (CVs) and Training Records	none	10-10015	Retired
81-018	Retired		Defining, Recording and Storage of "Raw Data"	none	10-10004	Retired
81-025	6	3-Sep-02	Chain of Custody Policies and Procedures	none	NA	Current
81-043	3	15-Jun-05	Handling of Hazardous Waste, Sewage Disposal and Chemical Spill	none	NA	Current

## 10-10-Company Wide

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
81-048	3	15-Jan-06	Documenting Amendments and Deviations to GLP Study Protocols, SOPs and Methods	none	NA	Current
81-052	4	1-Aug-05	Training and Documentation of Training	none	NA	Current

## 10-11-New Ulm Front St

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
10-11001	0	1-Jul-10	Monitoring the De-ionized Water Quality at the New Ulm Front Street Location	AOAC Guidelines for Food and Pharmaceuticals, ASTM D1193-06, DW EPA (5)	81-038 & 81-032	Current
81-013	5	18-Feb-03	Visitor Policies	none	NA	Current
81-014	6	15-May-03	Building Security at 1126 N. Front Street and 326 Center Street, New Ulm, MN	none	NA	Current
81-038	Retired		Monitoring Deionized Water Quality	none	10-11001	Retired

# 10-12-New Ulm Center St

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
12-026	0	15-Nov-05	Deionized water system at Center Street	none	NA	Current

## 10-13-Nevada

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
19-001	0	3-May-04	Sending Data to the IDNR	none	NA	Current
19-017	Retired		Maintenance of the Desiccators	none	NA	Retired
19-020	0	21-Apr-98	How to use the Napco Slow Exhaust Autoclave	none	NA	Current
19-022	1	3-May-04	Shipping Procedures	none	NA	Current
19-023	0	3-May-04	Correcting Rejects from the IDNR	none	NA	Current
59-017	Retired		Building Security at 51 West Lincoln Way, Nevada, IA	none	NA	Retired
59-018	Retired		Visitor Policies	none	NA	Retired

## 20-10-Sales & Service

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
20-10001	1	15-Nov-08	MVTL Price Quote Forms	none	NA	Current
20-10002	1	15-Nov-08	Client Specific Contract Approval	none	NA	Current

## 30-11-Shipping

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
30-11001	In Progress		Shipment Between Labs	In Progress	In Progress	In Progress
81-030	2	1-Jul-05	Damaged Hazardous Material Shipments	none	NA	Current
81-035	4	17-Feb-03	Sample Shipment to New Ulm Inorganic and Organic Laboratories	none	NA	Current

## 30-12-Couriers

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
81-064	0	18-Jul-03	Procedure for Taking Water Samples and Environmental Swabs	none	NA	Current
81-075	0	2-May-05	Meat Sampling for Fat Analysis	none	NA	Current

## 30-13-Field Service

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
30-13001	0	10-Oct-08	Low Level Mercury Sampling Procedure	EPA Method 1669	NA	Current
30-13002	In Progress		Sample Collection, Preservation and Transportation for MVTL Field Service Personnel	none	31-053, 31-015, 31-029, 31-054	In Progress
30-13003	In Progress		Quality Control Procedures for Field Sampling	non	31-013	In Progress
30-13004	In Progress		Stabilization Monitoring Well Sampling Procedure		31-018	In Progress
30-13005	In Progress		Recovery Monitoring Well Sampling Procedure		31-019	In Progress
30-13006	In Progress		Total Well Depth Measurement Procedure		31-006	In Progress
30-13007	In Progress		Generation of Flow Study Reports using ISCO Flow Link 4 Software		31-049	In Progress
30-13008	In Progress		Field Service Reporting		31-022	In Progress
30-13009	In Progress		Static Water Level Procedure		31-005	In Progress
30-13010	In Progress		Maintaining Maintenance Logbooks for Field Service Instruments and Equipment		31-020	In Progress
30-13011	In Progress		In-House Cleaning of Field Service Equipment		31-021	In Progress
30-13012	In Progress		Cleaning Field Service Equipment in the Field		31-014	In Progress
30-13013	In Progress		IPAC Operation		31-004	In Progress
30-13014	In Progress		Documentation of pH, Conductivity and Dissolved Oxygen on Field Calibration Sheets		31-050	In Progress
30-13015	In Progress		Operation of Timco/Monoflex IVP Bladder Pump Controller		31-001	In Progress
30-13016	In Progress		Procedure for Charging ISCO 947 Lead-Acid Flow Logger Batteries		31-042	In Progress
30-13017	In Progress		Procedure for Charging ISCO 947 Lead-Acid Flow Logger Batteries		31-041	In Progress
30-13018	In Progress		Procedure for Charging Isco Lead-Acid Wastewater Sampler/4230 Bubbler Batteries		31-040	In Progress
30-13019	In Progress		Operation of Timco Model #002085 Air Compressor		31-039	In Progress
30-13020	In Progress		Operation of Thomas Ultra Air-Pac Compressor		31-038	In Progress
30-13021	In Progress		Calibration of YSI 600 Sonde & 650 Water Quality Meter		31-052	In Progress
30-13022	In Progress		YSI Probe Maintenance		31-051	In Progress
30-13023	In Progress		Calibration of YSI 6820 Probe		31-026	In Progress
30-13024	In Progress		Procedure for Taking Stabilization of Parameters in Field with YSI 6820 Probe		31-028	In Progress

## 30-13-Field Service

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
30-13025	In Progress		Procedure for Maintenance of YSI 6820 Multi-Parameter Water Quality Monitor		31-031	In Progress
30-13026	In Progress		Operation of Redi-Flo Variable Frequency Drive Grundfos SI/MP 1 Box		31-032	In Progress
30-13027	In Progress		Operation of Honda 3500 EG Electric Generator		31-033	In Progress
30-13028	In Progress		Operation of Red-Flo Variable Frequency Drive Grundfos BM/MP 1 Control Box		31-034	In Progress
30-13029	In Progress		Operation of ISCO Model 4150 Area Velocity Flow Logger		31-035	In Progress
30-13030	In Progress		Operation of ISCO Model 4230 Bubbler Flow Meter		31-036	In Progress
30-13031	In Progress		Operation of the Pelsue Air Pac Model 1485B Manhole Blower		31-037	In Progress
30-13032	In Progress		Procedure for Using Landfill Soil Gas Monitor Landtec GA 90 Gas Analyzer		31-045	In Progress
30-13033	In Progress		Interrogation of ISCO Model 4150 Area Velocity Flow Logger		31-048	In Progress
31-001	0	11-Mar-04	Operation of Timco/Monoflex IVP Bladder Pump Controller	none	NA	Current
31-003	0	11-Mar-04	Operation of Geoguard Master-Flo Bladder Pump Controller	none	NA	Current
31-004	0	12-Mar-04	IPAC Directions for Operation	none	NA	Current
31-005	1	11-Mar-04	Procedure for Taking a Static Water Level in the Field	none	NA	Current
31-006	2	11-Mar-04	Procedure for Taking a Total Well Depth Measurement	none	NA	Current
31-007	0	31-Jan-97	Procedure for Measuring Conductivity of Sample Solutions in the Field	none	NA	Current
31-011	1	3-Mar-04	Operation of the Stevens Flow Recorder	none	NA	Current
31-013	0	11-Mar-04	Procedure for Quality Control in Field Sampling	none	NA	Current
31-014	0	11-Mar-04	Cleaning Field Service Equipment in the Field	none	NA	Current
31-015	0	11-Mar-04	Collection of Surface Water Samples	none	NA	Current
31-016	1	3-May-04	Field Filtration for Dissolved Analytes	none	NA	Current
31-018	1	12-Mar-04	Procedure for Conducting the Sampling of a Stabilization Monitoring Well	none	NA	Current
31-019	1	12-Mar-04	Procedure for Conducting the Sampling of a Recovery Monitoring Well	none	NA	Current
31-020	0	3-Mar-04	Monitoring Maintenance Logs for Field Service Instruments and Equipment	none	NA	Current
31-021	1	12-Mar-04	Cleaning Field Service Equipment In-House	none	NA	Current
31-022	0	3-Mar-04	Field Service Reporting	none	NA	Current

## 30-13-Field Service

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
31-026	1	12-Mar-04	Calibration of YSI 6820 Probe	none	NA	Current
31-028	1	12-Mar-04	Procedure for Taking Stabilization of Parameters in Field with YSI 6820 Probe	none	NA	Current
31-029	0	11-Mar-04	Procedure for Field Preservation of Samples	none	NA	Current
31-031	1	11-Mar-04	Procedure for Maintenance of YSI 6820 Multi-Parameter Water Quality Monitor	none	NA	Current
31-032	0	3-May-04	Operation of Redi-Flo Variable Frequency Drive Grundfos SI/MP 1 Box	none	NA	Current
31-033	0	3-May-04	Operation of Honda 3500 EG Electric Generator	none	NA	Current
31-034	0	15-Apr-04	Operation of Red-Flo Variable Frequency Drive Grundfos BM/MP 1 Control Box	none	NA	Current
31-035	0	15-Apr-04	Operation of ISCO Model 4150 Area Velocity Flow Logger	none	NA	Current
31-036	0	15-Apr-04	Operation of ISCO Model 4230 Bubbler Flow Meter	none	NA	Current
31-037	0	12-Mar-04	Operation of the Pelsue Air Pac Model 1485B Manhole Blower	none	NA	Current
31-038	0	12-Mar-04	Operation of Thomas Ultra Air-Pac Compressor	none	NA	Current
31-039	0	12-Mar-04	Operation of Timco Model #002085 Air Compressor	none	NA	Current
31-040	0	12-Mar-04	Procedure for Charging Isco Lead-Acid Wastewater Sampler/4230 Bubbler Batteries	none	NA	Current
31-041	0	12-Mar-04	Procedure for Charging ISCO 947 Lead-Acid Flow Logger Batteries	none	NA	Current
31-042	0	15-Apr-04	Use of HACH Model 2100P Turbidimeter	none	NA	Current
31-045	0	15-Apr-04	Procedure for Using Landfill Soil Gas Monitor Landtec GA 90 Gas Analyzer	none	NA	Current
31-048	0	11-Mar-04	Interrogation of ISCO Model 4150 Area Velocity Flow Logger	none	NA	Current
31-049	0	6-Jul-01	Generating Flow Study Reports Using ISCO's Flowlink 4 Software	none	NA	Current
31-050	0	3-Mar-04	Using Field Calibration Log Sheets for pH, Conductivity, and Dissolved Oxygen	none	NA	Current
31-051	0	3-Mar-04	YSI Probe Maintenance	none	NA	Current
31-052	0	11-Mar-04	Calibration of YSI 600 Sonde & 650 Water Quality Meter	none	NA	Current
31-053	0	12-Mar-04	Sample Collection and Transportation	none	NA	Current
31-054	0	11-Mar-04	Groundwater Sample Collection by Bailer, Bladder Pump or Whale Pump	none	NA	Current
C18023	1	7-Feb-91	Carbon Dioxide - Field	Standard Method 4500CO2 C	NA	Current
C78023F	1.1	29-Sep-93	Determination of Conductivity - Field	EPA 120.1	NA	Current

## 30-14-Maintenance

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
81-032	Retired		Maintaining MVTL's Laboratory Water System	none	10-11001	Retired
81-039	1	30-Oct-02	Pest Control	none	NA	Current

## 30-15-Supply Management

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
30-15001	0	1-Dec-09	Receiving Supplies into Inventory - Front Street Location Only	none	81-44	Current
81-044	Retired		Receiving Supplies into Inventory	none	NA	Retired
81-045	1	20-Apr-01	Consuming and Deleting Supplies from Inventory	none	NA	Current
81-046	1	23-Apr-01	Physical Inventory Procedures	none	NA	Current

## 30-16-Glassware

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
21-43	7	1-Aug-05	Organic Chemistry Glassware Cleaning Procedures	none	NA	Current
30-16001	0	1-Jun-06	Washing of Dishware for Micro Lab	none	41-54	Current
30-16002	0	15-Sep-06	Cleaning Procedure for Stainless Steel Bailers	none	21-110	Current
30-16003	In Progress		Organic Chemistry Glassware Cleaning Procedures	In Progress	In Progress	In Progress

## 40-10-Production

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-10001	0	1-Sep-06	The Calibration and Use of Temperature Monitoring Devices	none	81-21	Current
40-10002	0	1-Aug-07	Maintenance of Desiccators	none	81-71	Current
40-10003	0	2-Jun-08	Verification and Use of Electronic Balances	none	81-40, 12-7, 19-5	Current
40-10004	0	1-Jan-07	Identification, Calibration, Use and Maintenance of Volumetric, Serological and Mechanical Pipets and Dispensers	none	21-74, 21-54, 21-55, 21-43, 51-6, 81-58, 81-61	Current
40-10005	0	4-Sep-07	Labeling Reagents and Standards	none	81-31	Current
40-10006	0	1-Oct-06	Operation and Maintenance of Vacuum Pumps	none	81-70	Current
40-10007	0	1-Jan-07	Monitoring and Maintenance of Ambient Storage areas, digestion blocks, freezers, incubators, ovens, refrigerators, and waterbaths	none	81-49, 81-53	Current
40-10008	0	2-Nov-09	Calibration Verification, Operation and Maintenance of Centrifuges	none	21-51	Current
40-10009	In Progress		MDL	In Progress	In Progress	In Progress
40-10010	In Progress		Sample Storage	In Progress	In Progress	In Progress
40-10011	1	1-Jul-10	Calculation for the Estimation of Measurement Uncertainty	none	81-54	Current
40-10012	In Progress		Control Charting and Trending	In Progress	In Progress	In Progress
40-10013	0	1-Feb-09	Timer Verification	none	81-067	Current
40-10014	0	26-Oct-09	Investigation of Out of Specification (OOS) Results for Client Samples	none	81-41.2	Current
40-10015	In Progress		Report Approval, Non-GLP		81-17	In Progress
81-017	Retired		Report Approval, Non-GLP	none	NA	Retired
81-028	3	3-Sep-02	Emergency Procedure for Sample Storage During Major Failure	none	NA	Current
81-029	5	3-Sep-02	Performing Method Detection Limit Studies	none	NA	Current
81-042	1	15-Jul-04	Preparation and Standardization of Sodium Hydroxide Solutions	none	NA	Current
81-051	0	27-Sep-02	Maintenance, Calibration and Use Logs	none	NA	Current
81-056	1	2-Aug-04	Maintenance of Various pH Meters and Electrodes	none	NA	Current
81-057	0	1-Jul-04	Standardization of Acid Solutions	none	NA	Current
81-060	1	1-Jul-05	Recording and Retaining Analytical Standards & Reagents	40 CFR Part 160.105, 21 CFR Part 58.105	NA	Current

## 40-10-Production

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
81-063	0	7-Jul-03	Sample Storage and Disposal	none	NA	Current
81-066	0	1-Jul-04	Preparation of Non-Aqueous Samples for pH Determination	none	NA	Current
81-073	0	15-Apr-05	Operation and Maintenance of the Labconco Freeze Dryer	none	NA	Current
81-077	0	15-Jul-05	Significant Figures and Rounding of Numbers for Calculations and Measurements	none	NA	Current

## 40-11-Login

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
19-012	1	16-Aug-04	Logging-In Inorganic Samples	none	NA	Current
59-001	1	15-Jun-04	Soil Sample Log-In	none	NA	Current

## 40-12-Sample Prep

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
11-047	Retired		Dry Ashing of Feed, Food and Manure Samples for Analysis by ICP or Flame Atomic Absorption	none	NA	Retired
11-072	1	22-Mar-01	Preparation of Potable Water Samples and Filtered Water Samples for Metals Analysis	none	NA	Current
12-009	1	1-Jun-04	Wet Digestion Procedure for Mineral Samples and Bas Mix Samples	none	NA	Current
40-12001	0	26-Oct-09	Dry Ashing of Feed, Food and Manure Samples for Mineral Determination	AOAC 868.08	11-47.3 & 40-50013-0	Current
40-12002	0	19-Aug-09	Acid Digestion of Aqueous Samples and Extracts for Analysis of Total Metals by Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	SW-846 3010A, 6010A, 6020A; EPA 200.7, 200.8	P65923A	Current
40-12003	0	15-Oct-08	Sample Preparation and Grinding Feed, Forage, and Feedstuff Samples	none	11-33, -34, -35 and 40-50016	Current
40-12004	In Progress		Filtering Aqueous Samples for Inorganics Analysis	In Progress	In Progress	In Progress
40-12005	In Progress		Turbidity Screening of Aqueous Samples for Metals Analysis	In Progress	In Progress	In Progress
40-12006	0	19-Nov-09	Acid Digestion of Non-Aqueous Samples for Analysis of Total Metals by Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	US EPA SW-846 Method 3050B	P65923	Current
40-12007	0	1-Feb-10	Grinding and Sub-Sampling of Food Samples for Chemical Analysis	MICA Fat Claims 2007, AOAC (2007) 983.18, 955.30, 969.20 & 935.52	81-068 & 81-069	Current
40-12008	In Progress		Preparation of Expanded Polystyrene (EPS) Samples for the Determination of Boron as Disodium Octaborate Tetrahydrate by ICP-OES	In Progress	In Progress	In Progress
40-12009	In Progress		Air Dry or Partial Drying of Feed and Forage Samples	NFTA 2.2.1.1 (1993)	NA	In Progress
81-019	6	11-Sep-02	Toxicity Characteristic Leaching Procedure (TCLP)	none	NA	Current
81-068	Retired		Preparation of Meat and Meat Product Samples for Analysis	none	NA	Retired
81-069	Retired		Preparation and Sub Sampling of Food Products and Ingredients for Analyses	none	NA	Retired
A85013Man	1.1	23-Apr-01	Preparation of Manure Samples for Phosphorus and Potassium Analysis	AOAC (15) 942.05	NA	Current
M30400	1	25-Feb-02	Preparation of Aqueous Samples for Flame Atomic Absorption Analysis	SM (18) 3010A, 3030F, 3005A	NA	Current
P65923	Retired		Acid Digestion of Non-Aqueous Samples	SW-846 3050	NA	Retired
W05523	2.1	22-Feb-95	Shake Extraction of Solid Waste with Water	ASTM D2987-85	NA	Current

## 40-13-GLP/GMP/GCP/ISO

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
21-119	2	15-Mar-05	Test, Reference and Control Substance Receipt, Identification, Storage, Labeling, Retention, Handling, Method of Mixing/Sampling and Distribution	none	NA	Current
21-121	2	2-Aug-04	Analysis of Analytical Standards for GLP Use	none	NA	Current
21-129	0	15-Jun-04	GLP Inventory Data Base	none	NA	Current
40-13001	0	10-Aug-09	Sample Receipt for GLP/GCP/VICH GL9 Studies	21CFR§58, 40CFR§160, VICH GL9, OECD	81-59 & 21-13	Current
40-13002	0	10-Aug-10	Documenting Amendments and Deviations to GLP Study protocols and MVTL SOPs	21CFR§58, 40CFR§160, OECD 7.3 & 8.1.2	81-48	Current
40-13003	0	10-Aug-10	Storage of Records and Raw Data for GLP/GCP/VICHGL9 Studies (Ongoing and Completed)	21CFR§58, 40CFR§160, OECD 10, VICHGL9GCP	81-36	Current
40-13004	In Progress		GLP Test Reference and Control Substance Handling for MVTL Sponsor Code 22	In Progress	21-119, 21-121, 21-129	In Progress
40-13008	1	10-Aug-10	Maintenance of Master Study Schedule	GLP/GCP Rules	61-2	Current
40-13009	In Progress		QA Verification of GLP/GCPVICH GL9 Samples	In Progress	In Progress	In Progress
40-13011	0	1-Apr-09	Maintenance of the GLP Archives Facility	GLP/GCP Rules	81-10 and 81-33	Current
61-17	7	1-Feb-05	QA Verification of GLP/GCPVICH GL9 Samples	none	NA	Current
81-036	2	15-Jan-06	Storage of Records and Raw Data for GLP/GCP/VICHGL9 Studies-Ongoing and Completed	none	NA	Current

## 40-20-Inorganic Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
11-024	3	2-Aug-04	Maintenance and Cleaning Procedures for Exhaust Hoods	none	NA	Current
11-042	6	15-Apr-05	Cleaning of Glassware for the Inorganic Chemistry Laboratory	none	NA	Current
40-20002	0	16-Mar-09	Determination of Turbidity in Drinking, Surface and Waste Water	EPA 180.1	T80023	Current
40-20004	0	15-Sep-10	Operation and Maintenance of the Beckman Coulter Series 700 UV/Vis Scanning Spectrophotometer	Beckman Coulter DU Series 700 User's Guide	NA	Current
40-20007	In Progress		Determination of pH in Waters and Wastewaters	In Progress	In Progress	In Progress
C16051 /C15851	3	15-Jul-04	Determination of Total Calories and Calories from Fat	21 CFR 101.9C11B and C	NA	Current
C17851	2	1-Jul-04	Carbohydrate Determination by Calculation	21 CFR 101.9(C)(6)	NA	Current
C22523	3	16-Feb-04	Cation-Anion Summation	SM 1030F, 1050A	NA	Current
H08023	3	1-Oct-04	Calculation of Hardness in Water and Waste Water	SM (19) 2340A, B	NA	Current
L07023	3	1-Apr-05	Determination of the Langelier Index	Nalco Water Handbook	NA	Current
N49523	0	15-Jun-04	Calculation of Organic Nitrogen by Difference	40 CFR 136.3, Table 1B, parameter 43	NA	Current
R99023	3	1-Apr-05	Determination of the Ryznar Stability Index	Nalco Water Handbook	NA	Current

## 40-21-Demand

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
11-078	4	2-May-05	Start-Up, Operation, and Maintenance of BOD AutoEz Reader	none	NA	Current
40-21001	0	15-Feb-07	Determination of Settleable Solids in Wastewater	SM (20) 2540F	S67523	Current
40-21002	0	16-Jul-07	Determination of Total Suspended Solids or Sand in Drinking, Surface, Saline and Wastewaters	USGS Method I-3765-85, pg 581	S68023	Current
40-21003	In Progress		Determination of BOD, Soluble BOD, CBOD, Soluble CBOD and Dissolved Oxygen in Waters	In Progress	In Progress	In Progress
40-21004	In Progress		Determination of Total Solids and Total Volatile Solids in Waters	In Progress	In Progress	In Progress
40-21005	In Progress		Determination of Total, Inorganic and Volatile Dissolved Solids in Waters	In Progress	In Progress	In Progress
40-21006	In Progress		Determination of Suspended Volatile Solids in Waters	In Progress	In Progress	In Progress
40-21007	In Progress		Determination of pH in Waters and Waste Waters			In Progress
B02523/B02123 B02223/B02323	6	15-Apr-05	Determination of BOD, Soluble BOD, CBOD, and Dissolved Oxygen in Wastewaters, Effluent and Polluted Waters	SM (20) 5210	NA	Current
D39023	3	2-May-05	Dissolved Oxygen (Membrane Electrode)	SM 45000-G	NA	Current
D39223	2	15-Jul-04	Dissolved Oxygen by Titration	SM 45000-C	NA	Current
P25023	5	2-May-05	Determination of pH in Drinking, Surface, Saline and Wastewater	SM (18) 4500-H+B	NA	Current
S68523	3	15-Sep-04	Suspended Volatile Solids	SM (18) 2540D	NA	Current
S69023	3	2-May-05	Determination of Total Solids in Drinking, Surface, Saline and Wastewaters	SM (18) 2540B; EPA 160.4	NA	Current
S69523	3	2-May-05	Determination of Total, Inorganic, and Volatile Dissolved Solids in Water	SM (18) 2540C, E	NA	Current

## 40-22-FIA

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
11-065	6	2-May-05	QuikChem 8000 FIA Operation and Maintenance	none	NA	Current
40-22001	0	15-Jan-09	Determination of Nitrate+Nitrite, Nitrite and Nitrate as N in Surface and Saline Waters, Wastewaters, Drinking Water, Environmental Solids and Sludges, Foods, and Feeds using the QuikChem® 8000	EPA 353.2;SM (20) 4500-NO3--F	N43023B N49023B	Current
40-22002	In Progress		Determination of Sulfate in surface and saline waters, wastewaters, drinking water, environmental solids and sludges using the QuikChem 8000.	In Progress	In Progress	In Progress
40-22003	0	15-Jan-09	Determination of Chloride in Surface and Saline Waters, Wastewaters, Drinking Water, Environmental Solids and Sludges, Foods, and Feeds using the QuikChem 8000	SM (20) 4500-Cl--E	C32023B	Current
40-22004	In Progress					In Progress
40-22005	In Progress		Determination of Sulfate in Drinking Water by Automated Colorimetry (IOWA)	EPA 375.2; QuikChem 10-116-10-2-A	NA	In Progress
B56023B	3	15-Sep-04	Determination of Bromide in Water by Flow Injection Analysis on the Quick Chem 8000	USGS I212985; Lachat Quick Chem Method #10-135-21-1-A	NA	Current
E90023	2	2-May-05	Extraction of Soil, Sludge, Feed, Dried Whey, Dried Forage, Ash and Meat for Analysis of FIA	AOAC 973.31, 968.07; Soil Analysis 33-8, 28-3; IDF Standard 97A (1984)	NA	Current
N41023B	4	2-May-05	Determination of Ammonia Nitrogen in Drinking and Ground Waters on the QuikChem 8000	EPA 350.1; QuikChem 10-107-06-01-B	NA	Current
P38023B/ P38323B	4	15-Mar-05	Determination of Specified Forms of Phosphorus in Drinking, Surface and Saline Waters on the QuikChem 8000	EPA 365.1; QuikChem 10-115-01-1-A, 10-115-01-1-E	NA	Current
S88523B	3	15-Mar-05	Determination of Sulfate in Surface and Wastewater on the QuikChem 8000	EPA 375.4; QuikChem 10-116-10-1-A	NA	Current

## 40-23-General Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
11-016	3	15-Jul-05	Distillation of Non-Aqueous Samples for Fluoride	none	NA	Current
11-066	0	1-Sep-05	Set-Up and Operation of SPE-DEX 3000XL Solid Phase Extraction System	none	NA	Current
11-074	3	15-Jul-05	Operation, Calibration, and Maintenance of the Orion 960 Auto Chemistry System	none	NA	Current
40-23001	In Progress		Transmittance on Powders and Liquids by Spectrophotometer	In Progress	In Progress	In Progress
40-23002	1	30-Dec-09	Chloride as Salt in Animal Feeds and Ingredients	AOAC 969.10	S06013	Current
40-23003	0	16-Jul-07	Sulfide in Water by Titration	SM (18) 4500S2 - B,C,E,F	S90023/ H97723	Current
40-23004	In Progress		Alkalinity in Water and Wastewater by Orion 960	In Progress	In Progress	In Progress
40-23005	2	15-Jul-10	Ash Determination in Foods	AOAC Official Methods of Analysis (18) 920.153 (Meat), 923.03 (Flour), 930.30 (Dried Milk), 945.46 (Milk), 935.42 (Cheese), 945.19 (Cereal)	A85051	Current
40-23006	1	15-Dec-08	Determination of Salt Using the Volhard Method in Meats, Cheeses, Seafood and Feeds.	AOAC (18) 941.18 & 937.09, Quantitative Analysis Agricultural and Food Products.	S04051	Current
40-23007	0	16-Mar-09	Determination of Salt in Butter	AOAC (18) 960.29	S04251	Current
40-23008	In Progress		Measuring Color of Water Derived from Naturally Occurring Materials	In Progress	In Progress	In Progress
40-23009	In Progress		Determination of pH in Non-Aqueous Samples			In Progress
40-23010	In Progress		Evaluation of Corncob Particles for Microbial Processing Aides		NA	In Progress
40-23011	In Progress		Determination of Chemical Oxygen Demand (COD) in Surface Water and Domestic and Industrial Wastes by Spectrophotometry	In Progress	In Progress	In Progress
40-23012	In Progress		Determination of Conductivity in Aqueous Samples	In Progress	In Progress	In Progress
40-23013	In Progress		Titrateable Acidity in Milk and Milk Products	SM Dairy (16) 1992	T42051	In Progress
40-23014	In Progress		Determination of n-Hexane Extractable Material Using Solid Phase Extraction Disks (SPE)	EPA Method 1664	G65023C	In Progress
40-23015	In Progress		Titrateable Acidity in Food Dressings and Powders as % Acetic Acid	AOAC (18) 953.57	40-23007	In Progress
40-23016	In Progress		Determination of Residual Chlorine in Surface, Saline and Wastewater	SM (18) 4500 Cl-G-1992; HACH	C34123	In Progress
A12023	3	2-May-05	Determination of Acidity in Surface Waters, Sewage and Industrial Waters	SM (18) 2310B (4a)	NA	Current

## 40-23-General Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
A45023	4	1-Nov-04	Determination of Alkalinity in Drinking, Surface and Saline Waters, Domestic and Industrial Wastes	SM (18) 2320B	NA	Current
A45023	2	1-Apr-05	Alkalinity in Water and Wastewater	SM (18) 2320B	NA	Current
A45023A	3	2-May-05	Alkalinity in Water and Wastewater by Orion 960	SM(18) 2320B; Orion 960 Autochemistry Instruction Manual	NA	Current
A90051	2	1-Jul-04	Alkalinity in Ash	AOAC 941.07; SM (Dairy) 15.4 APHA	NA	Current
C02023 C02123	5	15-Sep-04	Determination of COD and Soluble COD in Surface Waters and Domestic and Industrial Wastes	EPA 410.4; HACH Method 8000	C02023 C02123	Current
C15013	3	15-Apr-05	Quality Determination of Liming Materials	Article 1007; Mag AG-FS-2677; AOAC (15) 1.001 - 1.007; ASTM C117;	NA	Current
C18023	2	2-May-05	Determination of Free Carbon Dioxide in Drinking, Surface and Saline Waters and Domestic and Industrial Wastes	SM (19) 4500C-O2-C	NA	Current
C34123	3	15-Nov-04	Determination of Residual Chlorine in Surface, Saline and Wastewater	SM (18) 4500 Cl-G; HACH	NA	Current
C37023	4	15-Sep-04	Determination of Chlorophyll-a and Pheophytin-a	SM (18) 10200 H	NA	Current
C73023	4	15-Nov-05	Measuring Color of Water Derived from Natural Occuring Materials	SM (18) 2120B	NA	Current
C78023	3	2-Aug-04	Conductivity in Drinking and Surface Waters, Domestic And Wastes	SM (18) 2510B	NA	Current
C95023	6	1-Mar-05	Determination of Total And Amenable Cyanide	EPA 335.2; SM (18) 4500CN	NA	Current
E40023	3	15-Sep-04	Determination of Oxidation Reduction Potential (eH)	ASTM D1498	NA	Current
F33051	4	15-Jul-04	Fiber,Total Dietary in Foods by the Enzymatic Gravimetric Method	AOAC (16) 985.29	NA	Current
F42051	2	15-Nov-05	Flavor and Odor	ADPI Bullentin 916 Rev 1990	NA	Current
F45023	4	15-Sep-04	Potentiometric Measurement of Fluoride	SM (18) 4500F-B	NA	Current
F45423	2	15-Sep-04	Potentiometric Measurement of Fluoride in Drinking Water	SM (18) 4500F-C	NA	Current
G55051	0	15-Apr-05	Grade Determination of Dry Milk Products	Dairy SM 916	NA	Current
G65023C	1	2-May-05	Determination of n-Hexane Extractable Material Using Solid Phase Extraction Disks	EPA 1664A	NA	Current
G65123	2	15-Jan-06	Grease and Oil in Biosolid Samples	SM (19) 5520E, 5520F	NA	Current
G65323	0	2-May-05	Hydrocarbons in Grease and Oil Samples	EPA 1664A	NA	Current

## 40-23-General Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
H95023	1	2-May-05	Hydrocarbons in Sludge Oil Samples	SM (19) 5520	NA	Current
L15013	4	15-Sep-04	Determination of Liming Materials (Quick Sugar)	AWWA B202-65	NA	Current
M17523	4	15-Apr-05	Man-Made Inerts in Compost	MN Statute 7035.2836, Subpart S (J) (3)	NA	Current
O05023	3	2-Aug-04	Determination of Odor Threshold	SM (18) 2150B	NA	Current
P28813	0	20-Jul-00	Determination of pH in Pet Food, Molasses, and Digest Products	AOAC (15) 932.06	NA	Current
P33023	5	15-Jan-06	Determination of Total Recoverable Phenolics	EPA 420.1	NA	Current
P39013	6	2-May-05	Determination of Phosphorus in Animal Feed and Manure	AOAC (17) 965.17 (Modified)	NA	Current
P39013A	4	15-Apr-05	Total Phosphorus in Soil	Methods for Soil Analysis, 24-2; AOAC (15) 958.01	NA	Current
P50051	2	3-May-04	Physical Appearance	Standards for Grades of Dry Milks, ADPI, Bulletin 916 (revised) 1990	NA	Current
P50523	3	1-Apr-05	Determination of Physical Appearance in Aqueous Samples	SM (18) 2110	NA	Current
S06013	Retired		Determination of Salt	AOAC 969.10	NA	Retired
S08051	2	1-Jul-04	Determination of Scorched Particles (from Micro)	Standards for Grades of Dry Milks, ADPI	NA	Current
S65051-E	1	16-Aug-04	Total Solids Determination in Eggs	AOAC (16) 925.30	NA	Current
S69023A	4	1-Apr-05	Determination of Total Solid in Solid and Semi Solid Samples	SM (18) Method 2540G	NA	Current
S71051	2	1-Jul-04	Solubility Index (from Micro)	Standards for Grades of Dry Milks, ADPI	NA	Current
S75423	4	2-Aug-04	Specific Gravity	Standard Method 2710F	NA	Current
S91023	3	2-Aug-04	Determination of Sulfite	SM (18)	NA	Current
S97523	3	1-Oct-04	Determination of Anionic Surfactants in Drinking and Surface Waters and Domestic and Industrial Wastes	SM (18) 5540C	NA	Current
T42051	0	2-Aug-04	Titrateable Acidity	SM (Dairy) (16)	NA	Current
T63023	1	15-Sep-04	Transmittance	Client Supplied	NA	Current
V45023	3	15-Sep-04	Volatile Acids	SM (19) 5560	NA	Current
W30051	3	15-Nov-05	Determination of Udenatured Whey Protein Nitrogen in Nonfat Dry Milk	Standards for Grades of Dry Milks	NA	Current

## 40-24-Metals

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
11-071	1	7-Jun-02	Operation and Maintenance of the Perkin Elmer Optima 3000 DV ICP	none	NA	Current
11-079	1	15-Jun-04	Operation and Maintenance of the Perkin Elmer Elan 9000 ICP-MS	none	NA	Current
40-24001	0	15-Apr-09	Determination of Hexavalent Chromium	Standard Method 3500-Cr-D 20th Ed.	C45023	Current
40-24002	2	19-Mar-10	Determination of Low Level Mercury in Waters by Cold Vapor Atomic Fluorescence Spectrometry (CVAFS) in Gold Traps	EPA Method 1631E (Aug 2002)	NA	Current
40-24003	Retired		Operation and Maintenance of the Leeman Labs Hydra AF Gold+ Automated Mercury Analyzer System	User Manual	11-073	Retired
40-24004	1	13-Aug-10	Determination of Mercury by Cold Vapor Fluorescence Spectrometry (CVAFS)	EPA Method 245.7; Rev 2.0 (Feb 05)	M23023A	Current
40-24005	In Progress		ICP	In Progress	In Progress	In Progress
40-24006	In Progress		ICP-MS	In Progress	In Progress	In Progress
40-24009	0	1-May-09	Determination of Metals and Minerals in Feed and Ingredients Using the Optima 5300V Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES)	AOAC (17th) 985.01; EPA 200.7 Rev. 4.4	NA	Current
40-24011	0	19-Nov-09	Determination of Metals and Minerals Using the Optima 5300DV Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES)	US EPA Method 200.7, SW-846 Method 6010C, 3010A & 3050B, AOAC (17) 985.01	M26023A, S92531	Current
D38023	0	24-Mar-03	Determination of Disodium Octaborate Tetrahydrate in Expanded Polystyrene by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)	SW-846 6010B	NA	Current
M26023A	Retired		Metals Determination by Inductively Coupled Plasma-Atomic Emission Spectrometry in Water, Solids and Biosolids	EPA 200.7, 6010B	NA	Retired
M27023	1	27-Jul-09	Determination of Metals by Inductively Coupled Plasma-Mass Spectrometry	US EPA Method 200.8 , SW-846 Method 6020	NA	Current
S92531	Retired		Determination of Sulfur in Waters by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)	EPA 200.7	NA	Retired

## 40-25-Nitrogen

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
11-017	4	15-Jun-04	Maintenance and Operation of the Kjeldahl Unit and Titration Unit	none	NA	Current
11-062	4	15-Jun-04	Tecator Block Digestor, Kjeltex Autosampler System and Kjeldahl System Recovery Study	none	NA	Current
40-25001	In Progress		TKN by Kjeltex	In Progress	In Progress	In Progress
40-25002	In Progress		Ammonia by Kjeltex	In Progress	In Progress	In Progress
40-25003	0	15-Jan-07	Determination of Non-Protein Nitrogen in Animal Feed Samples	AOAC 941.04	N50013	Current
40-25004	0	15-Dec-08	Determination of Nitrogen in Samples using the Kjeltex 2400/2460 Autosampler System	AOAC 981.10, 988.05, 991.20 I, J modified	P70013B, 11-75, 11-76	Current
C21051	4	2-May-05	Determination of Casein	AOAC (16) 927.03	NA	Current
C28011	3	15-Apr-05	Distillation and Titration of Soil Extract Samples for CEC	MVTL Soil Laboratory	NA	Current
N40823	3	2-Aug-04	Distillation of Ammonia in Wastewater Samples	SM (18) 4500-NH3B,E	NA	Current
N41011	3	2-Aug-04	Distillation of Ammonia in Sludge Samples	SM (18) 4500-NH3E	NA	Current
N41023	3.2	1-Nov-00	Ammonia Nitrogen in Water, Wastewater, Sludge and Soil Titrimetric Distillation Procedure	SM (18) 4500 NH3E	NA	Current
N41023A	2	1-Apr-05	Ammonia Nitrogen by Electrode Water, Wastewater, Sludge, Soil-Ion Selective Electrode	SM (18) 4500 NH3E, Orion Instruction Manual	NA	Current
N41023Man	4	1-Apr-05	Ammonia Nitrogen in Manure	AOAC 920.03	NA	Current
N41223	Retired		Determination of Ammoniacal Nitrogen in Fertilizers Using the Magnesium Oxide Method	AOAC (17) 920.03	NA	Retired
N42023/ N42523	6	1-Dec-05	Determination of Total Kjeldahl Nitrogen	SM(18)4500NorgB/4500-NH3B,E	NA	Current
N50051	3	15-Apr-05	Determination of Non-Protein Nitrogen in Non Fat Dry Milk and Milk Powders	AACC 46-22, 8th Edition	NA	Current
N53023	5	15-Mar-05	Determination of Water Insoluble Kjeldahl Nitrogen in Fertilizer	AOAC 945.01	NA	Current
P69913	Retired		Determination of Soluble Protein by Kjeldahl Method	Techniques for Measuring Protein Fractions in Feedstuffs, Pg. 85	NA	Retired
P70013A	4	1-Jun-05	Determination of Crude Protein by CuSO4/TiO2 Kjeldahl	AOAC (16) 988.05	NA	Current

## 40-26-Fat/Moisture/Ash

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-26001	2	15-Dec-08	Fat Determination in Flour, Egg, Cheese and Macaroni Products Using the Acid Hydrolysis Method	AOAC (18) 922.06, 925.32, 933.05, 925.12	NA	Current
40-26002	1	15-Dec-08	Moisture - Vacuum Oven Method in Food, Dairy and Feed Samples	AOAC (18) 922.06, 925.32, 933.05, 925.12, 925.45, SMEDP (17)	NA	Current
40-26003	1	15-Dec-08	Moisture in Meat and Meat Products	AOAC (18) 950.46B	NA	Current
40-26004	1	15-Dec-08	Fat Determination by Soxhlet Extraction in Meat and Meat Products	AOAC (18) 960.39B	NA	Current
40-26005	0	15-Jun-07	Fat Determination by Babcock Method	Dairy SM (16) 15.8	F10051	Current
40-26006	0	15-Jul-09	Moisture Determination in Feeds, Feedstuffs and Forages, 135°C	AOAC 930.15, NFTA	40-50002	Current
40-26007	1	15-Dec-08	Titrateable Acidity in Food Dressings Reported as % Acetic Acid	AOAC (18) 953.57	A12151	Current
40-26008	0	15-Dec-08	Fat Determination by Modified Mojonnier Ether Extraction Method	AOAC (16) 989.05	F12051	Current
40-26009	0	15-Oct-09	Ash Analysis in Feeds and Feedstuffs	AOAC 942.05	40-50003	Current
40-26010	In Progress		Moisture 105°C			In Progress
40-26011	In Progress		Fat by Acid Hydrolysis in Pet Foods or Feedstuffs		40-50009	In Progress
A84951	2	1-Apr-05	Ash in Fruit, Confectionary and Nuts	AOAC (17) 940.26, 950.49; AOAC (14) 900.02A	NA	Current
F09513	1	15-Apr-05	Crude Fat Determination by Acid Hydrolysis (Sponsor 30)	AOAC (16) Method 922.06	NA	Current
F12313	1.2	5-Dec-00	Fat Determination in Dried Milk by the Modified Ether Extraction Method	AOAC 915) 932.06	NA	Current
M55013Man	1.1	19-Apr-01	Determination of Total Moisture in Manures	AOAC (15) 930.15	NA	Current
M62313	Retired		Moisture Determination at 133EC on Dry Feedstuffs	AOAC (16) 930.15; 925.10	NA	Retired

## 40-30-Organic Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
21-004	4	5-Dec-02	How to Use and Maintain Gas Chromatograph with 63 Ni Electron Capture Detector	none	NA	Current
21-011	6	1-Jun-04	Maintaining Maintenance, Calibration and Use Logs for Laboratory Instruments and Equipment	none	NA	Current
21-014	7	2-Aug-04	Labeling of Manually Generated Chromatograms	none	NA	Current
21-017	5	15-Nov-05	Operation and Maintenance of a Rotary Evaporator Fitted With a Water Cooled Condenser	none	NA	Current
21-019	3	15-Jul-05	Operation of Solid Phase Extraction (SPE) Vacuum Manifold	none	NA	Current
21-020	4	7-Jul-03	Operation and Maintenance of Tissue Homogenizers	none	NA	Current
21-050	5	1-Aug-05	Operation of the Burrell Wrist Action Shaker	none	NA	Current
21-051	Retired		Operation, Maintenance and Calibration of the Centrifuges	none	40-10008	Retired
21-052	5	15-Jul-05	Changing Compressed Gas Cylinders	none	NA	Current
21-060	3	31-Jul-03	Use of the J & W Digital Flow Meter for Setting Flows	none	NA	Current
21-071	4	15-Oct-05	Operation of HPLC Auto Samplers: Shimadzu SIL 9A, Waters WISP 710B/712 and Waters 717 Plus, Alcott 708 AL	none	NA	Current
21-072	3	1-Jul-05	Operation and Maintenance of the Compressed Air System	none	NA	Current
21-076	3	2-Sep-03	The Use and Maintenance of the Waters Liquid Chromatography Pumps: Model#: 6000A and 510	none	NA	Current
21-080	2	1-May-03	Operation and Maintenance of Hewlett Packard 5890 Series II Plus Gas Chromatograph System with Mass Selective Detector	none	NA	Current
21-081	5	6-Feb-02	Use of PID and ELCD Detectors from O.I. Corporation	none	NA	Current
21-083	2	17-Feb-03	Use and Maintenance of the Waters 470, SpectroVision FD-300, and Hewlett Packard 1046A Fluorescence Detector	none	NA	Current
21-086	4	15-Nov-05	Soxhlet Extraction Procedure	none	NA	Current
21-087	4	3-Feb-03	The Use and Maintenance of the Waters 484, Waters 486, Gilson 116 and Shimadzu SPD-6A, and Kratos Spectroflow 757 Absorbance Detector (AD)	none	NA	Current
21-090	2	17-Feb-03	The Use and Maintenance of the Balston Hydrogen Generator	none	NA	Current
21-092	3	15-Oct-05	The Use and Maintenance of the Waters 410 Differential Refractometer Detector (DRD)	none	NA	Current
21-093	2	17-Feb-03	The Use and Maintenance of the Shimadzu Liquid Chromatography (LC) Pumps, Model#: LC-6A and LC-9A	none	NA	Current

## 40-30-Organic Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
21-096	2	6-Jun-03	Use and Maintenance of a Gas Chromatograph (GC) with a Flame Ionization Detector(FID)	none	NA	Current
21-100	2	2-Jan-02	Routine Maintenance of Photoionization Detector and Flame Ionization Detector	none	NA	Current
21-135	0	9-Dec-03	Operation of N-Evap Model #111	none	NA	Current
21-137	1	1-Jul-04	A/D Validation of the Millennium Data Acquisition System	none	NA	Current
21-138	0	1-Jul-04	Operation and Maintenance of VWR Scientific Model 1131 Recirculating Water Bath	none	NA	Current
21-142	0	2-Aug-04	Standard Operating Procedure for Manual Integration	none	NA	Current
40-30001	0	3-Jan-08	Operation and Maintenance of the Agilent 1200 Series Quaternary Pump, Vacuum Degasser, Autosampler, Fluorescence Detector and Instant Pilot	Agilent 1200 Series Manuals G1311-90010, G1322-90010, G1329-90020, G1321-90010 & G4208-90002	NA	Current
40-30002	0	3-Jan-08	Operation and Maintenance of the Pickering Pinnacle PCX Post-Column System	Pickering Pinnacle PCX Operator's Manual	NA	Current
40-30003	0	25-Aug-08	Operation and Maintenance of the Savant Speed-Vac System	Savant Speed-Vac Systems Manual	21-143	Current
40-30005	0	15-Apr-09	Boiling Chip Conditioning	none	21-114	Current
40-30010	0	16-Mar-09	Use, Validation, and Maintenance Procedures for the Waters Millennium Data Acquisition System (DAS)	Multiple Millennium Guides	21-140	Current
40-30013	0	15-Apr-09	Tracking Chromatography Columns	none	21-145	Current
40-30014	0	15-Apr-09	Use and Maintenance of Milli-Q UV Plus Water System	Milli-Q UV Plus Operating and Maintenance Manual by Millipore	21-77	Current
40-30015	0	15-Apr-09	Use and Maintenance of the ASE 200 Accelerated Solvent Extractor	NA	21-113	Current

## 40-31-Environmental

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
21-015	4	15-Oct-05	Use and Maintenance of the WAB Turbula T2C	none	NA	Current
40-31001	In Progress		Determination of Gasoline Range Organic Compounds and Petroleum Volatile Organic Compounds in Water and Soil	Modified GRO – Method for Determining Gasoline Range Organics, WISCONSIN DNR, September 1995, PUBL-SW-140	V70111	In Progress
40-31002	0	15-Apr-09	Determination of Diesel Range Organics in Water and Soil	Modified DRO- Method for Dermining DROs, WI DNR, Sept. 1995, PUBL-SW-141	V70523, V70511	Current
40-31003	0	16-Mar-09	The Determination of Percent Moisture in Soils	none	M64211	Current
40-31004	In Progress		Method 608, 8081B – Organochlorine Pesticides in Water and Soil	EPA Method 8081B	O62323 & O62311	In Progress
40-31005	In Progress		Method 608,8082A – Polychlorinated Biphenyls (PCBs) in Water and Soil	EPA Method 8082A	P10023 & P10011	In Progress
40-31006	In Progress		Determination of Base/Neutral Pesticides in Water by GC/MS (MDA List I)	EPA Methods Manual SW-846, Methods 3510C and 8270D	B15323	In Progress
40-31007	In Progress		EPA GRO/PVOC in Water and Soil	In Progress	In Progress	In Progress
40-31008	0	16-Mar-09	Extractable Petroleum Products and Related Low Volatility Organics Compounds in Water and Soil - EPA DRO/TEH	WI LUST, EPA SW-846 methods 3545, 3550B, 8000B & 8051C	E95023, E95011	Current
40-31009	0	16-Mar-09	Preservation of Containers for Volatile Organic Compounds (VOC) and Diesel Range Organics (DRO) Waters	WI LUST	21-89	Current
40-31010	0	23-Feb-09	VOC by GC/MS	SW 843, Method 8260B, 40 CFR Method 624	V50323	Current
40-31011	0	15-Apr-09	Routine Operation and Maintenance of the Tekmar ALS 2016 Autosampler	Tekmar ALS 2016, 2032 Use Manual; VIVI/Valco Instruments Co., Inc. "E2CST16ETM Alignment"	21-103	Current
40-31012	0	16-Mar-09	Routine Operation and Maintenance of the Tekmar 3000 Concentrator	Tekmar 3000 User's Manual	21-109	Current
40-31013	In Progress		Routine Maintenance PID and FID	In Progress	In Progress	In Progress
40-31014	0	19-Aug-09	Chlorinated Acid Herbicides in Water by GC-MS	SW-846 8150/8270C Modified	T00523	Current
40-31015	In Progress		Determination of Volatile Organic Compounds (VOCs) in Water and Soil by Method 8021B	EPA SW-846 Method 8021B, MDH Method 465 & 466; Method 601 & 602	V500023D & V49911	In Progress
40-31016	In Progress		Determination of Base/Neutral Pesticides in Soil by GC/MS (MDA List I)	EPA Methods Manual SW-846, Methods 3510C and 8270D	B15311	In Progress

## 40-31-Environmental

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-31017	In Progress		Determination of Base/Neutrals and Acids in Water and Soil by GC/MS	40 CFR 136, Method 625; EPA SW-846 Methods 3510C, 3550B & 8270C	B15223	In Progress
40-31018	In Progress		Determination of EL-107 (Isoxaben) in Water by HPLC	Eli Lily AM-AA-CA-R053-AC-755	I80023	In Progress
B15223	7	16-Apr-03	Determination of Base/Neutrals and Acids in Water and Soil by GC/MS	40 CFR, Method 625; SW-846 3510C, 3550B, 8270C	NA	Current
B15311	4	3-Mar-04	Determination of Base/Neutral Pesticides in Soil by GC/MS	SW-846 3545, 3550, 8270C Modified	NA	Current
B15323	2	22-Dec-03	Determination of Base/Neutral Pesticides in Water by GC/MS	SW-846 3510, 8141, 8270C Modified	NA	Current
C09023	0	4-Mar-04	Determination of Caffeine in Water by GCMS	MVTL Research and Development	NA	Current
E80223	2	26-Dec-02	Determination of Propylene, Ethylene and Di-Ethylene Glycol in Water by GC with an FID Detector	MVTL R&D	NA	Current
E80311	1.2	16-Feb-01	Determination of Propylene and Ethylene Glycol in Soil By Gas Chromatography Using Flame Ionization Detection (FID).	none	NA	Current
F46723/F47023 /A60123	0	15-Apr-05	Purity Determination of Fluridone, Fluriprimidol, and Ancyimidol in Analytical and Technical Formulas	Analytical Methods for Pest and Plant Grow Regulators, Vol. XIII, 1984, pgs. 252-253, Method ARZ Determination of Ancyimidol	NA	Current
H95123	3	1-Apr-03	Determination of Petroleum Volatile Organic Compounds (PVOCs), Gasoline Range Organics (EPA GRO) and Gasoline by OA-1 in Water	SW-846 8000, 8015B; OA-1 Method	NA	Current
H95423	4.3	18-Jun-98	Extractable Petroleum Products and Related Low Volatility Organic Compounds in Water	SW-846 3510, 3520; WI Modified DRO Method; IA OA-2 Method	NA	Current
H96523	2	15-Jun-04	Determination of Light Hydrocarbons in Water	SW-846, Method 8015B Modified	NA	Current
I80023	1.3	17-Nov-00	Determination of EL-107 (Isoxaben) in Water by HPLC	Eli Lily AM-AA-CA-R053-AC-755	NA	Current
O62311	3	15-Apr-02	Method 8081A - Organochlorine Pesticides in Soil	SW-846 3510C, 3545, 3660, 8000 and 8081A	NA	Current
O62323	6	13-Feb-02	Method 608, 8081A - Organochlorine Pesticides and PCBs in Water	40 CFR Part 136 Method 608, SW-846 Methods 3510C, 3660, 8000, 8080A	NA	Current
O62811	2	15-Nov-01	Determination of Organophosphorus Pesticides in Soil by GC/MS	SW-846 3545, 3550	NA	Current

## 40-31-Environmental

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
P10011	2	15-Aug-02	Polychlorinated Biphenyls (PCBs) Method 8082 in Soil	EPA SW-846, Methods 3545, 3660	NA	Current
P10023	0	20-Aug-02	Polychlorinated Biphenyls (PCBs) Method 608, 8082 in Water	CFR40 Part 136, Appendix A, Method 608: EPA SW-846, Method 3510C, 3660B, 3665A, 8082	NA	Current
P10111	0	13-Nov-00	Determination of PCBs in Sludge and composts by ECD	SW-846 8080	NA	Current
P11523	1.4	17-Feb-01	The Determination of Organophosphorous Pesticides in Water by GC-MS	SW-846 method 3510, 8141, 8081	NA	Current
P12023	0	23-Aug-02	Polychlorinated Biphenyls (PCBs) in Oil	EPA SW-846, Method 3580A, 3660B, 3665A, and 8082	NA	Current
T58011	3	19-Oct-01	Determination of Chlorinated Acid Herbicides in Soil by GC/MS	SW-846 Method 3545/8151A/8270 Modified	NA	Current
T72011	Retired		Determination of Atrazine, Simazine, Propazine, Metribuzin, Cyanazine and Pendimethalin in Soil by GC/FTD	FDA PAM	NA	Retired
V49911	2	19-Mar-03	Determination of Volatile Organics in Soil by Purge and Trap Method	MDH 466; SW-846 8021B	NA	Current
V50023D	5	19-Mar-03	Determination of Volatile Organics in Water by Purge and Trap Method	MDH 466; 49 CFR 209, Method 601, 602; SW-846 8021B	NA	Current
V70111	3	1-Sep-04	Determination of Gasoline Range Organic Compounds and Petroleum Volatile Organic Compounds in Soil and Water (WI)	WI LUST Manual	NA	Current
V80011	3	1-Apr-03	Determination of Petroleum Volatile Organic Compounds (PVOCs), Gasoline Range Organics (EPA GRO) and Gasoline by OA-1 in Soil	SW-846 8000 and 8015, OA-1	NA	Current

## 40-32-Special Chem

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
21-031	6	30-Oct-02	Removal of Fat from Feed, Meat/Bone Meal, Grease, Tallow, Animal Fat and Other Fatty Matrices Using Gel Permeation Chromatography	none	NA	Current
21-033	6	15-Nov-05	Preparation and Calibration of Gel Permeation Chromatographic Column for Fat Removal from Samples	none	NA	Current
21-037	4	6-Jun-03	Fat Extraction from Dairy Products	none	NA	Current
21-038	4	17-Jun-03	Fat Extraction from Meat	none	NA	Current
21-068	4	1-Aug-05	Bubbler Methylation Procedures	none	NA	Current
40-32001	0	16-Mar-09	Determination of Vitamin D3 (Cholecalciferol) in Foods, Animal Feeds, Ingredients and Vitamin Premixes by HPLC with UV Detection	AOAC 2002.05, 982.29, 981.17, 985.27	V41013	Current
40-32002	0	2-Jan-09	Determination of Biotin in Food Products, Feed and Vitamin Premixes by HPLC/PAD	Dionex Technical Note 21, MVTL Development	B28013	Current
40-32003	0	2-Jan-09	Determination of Vitamin B12 in Soft Drinks and Fortified Sports and Energy Drinks by HPLC/VIS	AOAC 952.20	V38013	Current
40-32004	0	2-Jan-09	Determination of Vitamin B12 in Food Products, Feed and Vitamin Premixes by HPLC/VIS	AOAC 952.20	V38013	Current
40-32005	0	16-Apr-07	Determination of Natamycin in Delvovid® Powder, Delvovid® Salt and Cheese by HPLC/UV	IDF 140A:1992-2005/USP 28 NF 23 (2005)	N22051	Current
40-32006	0	2-Jan-09	Determination of Ethyl Alcohol in No Rinse Antiseptic Hand Cleansers by HPLC/RI	MVTL Development	E74023	Current
40-32007	0	15-Aug-07	Procedure for Qualifying Syringe Driven Filters Used for the Purification of Extracts to be Analyzed by GC, HPLC or UV/VIS spectrophotometric Analytical Methods Falling Under cGMP Requirements	Pall Corporation	NA	Current
40-32008	0	16-Mar-09	Determination of Vitamin C in Food, Animal Feed, Ingredients and Vitamin Premixes by HPLC/UV	AOAC 984.26; USP 32, 2009	NA	Current
40-32009	0	16-Mar-09	Determination of Vitamin C in Liquid Multi-Vitamin Dietary Supplements, Fortified Sports/Energy Drinks and Juice by HPLC/UV	AOAC 984.26; USP 32, 2009	NA	Current
40-32010	0	16-Mar-09	Simultaneous Determination of Vitamins B1 (Thiamine), B2 (Riboflavin), Niacin, Niacinamide, B5 (Pantothenic Acid) and B6 (Pyridoxine) in Fortified Beverages, Soft Drinks, Sports Drinks and Energy Drinks by HPLC/UV and Fluorescence Detection	AOAC 945.73, 970.65, 942.23, 961.15	NA	Current
40-32011	0	16-Mar-09	Determination of Folic Acid in Vitamin Premixes by HPLC/UV	AOAC 944.12; USP 29 NF 24	F55013	Current
40-32012	0	16-Mar-09	Determination of Folic Acid in Fortified Sports Drinks, Energy Drinks and Beverages by Immunoaffinity Column Extraction with HPLC/UV	AOAC 944.12; USP 29 NF 24	NA	Current

## 40-32-Special Chem

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-32013	1	3-Jan-08	Determination of Amino Acids in Foods, Feeds and Ingredients by HPLC	MVTL Development-AOAC (18) 994.12	NA	Current
40-32014	0	15-Dec-06	Determination of L-Tryptophan in Foods, Feeds and Ingredients	MVTL Development	A59851	Current
40-32015	0	16-Mar-09	Determination of Menodione (Vitamin K3) in Vitamin Premixes by HPLC/UV	AOAC 974.30; USP 23	M22013	Current
40-32016	0	2-Jan-09	Simultaneous Determination of Sulfadimethoxine and Ormetoprim in Poultry Feed and Fish Feed by HPLC/UV	Canadian Feed Inspection Agency Lab Services Division, #FD-Drugs-SDM/OMP	S84813	Current
40-32018	0	2-Jan-09	Determination of Triclosan in Antimicrobial Hand Soap and Lotion by HPLC/UV	Sponsor 01 Dyestuffs and Chemical Division, MVTL Development	T73023	Current
40-32019	0	2-Jan-09	Simultaneous Determination of Oxybenzone, Octinoxinate, Octisalate and Homosalate in SPF Sunscreen Lotion by HPLC/UV	Apex International Documents TM-131 and TM-130	NA	Current
40-32020	0	2-Jan-09	Determination of Salicylic Acid in Shampoo and Topical Cream by HPLC/UV	MVTL Development	S00723	Current
40-32021	0	2-Jan-09	Determination of Chloroxylenol (PCMX) in Antimicrobial Hand Soap by HPLC/UV	US Pharmacopeia, USP 30 (1997)	P17051	Current
40-32022	0	2-Jan-09	Determination of Aflatoxins B1, B2, G1 and G2 in Corn, Grains, DDGS and Modified Distillers Grain and animal bedding using Immunoaffinity Column Cleanup with HPLC/Fluorescence Detection.	AOAC 991.31	NA	Current
40-32023	0	2-Jan-09	Determination of Aflatoxins B1, B2, G1 and G2, Ochratoxin and Zearalenone in Corn, Grains, DDGS and Modified Distillers Grain and animal bedding using Immunoaffinity Column Cleanup with HPLC/Fluorescence Detection.	AOAC 991.31, 985.18, 2000.03	NA	Current
40-32024	0	2-Jan-09	Determination of Fumonisin B1 and B2 in Corn, Grains, DDGS and Modified Distillers Grain using Immunoaffinity Column Cleanup with HPLC/Fluorescence Detection	AOAC 2001.04	NA	Current
40-32025	0	2-Jan-09	Determination of Deoxynivalenol (Vomitoxin) in Corn, Grains, DDGS and Modified Distillers Grain using Immunoaffinity Column Cleanup with HPLC/UV Detection.	DONtest HPLC Instruction Manual, Vicam, L.P.		Current
40-32026	0	2-Jan-09	Determination of Vitamin A (Retinal) in Foods, Animal Feed and Vitamin Premixes by HPLC/UV	AOAC 2001.13, 974.29	V38051	Current
40-32027	In Progress		Vitamin D in Food and Feed	In Progress	In Progress	In Progress
40-32028	In Progress		Caffeine, Sorbic Acid and Benzoic Acid in Carbonated and non-Carbonated Beverages	In Progress	In Progress	In Progress
40-32029	In Progress		Sucrose in Rice Cake Mix	In Progress	In Progress	In Progress

## 40-32-Special Chem

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-32030	0	16-Mar-09	Determination of Citric Acid In Sports and Energy Drinks, Soft Drinks, Fruit Juices and Powdered Mixes by HPLC/UV	MVTL Development; Restek Application note #59530	NA	Current
40-32031	0	16-Mar-09	Determination of Total Xanthophylls in Corn, DDGS and Modified Distillers Grains by HPLC/Visible Wavelength Detection	AOAC 970.64	NA	Current
40-32032	0	16-Mar-09	Determination of L-Ascorbyl-2-Monophosphate in Premixes, Animal Feed and Fsh Feed by HPLC/UV	MVTL Development; Roche Vitamins, Inc. Tech. Marketing Analysis	V40613	Current
40-32033	0	16-Mar-09	Determination of Allantoin in A.S. 140-C Cream by HPLC/UV	Celsis Laboratory Group, Validation Study	S00723	Current
40-32034	0	16-Mar-09	Determination of Added Folic Acid in Cereals by Immunoaffinity Column Extraction with HPLC/UV	AOAC 944.12; USP 29 NF 24	NA	Current
40-32048	0	27-Sep-10	Veratox® HS Quantitative Aflatoxin High Sensitivity Test	Veratox® HS kit	A20213	Current
40-32050	0	27-Sep-10	Veratox® Quantitative Fumonisin Test. USDA-GIPA 2001-102 & AOAC 2001.06	Veratox® HS kit	F83013	Current
81-055	0	15-May-03	The Handling and Mixing/Sampling of Topical Creams and Health Care Products	none	NA	Current
A08851	0	20-Feb-95	Determination of Lactic acid and Propionic acid in silage or feed by HPLC using U.V. detection	NA	NA	Current
A20213	Retired		Veratox® HS Quantitative Aflatoxin High Sensitivity Test	Veratox® HS kit	40-32048	Retired
A50023	0	22-Oct-02	Determination of Allantoin in A.S. 140-C Cream/Gel by HPLC	Standard Analytical Method 2764MOI.2, Journal of Pharmaceutical Sciences	NA	Current
A58951	0	15-Apr-04	Analysis of L. Cysteine in Do Flo	Dionex Tech. Note 21, CN Labs Method Development	NA	Current
C40551	1	15-Sep-04	Cholesterol in Foods - Direct Saponification	AOAC Method 994.10	NA	Current
C41013	0	15-Sep-04	Determination of Choline Chloride by HPLC	MVTL Method Development, Dionex Application Notes.	NA	Current
D50011	1.5	25-Jul-00	Determination of Diuron in Soil Using HPLC	Journal of Agriculture & Food Chemistry	NA	Current
D50023	1.3	2-Feb-01	Determination of Diuron in Water Using HPLC	MVTL R&D	NA	Current
F15051	2	26-Jun-01	Fatty Acid Profile in Oils and Fat by GC	AACC 58-17	NA	Current
F46511	Retired		Determination of EL-171 (Fluridone) in Soil	Eli Lilly, AM-AA-CA-R017-AD-755	NA	Retired
F46523	2	30-Aug-02	Determination of EL-171 (Fluridone) in Water by HPLC with UV Detector	Eli Lilly, AM-AA-CA-R031-AC-755	NA	Current

## 40-32-Special Chem

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
F46623	Retired		Analysis for Sonar SRP (Fluridone) by HPLC With UV Detection	Method of Analysis for Sonar SRP, Sponsor 22	NA	Retired
F83013	Retired		Veratox® Quantitative Fumonisin Test	Veratox® fumonisin kit insert, Veratox® Software for windows insert, Bio-Tek® EL301 Operators Manual	40-32050	Retired
M28023/P04 023	1	2-Aug-04	HPLC Analysis of Methyl and Propyl Paraben	Sponsor Supplied Method	NA	Current
P01013	0	15-Apr-04	Analysis of Pantothenic Acid in Vitamin Premixes	AOAC 945.73, 945.74 HPLC Modified	NA	Current
P11523A	0	5-Apr-02	Determination of PCBs, Organochlorine, and Organophosphorus Pesticides in Corn Syrup, Molasses, and Beet Sugar	EPA SW-846 Method 3510B	NA	Current
P12051	1.5	27-Mar-01	Determination of PCBs, Organochlorine and Organophosphorous Pesticides in Animal Fat, Grease, Tallow and Feed	EPA, AOAC 984.21	NA	Current
P50823	0	28-Jan-00	Determination of Piperalin (gamma-[alpha-Pipecoline]-propyl-3,4-dichlorobenzoate) in Formulations	Method AQT, Sponsor 07	NA	Current
P80113	0	15-Apr-04	Analysis of Pyridoxine HCl (Vitamin B6) in Vitamin Premixes	AOAC 961.15, HPLC Modified	NA	Current
R30013/N315 13/N31413	0	15-Apr-04	Analysis of Riboflavin, Niacin and Niacinamide in Vitamin Premixes	AOAC 970.65, Skurray, G.R. Fd Chem, 7,77-80 (1981)	NA	Current
R50113	0		Guidence Document for Isoflavones	NA	NA	Current
S74551	2	2-Aug-04	Determination of Sorbic Acid in Cheese and Cheese Products	AOAC 974.10; MVTL R&D	NA	Current
S86551	1.4	31-Jul-95	Determination of Total Sugars in Egg Yolk, Shake Premix, Corn Syrup, Whey Products and Dried Milk Products by HPLC	AOAC; MVTL R&D	NA	Current
S87613	1	15-Apr-04	Sugars in Feed by HPLC/PAD	Dionex Corp, Application Note 21 & 92	NA	Current
S90813	1	15-Sep-04	Analysis of Sulfamethazine in Feed using HPLC	Journal Association of Official Analytical Chemistry, Vol. 71, #4, 1988	NA	Current
T30013	0	15-Apr-04	Analysis of Thiamine Mononitrate (Vitamin B1) in Vitamin Premixes	AOAC 942.23 Modified Ralston Lab	NA	Current
V40551	2	15-Mar-05	Determination of Vitamin C in Food Products by Titration	AOAC 967.21, 984.26; MVTL R&D	NA	Current
V42013	1	15-Jul-05	Vitamin E in Low Levels	CN Laboratory Developed Method	NA	Current

## 40-32-Special Chem

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
V43013	0	1-Dec-04	HPLC Determination of Phytonadione (Vit K) in 5% Vitamin Premix	CN Labs/MVTL Methods Development	NA	Current
V56023	0	15-Sep-04	Determination of Volatile Fatty Acids (VFA) in WW, Sludge, and Silage	Metropolitan Council WW Lab	NA	Current
V90213	1	15-Jan-06	Veratox® 5/5 Quantitative DON Test	Veratox 5/5, BIOTEK EL301	NA	Current

## 40-40-Microbiology

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-40001	1	17-May-10	Use of Reference Cultures in the Microbiology Laboratory (New Ulm)	MicroBioLogics Technical Bulletins: TIB.081 Rev. 2010.Feb.19, TIB.072 Rev. 2008.Nov.12 and TIB.246 Rev. 2010.Feb.01	41-47	Current
40-40002	0	1-Dec-06	Growth Promotion of Media	none	NA	Current
40-40003	1	16-Nov-09	Routine and Non -Routine Maintenance of Equipment in the Microbiology Laboratory	CMMEF (4)	41-30, 33	Current
40-40004	1	4-Jan-10	Operation and Maintenance of Autoclaves (New Ulm, Minnesota)	AMSCO Operators Manual, 3M Attest Product Insert, MDH 4740.110 subp. 11, ISO/IEC 17025:2005	41-7, 48, 50	Current
40-40005	0	15-Nov-09	Determination of Water Activity Using the AquaLab Series 3 Water Activity Meter	Decagon	NA	Current
40-40006	0	15-Jul-09	Preparation and Examination of a Gram Stain	BD Gram Stain Kits and Reagents Product Insert	41-9	Current
40-40007	0	1-Aug-09	Procedure for Streaking for Isolation	NA	41-21	Current
40-40008	0	15-Nov-09	Preparation of Samples for Microbiological Analyses	In Progress	41-39, 41-46	Current
41-039	Retired		Preparation of Sample Homogenate for Bacterial Analysis	none	NA	Retired
41-046	Retired		Preparing Dilutions and Plates for Microbial Plate Count Methods	none	NA	Retired

## 40-41-Media Prep

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-41001	1	1-Feb-07	Guidelines for Preparation of Dehydrated Media and the QC of Prepared Media	none	41-31 & 41-49	Current

## 40-42-Pathogens

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-42001	2	1-Jul-10	Enrichment and Detection of E. Coli O157:H7 in Raw Ground Beef and Trim	MLG 5A.01; AOAC Certificate #070801 & #50501	E04251	Current
40-42002	0	15-May-06	USDA Culture Method for the Detection of Listeria monocytogenes	MLG 8.04	L33051	Current
40-42003	3	1-Jul-10	Detection of Listeria using the bioMerieux VIDAS Enzyme Linked Fluorescent Assay (ELFA) system	AOAC, 2004.06, AOAC RI (No. 981201); FDA BAM; VIDAS Listeria insert.	L33251B, 41-45	Current
40-42004	2	1-Jul-10	Detection of Listeria monocytogenes Using the BAX System	MLG 8A.03, 8.06; AOAC 2003.12; BAX Users Guide	NA	Current
40-42005	3	1-Jul-10	Detection of Salmonella using the bioMerix VIDAS Enzyme Linked Fluorescent Assay (ELFA) system	AOAC 2004.03 (18th), BAM (8), VIDAS Salmonella (SLM) kit insert	S01051B	Current
40-42006	0	1-Jun-06	Detection of Salmonella in Foods by the ISO-GRID® Method	AOAC 991.12	S02651	Current
40-42007	2	1-Jul-10	Detection of Salmonella Using BAX System	BAX Users Guide; AOAC 2003.08; FDA Bam	NA	Current
40-42008	0	1-Aug-06	Rapid Identification of the Family Enterobacteriaceae Using the Remel MICRO-ID	AOAC 989.12; REMEL Insert	41-35	Current
40-42009	Retired		Set-up and Use of the BAX System	BAX Users Guide	41-36	Retired
40-42010	Retired		Preparation of Samples for Analysis in the BAX System	BAX Users Guide	41-37	Retired
40-42011	1	15-Nov-09	Set-up, Use, Maintenance and Troubleshooting for the bioMerieux VIDAS® System	VIDAS Users Guide	41-41, 41-42	Current
40-42012	0	1-Aug-06	Rapid Identification of Listeria Species Using the Remel MICRO-ID Listeria	AOAC 992.18; MICRO-ID Insert	41-16	Current
40-42013	2	15-Dec-09	Detection of Escherichia coli by Using the USP Method	USP32NF27 ch.2022	E72051	Current
40-42014	0	26-Mar-08	Detection of Genus Listeria Using the BAX System	AOAC RI 030502, BAX Users Guide	NA	Current
40-42015	In Progress		FDA Culture Method for the Detection and Identification of Listeria monocytogenes	In Progress	In Progress	In Progress
40-42016	0	1-Mar-10	Use of the bioMerieux® API® 20 E Identification System for Enterobacteriaceae and Other Non-fastidious Gram-negative Rods	AOAC 978.24	NA	Current
40-42017	0	1-Aug-06	Traditional Culture Method for the Identification of Salmonella (BAM Method)	FDA BAM	NA	Current
40-42018	In Progress		E. coli O157:H7 by GDS	In Progress	In Progress	In Progress
40-42019	In Progress		L. mono by GDS	In Progress	In Progress	In Progress

## 40-42-Pathogens

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-42020	In Progress		E. coli O157:H7 USDA Cultural Confirmation	In Progress	In Progress	In Progress
L33151	4	15-Oct-05	Isolation and Identification of Listeria Species Using the FDA Long Method	Dairy SM (16)	NA	Current
L33651	Retired		Detection of Listeria ssp. Using PDX-LIB	AOAC Certificate 040501; BAM (8)	NA	Retired
S01251	0	2-May-05	RapidChek Salmonella, AOAC Certificate No. 030301	RapidChek Salmonella Test Users Guide	NA	Current

## 40-43-Plating

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-43001	0	15-May-06	Detection of Coliforms, E. Coli, and Fecal Coliforms by Most Probable Number (MPN) Technique	BAM (8), CMMEF (4)	C69051, E02051, E02051A, F20251	Current
40-43002	1	15-Feb-07	Enumeration of Escherichia coli and Coliform Bacteria in Food, Food Ingredients, Liquids and Swabs by Pour Plate Method	BAM (8), SMEDP (17)	C70051, E03051	Current
40-43003	1	15-Feb-07	Enumeration of Escherichia coli and Coliform Bacteria in Foods, Food Ingredients, Liquids and Swabs by Petrifilm™ Method	3M, AOAC 991.14, 998-08	C70251, E03151	Current
40-43004	1	15-Feb-07	Enumeration of Molds and Yeasts in Foods, Food Ingredients, Feeds, Swabs, and Liquids	BAM (8)	M66051A	Current
40-43005	1	15-Feb-07	Aerobic Plate Count for Body Care Products, Cosmetics	BAM (8)	S80351	Current
40-43006	2	16-Aug-10	Detection of Staphylococcus aureus by Direct Plate Count and Most Probable Number (MPN)	BAM (8)	S81551, S82051	Current
40-43007	2	3-May-10	Total Enterobacteriaceae Count (TEC) by Petrifilm	3M Petrifilm Insert and Interpretation Guide; AOAC 2003.01	NA	Current
40-43008	1	17-May-10	Use, Calibration and Maintenance of the Delta Dilutor and Smart Dilutor	Delta Users Guide and Smart Dilutor Users Guide	41-40	Current
40-43009	0	1-Aug-06	Counting Colonies on Exposure Petri, Petrifilm, and Rodac Plates Including Air Quality Monitoring of the Microbiology Laboratory (New Ulm)	SM (16); 3M inserts	41-34, S80051C, S80451	Current
40-43010	1	15-Feb-07	Aerobic Plate Count for Foods, Food Ingredients, Liquids and Swabs by Pour Plate	BAM(8); SM(16); CMMEF(4)	S80051A	Current
40-43011	1	15-Dec-06	Total Aerobic Microbial Count USP Method	USP 30 NF25 Chapter <61>	S80023B, S80051B, S80151, S80251	Current
40-43012	In Progress		Enumeration of Proteolytic Bacteria in Food, Food Ingredients, and Water	In Progress	In Progress	In Progress
40-43013	1	15-Feb-07	Enumeration of Escherichia coli and Coliform Bacteria for the HACCP Program by Petrifilm Method	3M insert; AOAC 991.14; 998.08	C70351/E03251, C67051/E02051 A	Current
40-43014	1	15-Feb-07	Detection of S. aureus by Staph Express 3M Petrifilm	AOAC 2003.07, 2003.08, 2003.11	NA	Current
40-43015	1	4-Jan-10	Aerobic (Heterotrophic) Plate Count in Waters by Pour Plate Method	SM (18) 9215A and 9215B	S80023A	Current
40-43016	0	1-Feb-07	Detection of Staphylococcus aureus Using the USP Method	USP 30 NF25 Chapter <62>	83051	Current

## 40-43-Plating

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-43017	0	15-Dec-06	Detection of Molds and Yeasts Using the USP Method	USP 30 NF25 Chapter <61>	M66251	Current
40-43018	In Progress		Detection of Pseudomonas aeruginosa Using the USP Method	In Progress	In Progress	In Progress
40-43019	0	15-Feb-07	Total Enterobacteriaceae Count (TEC) Pour Plate Method	CMMEF	E28051.1	Current
40-43019	Retired		Total Enterobacteriaceae Count (TEC) by Pour Plate Method	CMMEF (4)	E28051	Retired
40-43020	In Progress		Determination of Bacillus cereus by Plate and MPN Methods	In Progress	In Progress	In Progress
40-43021	0	15-Dec-09	Enumeration of Aerobic Bacteria by Aerobic Count Plate (APC of AC) Petrifilm™	AOAC 990.12, 986.33 & 989.10	NA	Current
40-43022	Retired		Enumeration of Coliforms and/or Escherichia coli in Swabs for the HACCP Program by Pour Plate Method	BAM (8)	C67051/E03051 A	Retired
40-43023	In Progress		Detection of Shigella	In Progress	In Progress	In Progress
40-43024	0	1-Mar-10	Detection of Lactobacillus	CMMEF (4)	L05151.2 & L05051.2	Current
40-43025	In Progress		Detection of Clostridium	In Progress	In Progress	In Progress
40-43026	In Progress		Detection of Mesophilic Anaerobic Spores	In Progress	In Progress	In Progress
40-43027	In Progress		Detection of Mesophilic Aerobic Spores	In Progress	In Progress	In Progress
40-43028	0	15-Dec-09	Detection of Yeasts and Molds using 3M™ Petrifilm™ Yeast and Mold Count Plates	AOAC 997.02	NA	Current
A30551	1	15-Oct-05	Detection of Amylase Activity	MVTL	NA	Current
A65051	4	1-Jul-05	Determination of β-Lactam Antibiotics in Dairy Products by the Bacillus stearothermophilus Disc Assay Method	BSDA Protocol, Revised June 2002	NA	Current
B03151	3	15-Jan-06	Bacillus Cereus Plate Count for Foods and Food Ingredients	FDA, BAM	NA	Current
B03151A	0	15-Jan-06	Bacillus cereus MPN for Food and Food Ingredients	BAM (8)	NA	Current
C56051/ C55051	1	1-Dec-05	Detection of Clostridium in Starch Products and Detection of Clostridium Perfringens in Food, Food Ingredients and Feed	AOAC (16); Client Specific 279; CMMEF (3)	NA	Current
D36551	Retired		Direct Microscopic Cell Count and Somatic Cell Count	SM (Dairy), APHA	NA	Retired
F12551	4	15-Jan-06	Enumeration of Enterococci (fecal streptococcus) in Foods	CMMEF (3)	NA	Current
F20051	Retired		Estimation of Fecal Coliform Bacteria in Foods and Food Ingredients by Plate Method	CMMFE (3), APHA	NA	Retired
K40051	2	2-May-05	Determination of Klebsiella pneumoniae and Klesiella	USP	NA	Current

## 40-43-Plating

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
L05051	Retired		Determination of Lactobacilli	CMMEF (3)	NA	Retired
L05151	Retired		Determination of Heterofermentative Lactobacilli	CMMEF (3)	NA	Retired
M11751	2	1-Jun-05	Enumeration of Mesophilic Aerobic Spores	CMMEF (3)	NA	Current
M11851	2	15-Apr-05	Detection of Mesophilic Anaerobic Spores	CMMEF (3)	NA	Current
M11851A	Retired		Detection of Mesophilic Anaerobic Sporeformers in Granular Starch, Dextrin and CWS Products	Client Method CML-274	NA	Retired
M66051	3	1-Sep-05	Detection of Yeast and Mold Counts in Foods by the ISO-GRID7 Method	AOAC 995.21, ISO-GRID7 (3)	NA	Current
P73051/P72023	2	15-Sep-04	Enumeration of Proteolytic Bacteria in Food, Food Ingredients, and Water	CMMEF (3)	NA	Current
P76051/P75023	1	1-Dec-05	Determination of Pseudomonas	Difco and BBI Manual, (1)	NA	Current
P76151	5	15-Oct-05	Determination of Pseudomonas in Samples Requiring the USP Test Method	USP22 NF17	NA	Current
P76151A	Retired		Determination of Pseudomonas in Starch Samples	Client Specific Method, USP23/NF18	NA	Retired
P78551/P78023	2	1-Apr-05	Enumeration of Psychrotrophic Microorganisms	CMMEF (3)	NA	Current
S25051	3	15-Apr-05	Detection of Shigella	CMMEF (3)	NA	Current
S80051	2	15-Jun-04	Enumeration of Total Aerobic Microbial Count in Swabs for the HACCP Program	BAM (8); FSIS regulations	NA	Current
S90551	Retired		Enumeration of Sulfide Spoilage Spores-Starch Products	Client Specific Method CML-260	NA	Retired
S90551A	0	2-May-05	Enumeration of Sulfide Spoilage Spores	CMMEF (3)	NA	Current
T11851	2	1-Jul-05	Determination of Thermophilic Anaerobic Spores	CMMEF (3)	NA	Current
T11851A	1	1-Jun-05	Thermophilic Anaerobic Spore Count for Foods and Food Ingredients	BAM (8)	NA	Current
T28051/T28023	2	2-May-05	Thermophilic Aerobic Plate Count for Foods and Food Ingredients	BAM (8)	NA	Current
T66051/F41951	2	2-May-05	Enumeration of Thermophilic Aerobic Spores and Flat Sour Spores	CMMEF (3)	NA	Current

## 40-44-Client Specific

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-44001	Retired		Protient Heat Stability Test	Client Specific	NA	Retired
40-44002	0	1-Jan-07	Detection of Escherichia coli by using the USP method for Sponsor 29 GLP Study	USP 28 NF23	NA	Current
40-44003	Retired		Danisco Yeast Enumeration Method	Client Specific	NA	Retired
40-44004	In Progress		Client Specific Aerobic Plate Count Method (CONFIDENTIAL, DO NOT DISTRIBUTE OUTSIDE OF MVTL)	Client Specific, FDA BAM	NA	In Progress
40-44005	In Progress		Client Specific Yeast and Mold Method (CONFIDENTIAL, DO NOT DISTRIBUTE OUTSIDE OF MVTL)	Client Specific, FDA BAM	NA	In Progress
40-44006	In Progress		Client Specific Mesophilic Aerobic Spore Count Method (CONFIDENTIAL, DO NOT DISTRIBUTE OUTSIDE OF MVTL)	Client Specific	NA	In Progress
40-44007	In Progress		Client Specific Thermophilic Aerobic Spore Count Method (CONFIDENTIAL, DO NOT DISTRIBUTE OUTSIDE OF MVTL)	Client Specific	NA	In Progress
40-44008	In Progress		Client Specific Enterobacteriaceae Plate Count Method (CONFIDENTIAL, DO NOT DISTRIBUTE OUTSIDE OF MVTL)	Client Specific	NA	In Progress
T28251	1	1-May-05	Thermophilic Anaerobic Plate Count in Foods and Food Ingredients	Client Specific	NA	Current

## 40-45-Micro Waters

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-45001	1	15-Apr-08	Detection of E. coli and Total Coliforms by Membrane Filtration	SM 9222B & G (20)	C66023	Current
40-45002	3	15-Oct-09	Determination of Fecal Coliforms in Water by Membrane Filtration	SM 9222D (20), EPA-600/8-78-018	NA	Current
40-45003	1	14-Apr-08	Quanti-Tray® Enumeration Procedure.	IDEXX®	NA	Current
40-45004	0	1-Dec-06	Detection of Coliforms in Potable and Nonpotable Water by Colilert®	SM (20) 9223B	C66123	Current
40-45005	2	1-Mar-10	Determination of Fecal Streptococcus and Enterococcus Groups in Water by Membrane Filtration (MF)	SM (20) 9230 C & SM (20) 9212B	E30023, F12423	Current
40-45007	0	15-Dec-06	Determination of Pseudomonas aeruginose in Water by Membrane Filtration (MF)	SM (20) 9213E	P75023A	Current
40-45008	0	1-Aug-06	Aerobic (Heterotrophic) Plate Count Water by Membrane Filtration (MF)	SM (20) 9215D	S79923	Current
40-45009	0	27-Jul-07	Most Probable Number (MPN) Technique for Members of the Coliform Group.	SM 9221B (20)	C69123, F20123	Current
E01023	Retired		Detection of Escherichia Coli in Water by Membrane Filtration Using mTEDC	EPA 1603; SM (20) 9222B	NA	Retired
F20023	2	26-Sep-01	Fecal Coliform in Water, Wastewater and Sludge	SM (18) 9222D	NA	Current

## 40-50-Feed

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
12-003	2	17-Jun-03	Procedures for the Sieve Tests	none	NA	Current
12-011	1	1-Jun-04	Receiving and Log-in of Samples	none	NA	Current
12-016	0	14-Sep-00	Operation and Maintenance of a pH Meter	none	NA	Current
12-017	0	18-Oct-00	Storing, Handling and Use of Compressed Gas Cylinders	none	NA	Current
12-021	0	30-Oct-02	HACH Dilutor Dispenser Calcium Mineral Preparation.	none	NA	Current
12-023	0	1-Jun-04	HACH Dilutor Dispenser Phosphorus Preparation	none	NA	Current
40-50001	0	1-Dec-06	Physical Characteristics of Pet Foods, Feeds, and Ingredients	NA	NA	Current
40-50002	Retired		Moisture Determination in Feeds, Feedstuff and Forages	NFTA; AOAC 930.15	M55013	Retired
40-50003	Retired		Ash Analysis in Feeds and Feedstuff	AOAC 942.05, 936.07	A85013	Retired
40-50004	0	1-Sep-06	Moisture Determination in Oilseeds	AOCS Ba 2A 38	M55013	Current
40-50005	0	1-Sep-06	Moisture Determination in Minerals	AFPC	M55013	Current
40-50006	0	15-Nov-06	Calcium by Flame AA	AOAC 968.08 (17)	NA	Current
40-50007	1	15-Oct-09	Determination of Nitrogen Protein by Combustion	AOAC 990.03 (20)	N34513	Current
40-50008	Retired		Daily Operation and Maintenance of the Leco FP 528	Instrument Manual	12-19	Retired
40-50009	0	15-Dec-06	Fat by Acid Hydrolysis in Pet Foods or Feedstuffs	AOAC 954.02	F12213	Current
40-50010	2	15-Oct-09	Fat Determination in Feeds/Ingredients by Soxtec Extraction	AOAC 2003.06 & 2003.05	F11213 & 12-5	Current
40-50011	0	18-Dec-06	Analysis of Phosphorus in Feeds, Foods, Feed Ingredients and manure samples	AOAC 965.17	P39013	Current
40-50012	0	18-Dec-06	Operation of Atomic Absorption Spectrophotometer	AA User Manual	12-22	Current
40-50013	Retired		Dry Ashing of Feed, Food, Ingredients, and Manure Samples for Analysis by ICP or flame atomic absorption	AOAC 968.08	12-10	Retired
40-50014	Retired		Operation and Maintenance of the Fibertec Hot Extraction Unit	Operator's manual	12-018	Retired
40-50015	2	15-Oct-09	Crude Fiber in Feeds and Feedstuff using the Fibertec System	AOAC 978.10, Foss AN304 & Foss ASN 3428	F31013	Current
40-50016	Retired		Grinding Feed and Feedstuff Samples	none	12-01, 12-02	Retired
40-50017	In Progress		% Starch in Feeds and Feed Ingredients	In Progress	In Progress	In Progress

## 40-50-Feed

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
40-50018	0	9-Nov-09	Determination of Acid Detergent Fiber (ADF) in Feeds and Ingredients Using the Fibertec System.	AOAC 973.18 modified, Tecator Application Note 304 and Sub Note 3429	F30113	Current
40-50019	0	15-Jan-07	Moisture Determination of Molasses and other Liquid and Semi-Liquid Products	AOAC 925.45D	M55013	Current
40-50020	0	15-Nov-09	General Cleaning for Glassware for the Feed Laboratory	none	NA	Current
40-50021	0	2-Feb-07	Crude Fiber in Feeds and Feedstuff Using the Ankom Fiber Analyzer	AOCS Ba 6a-05I /AOAC 962.09 (17)	NA	Current
40-50022	1	30-Dec-09	Determination of Amylase Neutral Detergent Fiber (aNDF) using the Fibertec System	FOSS AN3434, NFTA Method 5.1 & 5.2 (93)	NA	Current
40-50023	In Progress		NIR	In Progress	NA	In Progress
40-50024	In Progress		Fat in Meat and Meat Products by Soxtec Extraction	AOAC 991.36	NA	In Progress
C73051	2.3	4-Jan-00	Determination of Color in Fats and Oils	AOCS Cc13a-43	NA	Current
F12113	1	19-Jan-00	Fat Determination in Crystalyx by the Modified Mojonnier Ether Extraction Method	AOAC (15) 932.06	NA	Current
F30113	Retired		Acid Detergent Fiber in Feeds and Ingredients Using the Fibertec System	AOAC 973.18	NA	Retired
F65051	2	31-Jan-02	Free Fatty Acids in Crude and Fined Oils	AOAC 940.28, AOCS Ca 5-a-40	NA	Current
I50051	3	8-Feb-02	Determination of Insoluble Impurities	AOCS Ca2b-38, Ca3-46	NA	Current
M50051	3	4-Feb-02	Determination of MIU in Fats and Oils	AOCS, 1986	NA	Current
N50013	0	29-Dec-00	Determination of Non-Protein Nitrogen	AOAC (15) 941.04	NA	Current
P22051	3	8-Feb-02	Peroxide Value (P22151)	AOAC 965.33, 15th Edition	NA	Current
P37023	3	2-Aug-04	Phosphorus (Citrate Insoluble)	AOAC (17) 963.03	NA	Current
P56513	2	29-May-02	Available Potassium in Fertilizers	AOAC (16) 983.02	NA	Current
S28551	1.1	1-Jan-94	Sieve Determination	AOAC 965.22	NA	Current
U40013	3	8-Feb-02	Determination of Unsaponifiable Matter	AOCS Ca6a-40	NA	Current

## 40-60-Soil Fertility

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
51-002	1	22-Dec-99	Using Standard Soil Scoops	none	NA	Current
51-007	Retired		Changing and Using Nitrogen Gas Cylinders	none	NA	Retired
51-008	2	22-Dec-99	Operation of the Perkin Elmer Model 2380 Model Atomic Absorption Spectrophotometer (AA)	none	NA	Current
51-009	0	16-May-03	FIA (Flow Injection Analyzer) Operation and Maintenance	none	NA	Current
59-002	0	24-Feb-99	MVTL/NCR-13 Soil Scooping	none	NA	Current
59-003	0	24-Feb-99	MVTL Clean-up and Inventory	none	NA	Current
59-004	0	24-Feb-99	MVTL pH	none	NA	Current
59-008	0	24-Feb-99	Operation of the Perkin Elmer 3110 Atomic Absorption Spectrometer for Soil Testing	none	NA	Current
59-011	0	24-Feb-99	Grinding Soil Samples for Analysis	none	NA	Current
59-012	0	19-May-98	MVTL Trace Minerals	none	NA	Current
59-013	0	19-May-98	MVTL Calcium and Magnesium	none	NA	Current
59-019	0	19-May-98	MVTL Sulfur	none	NA	Current
59-020	0	4-Mar-99	Lab Safety	none	NA	Current
59-021	0	24-Feb-99	Operation of Orion pH Meters	none	NA	Current
59-022	0	24-Feb-99	Operation of the Brinkman Probe Colorimeter for Soil Analysis	none	NA	Current
B49023	0	20-May-96	Colorimetric Determination of Hot Water Extractable Boron	NCR 221 - Revised	NA	Current
C13011/M08 011	0	20-May-96	Determination of Exchangeable Calcium and Magnesium	NCR 221 - Revised	NA	Current
C28011	1.1	6-Jan-97	Cation Exchange Capacity (CEC) by Ammonium Saturation and Acid NaCl Method	none	NA	Current
C82011/I6801 1/ M17011/Z330 11	0	20-May-96	DTPA Extraction for Copper, Iron, Manganese and Zinc	NCR 221 - Revised	NA	Current
O61011	0	20-May-96	Determination of Soil Organic Matter by Loss of Weight on Ignition	NCR 221 - Revised	NA	Current
P28011	0	20-May-96	pH Determination in Soil with Orion pH Meter	NCR 221 - Revised	NA	Current
P30511	0	20-May-96	Determination of Lime Requirement by the SMP-Buffer Method	NCR 221 - Revised	NA	Current

## 40-60-Soil Fertility

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
P35023	0	20-May-96	Colorimetric Determination of Extractable Phosphorus by Bray-II Ascorbic Acid Method	NCR 221 - Revised	NA	Current
P40011	0	20-May-96	Colorimetric Determination of Extractable Phosphorus by Bray-I Ascorbic Acid Method	NCR 221 - Revised	NA	Current
P42011	0	20-May-96	Colorimetric Determination of Extractable Phosphorus by Olsen Method	NCR 221 - Revised	NA	Current
P57011/S56511	0	20-May-96	Determination of Exchangeable Potassium and Sodium	NCR 221 - Revised	NA	Current
S72011	0	20-May-96	Determination of Soluble Salts by the Measurement of Electrical Conductance of 1:1 Extract of Soil	NCR 221 - Revised	NA	Current
S91511	0	20-May-96	Colorimetric Determination of Extractable Sulfur	NCR 221 - Revised	NA	Current
T20011	0	20-May-96	Determination of Particle Size (Texture) by Hydrometer Method	none	NA	Current

## 50-10-Compliance

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
50-10001	Retired		Managing Retain Room Critical supplies	none	NA	Retired
50-10002	2	5-Jun-09	Conducting and Reporting Internal Audits	none	61-4, 61-7	Current
50-10003	0	15-May-06	Distribution of Audits for GLP/GCP/VICH GL9 Studies	none	61-8	Current
50-10004	1	13-Aug-10	Compliance Unit Records	none	61-19	Current
50-10006	0	16-Mar-09	Starting and Updating Quality Assurance (QA) Statements	none	61-18	Current

## 50-12-Safety

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
50-12001	0	15-Apr-08	Operation, Maintenance & Calibration of the 840005 Sound Meter	Sound Meter 840005 Instruction Manual	NA	Current
50-12002	0	16-Jun-10	Laboratory Hood Monitoring	ANSI/AIHA Z9.5-2003, Velocichk air velocity meter 8330 1980066 rev. E	NA	Current

## 70-12-IT

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
70-12001	In Progress		Computer Validation	In Progress		In Progress
70-12003	0	13-Feb-09	Posting Data to the Web	none	NA	Current
70-12004	0	1-Sep-08	Backup Protocol For Computer Stored Data	none	91-9	Current
81-026	2	30-Jan-03	Computer Software Security	none	NA	Current
91-005	3	1-Jul-05	LIMS System Security for Log On	none	NA	Current
91-006	7	1-Aug-05	LIMS and Data Acquisition System Software Change	none	NA	Current
91-007	2	1-Aug-05	Maintenance of LIMS System Hardware and Peripheral Devices	none	NA	Current

## 70-14-Purchasing

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
70-14001	0	15-May-06	Performance Evaluations for Critical Supply Vendors	none	NA	Current
70-14002	0	15-May-06	Supplier Qualification for Critical Supply Purchases	none	NA	Current
70-14003	In Progress		Purchasing Supplies	In Progress	In Progress	In Progress
70-14004	In Progress		Purchasing Small and Large Equipment	In Progress	In Progress	In Progress
70-14005	0	1-Sep-08	Requisitioning Miscellaneous Items - Fees Resale, Repairs, Calibration	none	NA	Current
81-020	7	15-Jun-04	Purchasing Supplies, Sm/Lg Equipment and Misc. Items	none	NA	Current

## 80-10-Bismarck

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-001	Retired		Temperature Monitoring of the Refrigerators, Walk-in Cooler, Waterbaths, and Incubators Located in the Bismarck Laboratories			Retired
18-002	Retired		Temperature Monitoring of the Ovens			Retired
18-003	Retired		Temperature Monitoring of Coal Sample Dryers			Retired
18-005	Retired		Procedure for the Archiving of Bismarck Laboratory Documents			Retired
18-006	Retired		Calibration of the Eppendorf Digital Pipets			Retired
18-007	Retired		Monitoring and Calibration of the Electronic Balances Located in the Bismarck Laboratories			Retired
18-008	7	1-Mar-05	Monitoring of the Water System Located in the Bismarck Laboratory			Current
18-009	4	1-Mar-05	Maintenance of the Eyewash Stations and Safety Showers Located in the Bismarck Laboratory			Current
18-011	Retired		Storing, Handling and Use of Compressed Gas Cylinders			Retired
18-021	Retired		Operation of the Adams Centrifuge			Retired
18-036	3	17-Jan-05	Calibration of Hydrometers			Current
18-049	5	15-Mar-07	Northwest Analytical Laboratory Information Management system Log-In Procedure			Current
18-092	2	15-Mar-05	Maintenance of Desiccators			Current
18-100	6	17-Jan-05	Filing Client Reports and Computer Bench Sheets			Current
18-101	3	2-Feb-08	Return and Disposal of Hazardous Waste Samples			Current
18-139	0	15-Feb-06	Physical Inventory Procedures			Current
18-141	1	15-Apr-08	Northwest Analytical Laboratory Billing System Procedure			Current
80-10001	0	15-Apr-10	Temperature Monitoring of the Refrigerators, Walk-in Coolers, Waterbaths and Incubators		18-1.10	Current
80-10002	0	15-Apr-10	Temperature Monitoring of the Ovens and Autoclave		18-2.11	Current
80-10003	0	15-Apr-10	Procedure for Archiving Laboratory Documents		18-5.6	Current
80-10004	0	15-Apr-10	Calibration of Non Class A Pipets and Burets		18-6.2	Current
80-10005	0	15-Apr-10	Storage, Handling and Use of the Compressed Gas C ylinders		18-11.4	Current
80-10006	0	15-Apr-10	Monitoring and Calibration of the Electronic Balances Located in the Bismarck Laboratories,		18-7.8	Current

## 80-10-Bismarck

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
D35023	5	27-Feb-09	Microwave Digestion Procedure	MARS Operation Manual		Current
H03045	Retired		Determination of Halogens as Chlorine	ASTM D2361 E776, D808		Retired
H03245A	Retired		Determination of Halogens as Fluorine using the 815 Robotic USB Sample Processor XL	SW-846 5050; ASTM D808		Retired

## 80-11-Bismarck General Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-020	5	1-Mar-05	Use of the Toxicity Corrosive Leaching Procedure (TCLP) Extractor and Filtration Device			Current
18-064	7	15-Oct-06	Shake Extraction of Solid Waste with Water			Current
18-070	4	15-Sep-05	Sample Preparation of Incinerator Ash Samples			Current
18-071	4	15-Nov-06	Calibration of Liquid-in-Glass Thermometers			Current
18-124	2	1-Feb-05	Synthetic Precipitation Leaching Procedures (SPLP)			Current
18-125	Retired		Operation of the Karl Fischer Titrator			Retired
18-132	1	1-Nov-04	Elutriate Extraction of Soil or Sediment with Water			Current
80-11001	2	30-Apr-10	Determination of Biochemical Oxygen Demand & Carbonaceous Biochemical Oxygen Demand	SM (20) 5210B	B02023	Current
80-11002	0	15-Apr-10	BOD Probe Maintenance			Current
80-11003	0	1-Dec-09	Determination of Total Kjeldhal Nitrogen in Drinking, Surface, Saline and Waste Waters	SM (20) 4500-Norg-B	N42023	Current
80-11004	0	1-Dec-09	Determination of Total Kjeldahl Nitrogen in Sludges and other Miscellaneous	SM (20) 4500 Norg B	N42023A.6	Current
80-11005	0	15-Feb-10	Determination of Total Organic Carbon and Dissolved Organic Carbon in Saline, Groundwater and Surface Waters and Domestic and Industrial Wastes	SM (20) 5310C	T04023.8	Current
80-11006	0	15-Feb-10	Determination of Total Organic Carbon in Drinking Water	SM (20) 5310C	T04023A.3	Current
80-11007	0	15-Apr-10	Determination of Karl Fisher Moisture using the 784 KFP Titrino	ASTM E203	M62045B.2; 18-125.1	Current
80-11009	0	30-Apr-10	Determination of Chemical Oxygen Demand (COD)	HACH 8000	C02023.7	Current
C02023	Retired		Determination of Chemical Oxygen Demand (COD)	HACH COD Reactor Digestion Method 8000		Retired
C02023	Retired		Determination of Chemical Oxygen Demand (COD)	HACH COD Reactor Digestion Method 8000		Retired
C32823	Retired		Determination of Chloride by Potentiometric Titration	AM (18) 4500Cl-D		Retired
G65023B	4	15-Dec-08	Determination of Oil and Grease by Solid Phase Extraction	EPA 1664 Rev. A, Horizon Training Manual and Users Guide		Current
M62045B	Retired		Determination of Karl Fischer Moisture using the 784 KFP Titrino	ASTM D1744, Instructions for Use of the 784 KFP Titrino		Retired
N42023	Retired		Determination of Total Kjeldahl Nitrogen (TKN)	SM (20) 4500-Norg-B		Retired

## 80-11-Bismarck General Chemistry

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
N42023A	Retired		Determination of Total Kjeldahl Nitrogen (TKN) in Solid Waste Samples	SM (18) 4500Norg-B		Retired
R20123	8	1-Dec-08	Determination of Reactive Sulfides	SW-846 9030 Reactivity Methods		Current
S75031H	4	1-Apr-06	Determination of Oil & Grease (HEM) by Soxhlet Extraction	SW-846, Method 9071B		Current
S90123	8	15-Oct-08	Determination of Total Sulfides	SM (18) 4500E SW-846 9030		Current
S91023	0	2-Apr-07	Determination of Sulfite	EPA 377.1; SM (20) 4500SO32-B		Current
T04023	Retired		Determination of Total Organic Carbon	EPA 415.1; SM (18) 5310C; SW-846 9060		Retired
T04023A	Retired		Determination of Total Organic Carbon and Dissolved Organic Carbon	SM (19) 5310C		Retired

## 80-12-Bismarck Metals

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-031	Retired		Operation of the EDL System 2 Power Supply			Retired
18-038	10	15-Mar-07	Preparation of Aqueous Samples for Atomic Absorption ICP-AES or ICP-MS Analysis			Current
18-067	9	27-Feb-09	Oxygen Bomb Combustion of Oil/Coal Samples			Current
18-099	3	1-Oct-05	Sample Preparation and Mercury Analysis on Mercury Technologies of Minnesota Samples			Current
18-102	6	1-Mar-06	Routine Operation of the Perkin-Elmer Optima 3000ICP			Current
18-115	2	2-Feb-09	Routine Operation of the Perkin Elmer Analyst 100 Atomic Absorption Spectrophotometer			Current
80-12001	1	15-Apr-10	Determination of Hexavalent Chromium	SM (18) 3111C	C45023	Current
80-12002	0	15-Feb-10	Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry	245.1	M23023F.0	Current
80-12003	0	15-Feb-10	Determination of Mercury in Solid or Semi-Solid Waste by Cold Vapor Atomic Absorption Spectrometry	SW-846 7471B, 7000A	M23023C.2	Current
80-12004	0	15-Feb-10	Determination of Mercury in Liquid Waste by Cold Vapor Atomic Absorption Spectrometry	SW 846 7470A, 7000A	M23023E.0	Current
80-12005	In Progress		Determination of Trace Metals by 200.7	200.7	M26023A-Bis	In Progress
80-12006	In Progress		Determination of Trace Metals by 6010C	6010C	M26023A-Bis	In Progress
B56023	0	15-Nov-05	Determination of Bromide and/or Bromine by ICP-MS	SW-846 6020A; MVTL M26123		Current
C46023 C80023 I65023 L20023 M15023 Z30034	3	15-Oct-05	Metals by Flame Atomic Absorption Analysis	SM (18) 3111B		Current
H03145	3	15-Mar-07	Determination of Halogens as Bromine	ASTM D808		Current
M23023C	Retired		Determination of RCRA Mercury in Solid Samples by Manual Cold Vapor Technique	SW-846 7471 & 7000A		Retired
M23023E	Retired		Determination of Mercury in Waters (RCRA)	EPA 7470A		Retired
M23023F	Retired		mercury waters drinking and waste	245.1		Retired
M26023A-BIS	0	16-Mar-09	Determination of Trace Metals by ICP by Method 200.7	EPA 200.7		Current
M26123A	1	15-Dec-08	Determination of Trace Metals by ICP-MS by Method 200.8	EPA 200.8		Current

## 80-12-Bismarck Metals

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
M26123B	1	15-Dec-08	Determination of Trace Metals by ICP-MS by Method 6020	SW946, 6020A		Current
M39523S	2	1-Jul-08	Determination of Reactive Silica	HACH Method 8185		Current
S49023	3	1-Oct-05	Determination of Water Soluble Sodium	ASTM E776-12		Current
S92531A	3	1-Apr-06	Sulfur ICP Analysis	EPA 200.7		Current

## 80-13-Bismarck FIA

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-054	6	15-Mar-07	Soil Extraction Procedure for Sulfate Analysis			Current
18-055	6	1-Mar-07	Soil Extraction Procedure for Nitrate, Nitrite and Ammonia Analysis			Current
18-056	5	15-Mar-07	Soil Extraction Procedure for Chloride Analysis			Current
18-057	5	1-Mar-07	Soil Extraction Procedure for Phosphorous (Olsen Method)			Current
18-058	6	15-Mar-07	Soil Extraction Procedure for Phosphorous (Bray P-1 Method)			Current
18-127	3	16-Mar-09	Solid Extraction Procedure for Cyanide			Current
80-13001	0	30-Apr-10	Determination of Sulfate in Drinking Water by Automated Colorimetry	EPA 375.2 Revision 2	S88523B.0	Current
80-13003	0	1-Sep-09	Standardization Procedure for Silver Nitrate Solution (Cyanides)	SM (20) 4500-CN	18-126	Current
80-13004	0	1-Sep-09	Standardization Procedure for 1000 ppm Cyanide Standard Solution	SM (20) 4500-CN	18-129	Current
80-13005	0	15-Feb-10	Determination of Cyanide	335.4; SM (20) 4500CN G	C95032.13	Current
80-13006	0	15-Feb-10	Determination of Weak Acid Dissociable Cyanide (WAD CN)	SM (20) 4500CN I	C95323A.7	Current
C32023	8	2-Apr-07	Determination of Chloride	SM (18) 4500Cl-E; Lachet Quik Chem 10-117-07-1-A		Current
C95023	Retired		Determination of Total and Amenable Cyanide	EPA 335.4; SM (19) 4500-CN E; SW-846 9012A; Leeman Labs AP1214; Lachet 10-204-00-1-A		Retired
C95323	Retired		Determination of Weak Acid Dissociable Cyanide (WAD CN)	SW-846 Meth. 9012A, EPA 600/4-79-020, SM (19) 4500CN-I, Lachat 10-204-00-1-A; Leeman Labs AP1214		Retired
N41023	9	15-Apr-08	Determination of Ammonia-Nitrogen	SM (18) 4500NH3-H; QuikChem 10-107-06-01-B		Current
N41023A	Retired		Determination of Low Level Ammonia Nitrogen	SM (18) 4500NH2-H; 350.1; Lachet		Retired
N43023 N49023	8	15-Mar-07	Determination of Nitrate, Nitrite and Nitrate + Nitrite Nitrogen	SM (18) 4500-NO3-F; QuikChem 10-107-04-1-A		Current
N43023A N49023A	1	15-Mar-07	Determination of of low level Nitrate, Nitrite and Nitrite-Nitrate Nitrogen	SM (18) 4500NO3-F; 353.2		Current
P33023	7	31-Dec-08	Determination of Phenols	SM (18) 5530D; QuikChem 10-210-00-1-A		Current

## 80-13-Bismarck FIA

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
P35023 M46031	11	27-Feb-09	Determination of Orthophosphate and Phosphorus Pentoxide	SM (18) 4500-P-F; QuikChem 10-115-01-1-E, 10-115-10-1-F; 365.1		Current
P35023A	Retired		Determination of Low Level Orthophosphate	SM (18) 4500 P-F; 365.1		Retired
P38023 P38323	2	27-Feb-09	Determination of Phosphorus	SM (18) 4500 P-F; 365.1		Current
R20523	3	15-Feb-06	Determination of Reactive Cyanides	SW 846 9014		Current
S88523	9	16-Jun-08	Determination of Sulfate	SM (18) 4500-SO4 E: Quik Chem 10-116-10-1-A		Current
S88523B	Retired		Determination of Sulfate in Drinking Water	EPA 600 R-93-100, Method 375.2		Retired

## 80-14-Bismarck Waters

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-035	12	1-May-08	Preparation of Samples for FAA and ICP-AES and ICP/MS Analysis			Current
18-051	4	1-Mar-05	Calculation of the Cation-Anion Balance and the Percent Error on Samples			Current
18-052	3	1-Mar-05	Determination of the Langlier Saturation Index			Current
18-053	3	1-Mar-05	Water Calculations			Current
80-14001	0	1-Jun-09	Determination of Acidity	SM (18) 2310B	A13023	Current
80-14002	0	15-Sep-09	Determination of Turbidity	SM (20) 2130B; HACH 2100P	T80023	Current
80-14003	1	15-Feb-10	Determination of Color	SM (20) 2120B	C73023	Current
80-14004	0	15-Sep-09	Determination of Total Chlorine	HACH 8167; SM 4500-Cl G	C34323	Current
80-14005	1	15-Feb-10	Determination of Alkalinity, pH, Fluoride and Specific Conductance Using the Brinkmann Autotitration System	SM (20) 2320B, 4500H-B, 2150B and 4500F-C, Brinkmann Instructions for Use	A45023B, F45023C, C78023B, P25023B	Current
80-14006	0	15-Apr-10	Preparation and Analysis of Samples for Halogens as Fluorine	SW-846 Method 5050; Parr Oxygen Calorimeter User Manual	H03245A.1	Current
80-14007	0	15-Feb-10	Determination of Total and Volatile Solids in Water	SM (14) 208E, EPA 160.4, SM (20) 2450B	S69023/S68523.4	Current
80-14008	0	15-Apr-10	Determination of Specific Conductance using the AB30 Accumet Conductivity Meter	SM (20) 2510B	C78023A.5	Current
80-14009	1	15-Jun-10	Determination of Chloride by Potentiometric Titration	SM (20) 4500Cl D	C32823.3	Current
80-14010	0	15-Apr-10	Determination of pH using the Accumet Basic pH Meter	SM (20) 4500H+ B	P25023A.6	Current
80-14011	0	15-Apr-10	Determination of pH in Soils or Wastes using the Accumet Basic pH Meter	SW-846 Method 9045D	p25023S.5	Current
80-14012	0	15-Apr-10	Determination of Total Dissolved Solids (TDS)	SM (20) 2540C	S69523.4	Current
80-14014	0	15-Apr-10	Determination of Total and Volatile Solids in Solid and Semisolid Samples	SM (20) 2540G	S69023A.4	Current
80-14015	0	15-Apr-10	Determination of Seattleable Matter	SM (20) 2540F	S67523.5	Current
80-14016	0	30-Apr-10	Determination of Sulfate using the HACH Colorimeter	HACH, 1977	A88523A.6	Current
80-14017	0	30-Apr-10	Determination of Tannin and Lignin	SM (20) 5550B	T01023.4	Current
A45023	Retired		Determination of Alkalinity	SM (18) 2320B		Retired
C15015A	Retired		Determination of Calcium Carbonate Equivalence (CCE) and Neutralization Potential	EPA 600/2-78-054, March 1978, USDA Handbook 60, 1969		Retired

## 80-14-Bismarck Waters

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
C78023A	Retired		Determination of Specific Conductance Using the AB30 Accumet Conductivity Meter	SM (18) 2510B		Retired
P25023A	Retired		Determination of pH by the Accumet Basic pH Meter	SM (18) 4500H-B		Retired
P25023S	Retired		Determination of pH in Soil	SW-846 Method 9045		Retired
S67523	Retired		Determination of Settleable Matter	EPA 160.5		Retired
S68023	4	1-Dec-05	Determination of Total Suspended Solids	SM (18) 2540D		Current
S69023 S68523	Retired		Determination of Total, Volatile and Fixed Solids	SM (18) 2540B, EPA 160.4		Retired
S69023A	Retired		Determination of Total Solids in Sludge	SM (18) 2540B, 2540G		Retired
S69523	Retired		Determination of Total Dissolved Solids	SM (18) 2540C		Retired
S88523A	Retired		Determination of Sulfate by HACH Colorimeter	HACH		Retired
T01023	Retired		Determination of Tannin and Lignin	SM (18) 5550B		Retired

## 80-15-Bismarck Overburdens

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-022	Retired		Use of the YSI Model 32 Conductance Meter			Retired
18-061	Retired		Preparation, Storage and Disposal of Overburden Samples			Retired
80-15001	0	15-Jun-09	Acid Base Accounting Calculations	EPA 600/2-78-054	A07515	Current
80-15002	0	15-Jun-09	Determination of pH on a Saturated Paste	Agronomy #9; EPA 600/2-78-054	P26015	Current
80-15003	0	15-Jun-09	Determination of Saturation Percentage (SP)	Agronomy #9; EPA 600/2-78-054	S07015/S07115	Current
80-15004	0	15-Oct-09	Determination of Sodium Adsorption Ratio	Agronomy #9 Part 1, Methods of Soil Analysis (1965), Field and Laboratory Methods Applicable to Overburdens and Minesoils, EPA 600/2-78-054 (1978)	S59015, C10015, M05015, S56015	Current
80-15005	Retired		Determination of Electrical Conductivity	EPA 600/2-78-054	C78015	Retired
80-15006	0	15-Oct-09	Determination of Texture	Field and Laboratory Methods Applicable to Overburdens and Minesoils, EPA 600/2-78-054. 1978	T20015, T20215, T20415	Current
80-15007	0	15-Apr-10	Determination of Very Fine Sand	Field and Laboratory Methods Applicable to Overburdens and Minesoils	T20115.5	Current
80-15008	0	15-Apr-10	Determination of Organic Matter	NCR-13	O62015.5	Current
80-15009	0	15-Apr-10	Determination of Calcium Carbonate Equivalence (CCE) and Neutralization Potential	Field and Laboratory Methods Applicable to Overburdens and Minesoils; USDA Handbook 60	C15015A.6	Current
80-15011	0	15-Apr-10	Preparation, Storage and Disposal of Overburden Samples		18-61.5	Current
O62015	Retired		Determination of Organic Matter	NCR-13		Retired
T20115	Retired		Determination of % Very Fine Sand	Field and Laboratory Methods Applicable to Overburdens and Minesoils, EPA 600/2-78-054,1978		Retired

## 80-16-Bismarck Energy

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-013	3	1-Mar-05	Rotation, Storage and Disposal of Daily Coal Samples			Current
18-015	Retired		Operation of the Sample Crusher			Retired
18-016	6	1-Feb-07	Operation of the Sample Pulverizer			Current
18-017	5	1-Feb-07	Preparation, Storage and Disposal of Coal Samples			Current
18-019	7	1-Feb-07	Operation of the SC-444 Sulfur Analyzer and its Components			Current
18-037	6	13-Feb-09	Monitoring of the Air Dry Ovens for % Loss Efficiency			Current
18-096	Retired		Use and Operation of the Hardgrove Grindability Tester			Retired
18-142	0	15-Mar-07	Leco TruSpec CHN			Current
18-143	0	13-Feb-09	Use and Operation of LECO AMA254 Mercury Analyzer			Current
80-16001	0	1-Jun-09	Determination of Sulfate Sulfur	ASTM D2492	S96531	Current
80-16002	0	15-Jun-09	Determination of Chlorine by the TOX-100 Chlorine Analyzer	ASTM D6721	C34031	Current
80-16003	0	15-Apr-10	Temperature Monitoring of the Coal Sample Dryers		18-3.5	Current
80-16006	0	15-Apr-10	Operation of the Sample Crusher		18-15.5	Current
80-16007	0	15-Apr-10	Determination of Grindability of Coal by the Hardgrove Machine	ASTM D409	18-96.2; H05031	Current
80-16008	0	15-Apr-10	Determination of Pellet Bulk Density	ASTM E873	B80131A3	Current
80-16009	0	30-Apr-10	Determination of Oven Dry Moisture	ASTM E949; ASTM D3173; ASTM E871	M60031.5	Current
A86545W	0	27-Feb-09	Determination of Total Moisture of Wood Fuels	ASTM E871		Current
A87031	5	15-Nov-05	Determination of Ash in Coal or Coke Samples	ASTM D3174		Current
A87031A	3	1-Oct-05	Determination of Ash in Wood or Wood Products	ASTM D1102		Current
A87131	3	1-Oct-05	Loss of Ignition of RDF Materials	ASTM E830		Current
A88031	7	1-Feb-07	Preparation of Samples for Mineral Ash Analysis	ASTM D3682		Current
A91031 A92031 A93031	5	1-Apr-09	Fusibility of Coal and Coke Ash	ASTM D1857		Current
B75031A B75545A B76041A	6	1-Feb-07	Determination of Gross Calorific Value by Isoperibol Bomb Calorimeter	ASTM D5865, Parr Manual 148, 156		Current

## 80-16-Bismarck Energy

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
B75031B B75545B B76041B	4	1-Feb-07	Determination of Gross Calorific Value by Isoperibol Bomb Calorimeter in Samples that have low BTU Content	ASTM D240, Parr Manual 148, 156		Current
B75031C B75545C B76041C	4	1-Feb-07	Determination of Gross Calorific Value by Isoperibol Bomb Calorimeter in Solvent-like Samples	ASTM D240, Parr Manual 148, 156		Current
B75031D B75545D B76041D	5	2-Feb-07	Determination of Gross Calorific Value by Isoperibol Bomb Calorimeter in Diesel Fuel and Fuel Oil Samples	ASTM D240, Parr Manual 148, 156		Current
B80131A1	4	27-Feb-09	Determination of Pellet Diameter	APFI-PF 1-88		Current
B80131A2	4	27-Feb-09	Determination of Pellet Length	APFI-PF 1-88		Current
B80131A3	Retired		Determination of Pellet Bulk Density	APFI-PF 1-88; ASTM E873-82		Retired
B80131B	4	27-Feb-09	Determination of Pellet Fines	APFI-PF-1-88		Current
C17031	3	1-Oct-05	Determination of Available Calcium Oxide in Quicklime and Hydrated Lime	AWWA Standard for Quicklime and Hydrated Lime ANSI/AWWA B202-88, Sect. 4.2		Current
C17131	4	1-Oct-05	Determination of Calcium in Lime Samples	AOAC 3003.53		Current
C17231	4	1-Oct-05	Determination of Sulfate in Lime Samples	AOAC 3003.55		Current
E66531	0	16-Apr-07	Determination of Equilibrium Moisture in Coal	ASTM Method D1412		Current
H05031	Retired		Determination of Hardgrove Grindability of Coal	ASTM D409		Retired
I52231	3	1-Oct-05	Determination of Silica and Other Insolubles in Lime Samples	AOAC 3003.51		Current
I52231A	3	1-Oct-05	Determination of Objectionable Insoluble Matter in Quicklime	AWWA Standard of Quicklime and Hydrated Lime ANSI/AWWA B202-88 Section 4.4		Current
I64031	4	1-Oct-05	Determination of Iron and Aluminum Oxide in Lime Samples	AOAC 3003.52		Current
M08131	3	1-Oct-05	Determination of Magnesium in Lime Samples	AOAC 3003.54		Current
M60031	Retired		Determination of Total Moisture	ASTM D3173, D2961		Retired
M61531 M61031	4	1-Feb-07	Determination of Total Moisture (Oven Dry Moisture)	ASTM D3173, D2961		Current
S28631	2	1-Oct-05	Determination of Sieve Analysis	ASTM D197-87		Current

## 80-16-Bismarck Energy

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
S38031	3	1-Oct-05	Determination of Slaking Rate for Quicklime	AWWA Standard for Quicklime and Hydrated Lime ANSI/AWWA B202.88 Section 4.3		Current
S62531 C17431	8	15-Feb-06	Determination of the % Sodium Oxide and/or % Calcium Oxide in the Ash of Daily Coal Samples	ASTM D3682		Current
S75545A	0	16-Apr-07	Determination of Specific Gravity in Coal	Bismarck Laboratory		Current
S92531	9	1-Oct-05	Determination of Total Sulfur or % SO <sub>3</sub>	ASTM D4239 and D1552		Current
S95031	12	15-Oct-06	Determination of Pyritic Sulfur	EPA 600/2-78-054; ASTM D2492		Current
V58031	7	1-Feb-07	Determination of Volatile Matter in Coal or Coke Samples	ASTM D3175		Current
W08023	Retired		Determination of Water Soluble Alkali	MVTL-Bismarck		Retired

## 80-17-Bismarck Fluids

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-042	Retired		Log-In Procedure for Wear Metal and Dragline/Coal Hauling Facility Samples			Retired
18-045	Retired		Routine Operation for the Analysis of Wear Metal Samples by Atomic Absorption			Retired
18-046	Retired		Preparation of Stock Wear Metal Standards			Retired
18-047	Retired		Dilutions of Daily Wear Metal Samples, Check Samples and Wear Metal Standards			Retired
18-059	Retired		Operation of the Saybolt Viscometer			Retired
18-060	Retired		Use of the Petroleum Distillation Apparatus			Retired
18-068	Retired		Operation of the Walker Petroleum Centrifuge			Retired
18-079	Retired		Analysis of Waste Oil Samples for Trace Metals			Retired
18-103	4	2-Feb-09	Oil Trending Program			Current
80-17001	0	15-Apr-10	Determination of Antifreeze Freeze Point		B94223.3	Current
80-17002	0	15-Apr-10	Determination of Antifreeze in Oils (HACH Method)	HACH	A68041A.0	Current
80-17003	0	15-Apr-10	Determination of Fuel Dilution in Oils	ASTM D3278; SW-846 Method 1020B	F80041.4	Current
80-17004	0	15-Apr-10	Determination of Water Content in Oils		W05041.4	Current
80-17005	0	15-Apr-10	Determination of Visgage Viscosity		V31041.4	Current
80-17006	1	30-Apr-10	Determination of Asphaltenes	ASTM D3279	A94045.5	Current
80-17007	0	15-Apr-10	Paint Filter Liquid Test	SW-846 Method 9095B	F65423.3	Current
80-17008	0	15-Apr-10	Determination of Ignitability by the Pensky Martens Closed Cup Method	ASTM D93-79 or D93-80	F40045C.4	Current
80-17009	0	15-Apr-10	Determination of Ignitability by the Setaflash Closed Cup Method	ASTM D3278	F40045.5; 18-65.1	Current
80-17010	0	15-Apr-10	Determination of Flashpoint by Cleveland Open Cup Method	ASTM D92; SW-846 Method 1020B	F40045O	Current
80-17011	0	15-Apr-10	Distillation of Petroleum Products	ASTM D86	D40014.4; 18-60.2	Current
80-17012	0	15-Apr-10	Determination of Centipoise Viscosity	ASTM D2196	V30541.1	Current
80-17013	0	15-Apr-10	Determination of Saybolt Universal Viscosity	ASTM D88	V30041.4; 18-59.3	Current

## 80-17-Bismarck Fluids

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
80-17014	1	30-Apr-10	Determination of Sugar in Petroleum Products	NDDOH	S86541.2	Current
80-17015	0	15-Apr-10	Determination of API Gravity	ASTM D287; ASTM D1250	A75041.4	Current
80-17016	0	15-Apr-10	Determination of Specific Gravity	ASTM D1298	S75525.3	Current
80-17017	0	15-Apr-10	Acidity of Hydrocarbon Liquids	ASTM D1093	A13023A.4	Current
80-17018	0	15-Apr-10	Determination of Pentane Insolubles by Membrane Filtration	ASTM D4055	A94045A.4	Current
80-17019	0	15-Apr-10	Determination of Cloudpoint	ASTM D2500	C58041.3	Current
80-17020	0	15-Apr-10	Determination of Pourpoint	ASTM D97	P65041.3	Current
80-17021	0	15-Apr-10	Determination of Antifreeze in Oils	ASTM D2982	A68041.3	Current
80-17022	0	15-Apr-10	Determination of Water and Sediment in Petroleum Products	ASTM D1796	18.68.2; B54041.4	Current
80-17023	0	15-Apr-10	Determination of Total Methanol, Ethanol and Water Content in Petroleum Products	ASMT X8	A29541.5	Current
80-17024	0	15-Apr-10	Log-in Procedure for Samples for Wear Metal Analysis		18-42.7	Current
80-17025	0	15-Apr-10	Wear Metal Analysis by Atomic Absorption		18-45.6	Current
80-17026	0	15-Apr-10	Analysis of Oil Samples for the Waste Oil Trace Metals		18-79.3	Current
80-17027	0	15-Apr-10	Procedure Used to Perform Daily Dilutions of Samples for Wear Metal Analysis Including the Preparation of Daily Check Samples and Standard Solutions		18-47.5	Current
80-17028	0	15-Apr-10	Determination of Ash in Fuels, Oils and Solvents	ASTM D482	A85541/A86545 .4	Current
A13023A	Retired		Acidity of Hydrocarbon Liquids	ASTM D1093		Retired
A29541	Retired		Determination of Total Ethanol, Methanol, and Water Content in Petroleum Products	ASTM-Information Document on Gasahol, X8		Retired
A68041	Retired		Determination of Antifreeze in a Wear Metal Sample	ASTM D2982-73		Retired
A75041	Retired		Determination of API Gravity	ASTM Designation D287 & D1250 Petroleum Measurement Tables		Retired
A85541/A86545	Retired		Determination of Ash in Fuels, Oils or Solvents	ASTM D482		Retired
A94045	Retired		Determination of Asphaltenes	ASTM Designation D-3279		Retired

## 80-17-Bismarck Fluids

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
A94045A	Retired		Determination of Pentane Insolubles by Membrane Filtration	ASTM D4055-92		Retired
B54041	Retired		Determination of Water and Sediment in Petroleum	ASTM D1796		Retired
B94223	Retired		Determination of Antifreeze Freeze Point	Misco Glycol/Battery Tester Manual		Retired
C58041	Retired		Determination of Cloudpoint	ASTM D2500		Retired
D40041	Retired		Distillation of Petroleum Products	ASTM D86		Retired
F40045	Retired		Determination of Ignitability by the Setaflash Closed-Cup Method	SW-846 1020, ASTM D3278		Retired
F40045C	Retired		Determination of Ignitability by the Pensky Martens Closed Cup Method	ASTM Designation D93, EPA SW-846 Method 1010		Retired
F40045O	Retired		Determination of Flashpoint by Cleveland Open Cup Method	ASTM Designation D92-90, EPA SW-846, Method 1020		Retired
F65423	Retired		Paint Filter Liquid Test	SW-846 9095		Retired
F80041	Retired		Determination of Wear Metal Fuel Dilution	ASTM D3278-79; SW-846 1020A		Retired
P65041	Retired		Determination of Pourpoint on a Petroleum Sample	ASTM D56, D194		Retired
S75525	Retired		Determination of Specific Gravity	ASTM D1298		Retired
S86541	Retired		Determination of Sugar in Petroleum Products	NDDOH, In House Procedure, Sugar in Used Oils		Retired
V30041	Retired		Determination of Saybolt Universal Viscosity	ASTM D88		Retired
V30541	Retired		Determination of Centipoise Viscosity	Lab Line Viscometer Op. Man.		Retired
V31041	Retired		Determination of Visgage Viscosity	Chevron Research Bulletin; Visgage Manual		Retired
W05041	Retired		Determination of Water Content in a Wear Metal Sample	Chevron Research Bulletin		Retired

## 80-18-Bismarck Field Service

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
18-106	1	1-Apr-05	Operation of Solinst Model 121 Interface Meter			Current
18-108	1	1-Apr-05	Operation of Geo Tech 2.4 L Barrel Filter			Current
18-109	1	1-Apr-05	Operation of ISCO Model 2910 Automatic Wastewater Sampler			Current
18-111	1	1-Apr-05	Operation of Keck SP 84 Submersible Sampling Pump			Current
18-112	2	2-Feb-09	Operation of ISCO Model 2100 Automatic Wastewater Sampler			Current
18-113	2	2-Feb-09	Operation of Solinst Model 101 Water Level Meter			Current
18-133	1	2-Feb-09	Operation of Heron Instruments Dipper-T Water Lead Meter			Current
18-134	2	2-Feb-09	Interrogation of ISCO Model 4230 Bubbler Flow Meter			Current
18-135	0	15-Apr-05	Generating Flow Study Reports Using ISCO's Flowlink 4 Software			Current
18-136	0	15-Apr-05	Calibration of YSI 600 Sonde and 650 Water Quality			Current
18-137	1	2-Feb-09	Operation of ISCO Model 4230 Bubbler Flow Meter			Current
18-138	1	16-Mar-09	Procedure for Using Landfill Soil Gas Monitor Loadtec Gem 500 Gas Analyzer			Current

## 80-19-Bismarck Microbiology

Number	Revision	EffectiveDate	Title	Reference	Replaces	SOP Status
80-19001	0	15-Sep-09	Determination of Escherichia coli by the Quanti-Tray® Method	SM (20) 9223B	NA	Current
80-19002	1	30-Apr-10	Aerobic (Heterotrophic) Plate Count in Waters by the Pour Plate Method	SM (20) 9215B	S80051A.2	Current
80-19004	0	15-Jun-10	Determination of Fecal Coliforms in Water (MF Method)	SM (20) 9222D	F20023.4	Current
C66123	5	3-Nov-08	Colilert Test for the Detection of Coliforms in Water	SM 9223B, APHA 20th Ed.		Current
F20023	Retired		Determination of Fecal Coliforms in Water (MF Method)	SM (18) 9222D, APHA 20th ed.		Retired
F20123	6	15-Oct-08	Estimation of Fecal Coliforms by Most Probable Number	SM (18) 9221E.1, APHA		Current
S80051	5	15-Feb-06	Aerobic Plate Count for Solids	BAM, 7th Edition, 1992 FDA		Current
S80051A	Retired		Aerobic (Hetrotrophic) Plate Count in Waters by the Pour Plate Method	SM (20) Method 9215B, APHA		Retired