



December 05, 2012

Mitchell Mysliwicz
Larry Walker Associates
707 Fourth Street
Suite 200
Davis, CA 95616-

Project Name: Machado Lake Nutrients TMDL
Physis Project ID: 1206006-002

Dear Mitchell,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/15/2012. A total of 15 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Conventionals
Total Suspended Solids by SM 2540 D
Total Phosphorus by SM 4500-P E
Total Orthophosphate (as P) by SM 4500-P E
Total Nitrogen by TKN+NO ₃ +NO ₂ (Client calc.)
Total Dissolved Solids by SM 2540 C
Total Dissolved Phosphorus by SM 4500-P E
Nitrite by EPA 300.0
Nitrate by EPA 300.0
Ammonia by SM 4500-NH ₃ D
Subcontract
Total Kjeldahl Nitrogen by EPA 353.2

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier
Extension 202
714-335-5918 cell



mistymercier@physislabs.com

ABBREVIATIONS and ACRONYMS

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

QUALITY ASSURANCE SUMMARY

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and are used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use was assessed through the analysis of procedural blanks at a minimum frequency of one per batch. Physis' QM requires that all procedural blanks be below 10 times the MDL and all detectable constituents in the procedural blanks be flagged in the project sample results with a B qualifier.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS₁/MS₂, BS₁/BS₂, LCS₁/LCS₂, LCM₁/LCM₂, CRM₁/CRM₂, surrogate spikes and/or replicate project sample analysis (R₁/R₂) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

MATRIX SPIKES: MS samples were employed to assess the effect a particular project sample matrix has on the accuracy of a measurement. It is prepared by adding a known amount of the target analyte(s) to an aliquot of the project sample. Matrix spikes indicate the bias of analytical measurements due to chemical interferences inherent in the sample matrix. If the matrix spike recovery does not fall within the specified acceptance limits, it may be an indication of sample matrix interference in the specific project sample used for the MS. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

BLANK SPIKES: BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

CERTIFIED REFERENCE MATERIALS: CRMs are pre-homogenized materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of a preparation and analytical method. CRMs are analyzed to provide evidence that the laboratory method produces results that are comparable to those obtained by an independent organization.

SURROGATES: Where CRMs are unavailable, target analyte recovery can be assessed by monitoring added surrogate compounds/elements. A surrogate is a pure analyte unlikely to be found in any project sample and most often used with organic analytical procedures. Percent recovery is calculated for each surrogate and is used to monitor method performance within each discrete sample and is indicative of the procedure's ability to recover the actual analytes of interest.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's

concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes. Physis' QM requires that all samples analyzed beyond the method recommended holding time be flagged in the sample results with an H qualifier.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.

PHYSIS QUALIFIER CODES

CODE	DEFINITION
*	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified recovery and/or RPD acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore MS recovery and/or RPD acceptance limits do not apply
SL	analyte results for R1 and/or R2 were lower than 10 times the MDL, therefore RPD acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore MS recovery and/or RPD were outside the specified acceptance limits
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

PHYSIS

ANALYTICAL

REPORT

TERRA R AGA AURA

ENVIRONMENTAL LABORATORIES, INC.

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CA ELAP #2769

Conventionals

ANALYTICAL REPORT

ANALYTE	FRACTION	RESULT	MDL	RL	UNITS	QA CODE
Sample ID: 18336-R1						
	MLMRP-002-10_ACAD-01	Matrix: Surface water		Sampled: 15-Nov-12 9:15		Received: 15-Nov-12
	Method: SM 2540 D	Batch ID: C-9154		Prepared: 19-Nov-12		Analyzed: 19-Nov-12
Total Suspended Solids	NA	13	0.5	1	mg/L	
	Method: SM 2540 C	Batch ID: C-9155		Prepared: 19-Nov-12		Analyzed: 19-Nov-12
Total Dissolved Solids	NA	1166	0.1	5	mg/L	
Sample ID: 18337-R1						
	MLMRP-002-10_ACAD-02	Matrix: Surface water		Sampled: 15-Nov-12 9:15		Received: 15-Nov-12
	Method: EPA 300.0	Batch ID: C-10001		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Nitrate-N by IC	NA	ND	0.01	0.05	mg/L	
Nitrite-N by IC	NA	ND	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Dissolved Phosphorus	NA	0.222	0.016	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-9152		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Total Orthophosphate as P	NA	0.28	0.01	0.02	mg/L	
Sample ID: 18339-R1						
	MLMRP-002-10_ACAD-04	Matrix: Surface water		Sampled: 15-Nov-12 9:15		Received: 15-Nov-12
	Method: SM 4500-NH ₃ D	Batch ID: C-10010		Prepared: 29-Nov-12		Analyzed: 29-Nov-12
Ammonia-N	NA	0.04	0.02	0.06	mg/L	J
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Phosphorus	NA	0.29	0.016	0.05	mg/L	
Sample ID: 18340-R1						
	MLMRP-002-30_VAND-05	Matrix: Surface water		Sampled: 15-Nov-12 11:20		Received: 15-Nov-12
	Method: SM 2540 D	Batch ID: C-9154		Prepared: 19-Nov-12		Analyzed: 19-Nov-12
Total Suspended Solids	NA	4.3	0.5	1	mg/L	
	Method: SM 2540 C	Batch ID: C-9155		Prepared: 19-Nov-12		Analyzed: 19-Nov-12
Total Dissolved Solids	NA	663	0.1	5	mg/L	
Sample ID: 18341-R1						
	MLMRP-002-30_VAND-06	Matrix: Surface water		Sampled: 15-Nov-12 11:20		Received: 15-Nov-12
	Method: EPA 300.0	Batch ID: C-10001		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Nitrate-N by IC	NA	0.32	0.01	0.05	mg/L	
Nitrite-N by IC	NA	0.1	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Dissolved Phosphorus	NA	0.376	0.016	0.05	mg/L	



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Conventionals

ANALYTICAL REPORT

ANALYTE	FRACTION	RESULT	MDL	RL	UNITS	QA CODE
	Method: SM 4500-P E	Batch ID: C-9152		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Total Orthophosphate as P	NA	0.35	0.01	0.02	mg/L	
Sample ID: 18343-R1	MLMRP-002-DUPREE-16	Matrix: Surface water		Sampled: 15-Nov-12 11:20		Received: 15-Nov-12
	Method: SM 4500-NH3 D	Batch ID: C-10010		Prepared: 29-Nov-12		Analyzed: 29-Nov-12
Ammonia-N	NA	0.09	0.02	0.06	mg/L	
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Phosphorus	NA	0.448	0.016	0.05	mg/L	
Sample ID: 18344-R1	MLMRP-002-30_VAND-08	Matrix: Surface water		Sampled: 15-Nov-12 11:20		Received: 15-Nov-12
	Method: SM 4500-NH3 D	Batch ID: C-10010		Prepared: 29-Nov-12		Analyzed: 29-Nov-12
Ammonia-N	NA	0.13	0.02	0.06	mg/L	
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Phosphorus	NA	0.455	0.016	0.05	mg/L	
Sample ID: 18345-R1	MLMRP-002-TAHOE-10	Matrix: Surface water		Sampled: 15-Nov-12 11:15		Received: 15-Nov-12
	Method: EPA 300.0	Batch ID: C-10001		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Nitrate-N by IC	NA	0.02	0.01	0.05	mg/L	J
Nitrite-N by IC	NA	ND	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Dissolved Phosphorus	NA	ND	0.016	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-9152		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Total Orthophosphate as P	NA	ND	0.01	0.02	mg/L	
Sample ID: 18347-R1	MLMRP-002-TAHOE-12	Matrix: Surface water		Sampled: 15-Nov-12 11:15		Received: 15-Nov-12
	Method: SM 4500-NH3 D	Batch ID: C-10010		Prepared: 29-Nov-12		Analyzed: 29-Nov-12
Ammonia-N	NA	ND	0.02	0.06	mg/L	
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Phosphorus	NA	ND	0.016	0.05	mg/L	
Sample ID: 18348-R1	MLMRP-002-DUPREE-13	Matrix: Surface water		Sampled: 15-Nov-12 11:20		Received: 15-Nov-12
	Method: SM 2540 D	Batch ID: C-9154		Prepared: 19-Nov-12		Analyzed: 19-Nov-12
Total Suspended Solids	NA	3	0.5	1	mg/L	
	Method: SM 2540 C	Batch ID: C-9155		Prepared: 19-Nov-12		Analyzed: 19-Nov-12



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Conventionals

ANALYTICAL REPORT

ANALYTE	FRACTION	RESULT	MDL	RL	UNITS	QA CODE
Total Dissolved Solids	NA	649	0.1	5	mg/L	
Sample ID: 18349-R1	MLMRP-002-DUPREE-14	Matrix: Surface water		Sampled: 15-Nov-12 11:20		Received: 15-Nov-12
	Method: EPA 300.0	Batch ID: C-10001		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Nitrate-N by IC	NA	0.28	0.01	0.05	mg/L	
Nitrite-N by IC	NA	0.1	0.01	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-10014		Prepared: 27-Nov-12		Analyzed: 30-Nov-12
Total Dissolved Phosphorus	NA	0.378	0.016	0.05	mg/L	
	Method: SM 4500-P E	Batch ID: C-9152		Prepared: 16-Nov-12		Analyzed: 16-Nov-12
Total Orthophosphate as P	NA	0.34	0.01	0.02	mg/L	

QUALITY CONTROL

REPORT

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Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	LIMITS	PRECISION %	LIMITS	QA CODE
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Ammonia-N

Method: SM 4500-NH₃ D

Fraction: NA

Prepared: 29-Nov-12

Analyzed: 29-Nov-12

18335-B1	QAQC Procedural Blank	C-10010	ND	0.02	0.06	mg/L						
18335-BS1	QAQC Procedural Blank	C-10010	0.24	0.02	0.06	mg/L	0.25	0	96	70 - 130%	PASS	
18335-BS2	QAQC Procedural Blank	C-10010	0.25	0.02	0.06	mg/L	0.25	0	100	70 - 130%	PASS	4 30 PASS
18343-MS1	MLMRP-002-DUPREE-1	C-10010	0.4	0.02	0.06	mg/L	0.25	0.09	124	70 - 130%	PASS	
18343-MS2	MLMRP-002-DUPREE-1	C-10010	0.41	0.02	0.06	mg/L	0.25	0.09	128	70 - 130%	PASS	3 30 PASS
18343-R2	MLMRP-002-DUPREE-1	C-10010	0.09	0.02	0.06	mg/L						0 30 PASS

Nitrate-N by IC

Method: EPA 300.0

Fraction: NA

Prepared: 16-Nov-12

Analyzed: 16-Nov-12

18335-B1	QAQC Procedural Blank	C-10001	ND	0.01	0.05	mg/L						
18335-BS1	QAQC Procedural Blank	C-10001	0.12	0.01	0.05	mg/L	0.11	0	109	70 - 130%	PASS	
18335-BS2	QAQC Procedural Blank	C-10001	0.12	0.01	0.05	mg/L	0.11	0	109	70 - 130%	PASS	0 30 PASS
18341-MS1	MLMRP-002-30_VAND-0	C-10001	0.42	0.01	0.05	mg/L	0.11	0.32	91	70 - 130%	PASS	
18341-MS2	MLMRP-002-30_VAND-0	C-10001	0.42	0.01	0.05	mg/L	0.11	0.32	91	70 - 130%	PASS	0 30 PASS
18341-R2	MLMRP-002-30_VAND-0	C-10001	0.31	0.01	0.05	mg/L						3 30 PASS

Nitrite-N by IC

Method: EPA 300.0

Fraction: NA

Prepared: 16-Nov-12

Analyzed: 16-Nov-12

18335-B1	QAQC Procedural Blank	C-10001	ND	0.01	0.05	mg/L						
18335-BS1	QAQC Procedural Blank	C-10001	0.17	0.01	0.05	mg/L	0.15	0	113	70 - 130%	PASS	
18335-BS2	QAQC Procedural Blank	C-10001	0.17	0.01	0.05	mg/L	0.15	0	113	70 - 130%	PASS	0 30 PASS
18341-MS1	MLMRP-002-30_VAND-0	C-10001	0.24	0.01	0.05	mg/L	0.15	0.1	93	70 - 130%	PASS	
18341-MS2	MLMRP-002-30_VAND-0	C-10001	0.24	0.01	0.05	mg/L	0.15	0.1	93	70 - 130%	PASS	0 30 PASS
18341-R2	MLMRP-002-30_VAND-0	C-10001	0.1	0.01	0.05	mg/L						0 30 PASS

Total Dissolved Phosphorus

Method: SM 4500-P E

Fraction: NA

Prepared: 27-Nov-12

Analyzed: 30-Nov-12

18335-B1	QAQC Procedural Blank	C-10014	ND	0.016	0.05	mg/L						
18335-BS1	QAQC Procedural Blank	C-10014	0.274	0.016	0.05	mg/L	0.3	0	91	70 - 130%	PASS	
18335-BS2	QAQC Procedural Blank	C-10014	0.285	0.016	0.05	mg/L	0.3	0	95	70 - 130%	PASS	4 30 PASS
18337-MS1	MLMRP-002-10_ACAD-0	C-10014	0.503	0.016	0.05	mg/L	0.3	0.222	94	70 - 130%	PASS	
18337-MS2	MLMRP-002-10_ACAD-0	C-10014	0.496	0.016	0.05	mg/L	0.3	0.222	91	70 - 130%	PASS	3 30 PASS
18337-R2	MLMRP-002-10_ACAD-0	C-10014	0.223	0.016	0.05	mg/L						0 30 PASS



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CA ELAP #2769

Conventionals

QUALITY CONTROL REPORT

SAMPLE ID	BATCH ID	RESULT	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	PRECISION %	QA CODE
								LIMITS	LIMITS	

Total Dissolved Solids

Method: SM 2540 C

Fraction: NA

Prepared: 19-Nov-12

Analyzed: 19-Nov-12

18335-B1	QAQC Procedural Blank	C-9155	ND	0.1	5	mg/L				
18335-BS1	QAQC Procedural Blank	C-9155	24580	0.1	5	mg/L	24959	0	98	70 - 130% PASS
18335-BS2	QAQC Procedural Blank	C-9155	69780	0.1	5	mg/L	69684	0	100	70 - 130% PASS

Total Orthophosphate as P

Method: SM 4500-P E

Fraction: NA

Prepared: 16-Nov-12

Analyzed: 16-Nov-12

18335-B1	QAQC Procedural Blank	C-9152	ND	0.01	0.02	mg/L				
18335-BS1	QAQC Procedural Blank	C-9152	0.54	0.01	0.02	mg/L	0.5	0	108	70 - 130% PASS
18335-BS2	QAQC Procedural Blank	C-9152	0.55	0.01	0.02	mg/L	0.5	0	110	70 - 130% PASS
18337-MS1	MLMRP-002-10_ACAD-0	C-9152	0.79	0.01	0.02	mg/L	0.5	0.28	102	70 - 130% PASS
18337-MS2	MLMRP-002-10_ACAD-0	C-9152	0.8	0.01	0.02	mg/L	0.5	0.28	104	70 - 130% PASS
18337-R2	MLMRP-002-10_ACAD-0	C-9152	0.28	0.01	0.02	mg/L				0 30 PASS

Total Phosphorus

Method: SM 4500-P E

Fraction: NA

Prepared: 27-Nov-12

Analyzed: 30-Nov-12

18335-B1	QAQC Procedural Blank	C-10014	ND	0.016	0.05	mg/L				
18335-BS1	QAQC Procedural Blank	C-10014	0.274	0.016	0.05	mg/L	0.3	0	91	70 - 130% PASS
18335-BS2	QAQC Procedural Blank	C-10014	0.285	0.016	0.05	mg/L	0.3	0	95	70 - 130% PASS
18339-MS1	MLMRP-002-10_ACAD-0	C-10014	0.586	0.016	0.05	mg/L	0.3	0.292	98	70 - 130% PASS
18339-MS2	MLMRP-002-10_ACAD-0	C-10014	0.572	0.016	0.05	mg/L	0.3	0.292	93	70 - 130% PASS
18339-R2	MLMRP-002-10_ACAD-0	C-10014	0.294	0.016	0.05	mg/L				1 30 PASS

Total Suspended Solids

Method: SM 2540 D

Fraction: NA

Prepared: 19-Nov-12

Analyzed: 19-Nov-12

18335-B1	QAQC Procedural Blank	C-9154	ND	0.5	1	mg/L				
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SUBCONTRACT

REPORT

PHYSICS

TERRA R AGA A AURA

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature



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29 November 2012

Misty Mercier
PHYSIS Environmental Laboratories, Inc.
1904 E. Wright Circle
Anaheim, CA 92806
RE: 1206006-002

Enclosed are the results of analyses for samples received by the laboratory on 11/16/12 16:03. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Daniel Chavez
Project Manager



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PHYSIS Environmental Laboratories, Inc.
1904 E. Wright Circle
Anaheim CA, 92806

Project: 1206006-002
Project Number: 1206006
Project Manager: Misty Mercier

Reported:
11/29/12 15:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MLMRP-002-10_ACAD-03	T122136-01	Water	11/15/12 09:15	11/16/12 16:03
MLMRP-002-30_VAND-07	T122136-02	Water	11/15/12 11:20	11/16/12 16:03
MLMRP-002-30_TAHOE-11	T122136-03	Water	11/15/12 11:15	11/16/12 16:03
MLMRP-002-30_DUPREE-15	T122136-04	Water	11/15/12 11:20	11/16/12 16:03

SunStar Laboratories, Inc.

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PHYSIS Environmental Laboratories, Inc. 1904 E. Wright Circle Anaheim CA, 92806	Project: 1206006-002 Project Number: 1206006 Project Manager: Misty Mercier	Reported: 11/29/12 15:30
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MLMRP-002-10_ACAD-03
T122136-01(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Total Kjeldahl Nitrogen	0.430	0.0250	0.100	mg/l	1	2111607	11/20/12	11/28/12	EPA 351.2	
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PHYSIS Environmental Laboratories, Inc. 1904 E. Wright Circle Anaheim CA, 92806	Project: 1206006-002 Project Number: 1206006 Project Manager: Misty Mercier	Reported: 11/29/12 15:30
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MLMRP-002-30_VAND-07
T122136-02(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Total Kjeldahl Nitrogen	1.43	0.0250	0.100	mg/l	1	2111607	11/20/12	11/28/12	EPA 351.2	
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SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



25712 Commercentre Drive
 Lake Forest, California 92630
 949.297.5020 Phone
 949.297.5027 Fax

PHYSIS Environmental Laboratories, Inc. 1904 E. Wright Circle Anaheim CA, 92806	Project: 1206006-002 Project Number: 1206006 Project Manager: Misty Mercier	Reported: 11/29/12 15:30
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**MLMRP-002-30_TAHOE-11
 T122136-03(Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Total Kjeldahl Nitrogen	ND	0.0250	0.100	mg/l	1	2111607	11/20/12	11/28/12	EPA 351.2	
-------------------------	----	--------	-------	------	---	---------	----------	----------	-----------	--

SunStar Laboratories, Inc.

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PHYSIS Environmental Laboratories, Inc. 1904 E. Wright Circle Anaheim CA, 92806	Project: 1206006-002 Project Number: 1206006 Project Manager: Misty Mercier	Reported: 11/29/12 15:30
---	---	------------------------------------

MLMRP-002-30_DUPREE-15
T122136-04(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods

Total Kjeldahl Nitrogen	1.37	0.0250	0.100	mg/l	1	2111607	11/20/12	11/28/12	EPA 351.2	
--------------------------------	-------------	--------	-------	------	---	---------	----------	----------	-----------	--

SunStar Laboratories, Inc.

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PHYSIS Environmental Laboratories, Inc.
 1904 E. Wright Circle
 Anaheim CA, 92806

Project: 1206006-002
 Project Number: 1206006
 Project Manager: Misty Mercier

Reported:
 11/29/12 15:30

Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2111607 - General Preparation											
Blank (2111607-BLK1)						Prepared: 11/16/12 Analyzed: 11/28/12					
Total Kjeldahl Nitrogen	ND	0.0250	0.100	mg/l							
LCS (2111607-BS1)						Prepared: 11/16/12 Analyzed: 11/28/12					
Total Kjeldahl Nitrogen	0.920	0.0250	0.100	mg/l	1.00		92.0	80-120			
Matrix Spike (2111607-MS1)						Source: T122119-01 Prepared: 11/16/12 Analyzed: 11/28/12					
Total Kjeldahl Nitrogen	1.20	0.0250	0.100	mg/l	1.00	0.384	81.8	75-125			
Matrix Spike Dup (2111607-MSD1)						Source: T122119-01 Prepared: 11/16/12 Analyzed: 11/28/12					
Total Kjeldahl Nitrogen	1.17	0.0250	0.100	mg/l	1.00	0.384	78.9	75-125	2.44	20	

SunStar Laboratories, Inc.

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PHYSIS Environmental Laboratories, Inc.
1904 E. Wright Circle
Anaheim CA, 92806

Project: 1206006-002
Project Number: 1206006
Project Manager: Misty Mercier

Reported:
11/29/12 15:30

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN OF CUSTODY

SEND TO: SunStar

T122136

COMPANY NAME: **Physis Environmental Laboratories, Inc.** EMAIL: **sc@physislabs.com** PROJECT NAME / NUMBER: **1206006-002** COC PAGE: **1** of **2**

PROJECT MANAGER: **Misty Mercier** FAX: **714 602-5321** PO #: **1206006** PHYSIS SOS #: **1206006** TYPE OF ICE USED: WET BLUE DRY

COMPANY ADDRESS: **1904 E. Wright Circle, Anaheim, CA 92806** PHONE: **714 602-5320** OFFICE: **714 335-5918** CELL: **714 335-5918** SHIPPED VIA: FEDEX UPS USPS Client Physis other

TURNAROUND TIME: STANDARD RUSH BUSINESS DAYS: SWAMP EDD other

REP ORT FORMAT: PDF/EDD SPECIAL INSTRUCTIONS: **please report down the MDL**

PHYSIS MATRIX CODES: **SWW = seawater FW = freshwater RW = rainwater WW = wastewater DW = drinking water S = sediment T = tissue E = extract Q = other (specify)**

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLE date	SAMPLE time	physis matrix code	to #	of #	REQUESTED ANALYSES
1	MLMRP-002-10_ACAD-03	11/15/12	9:15	FW	1	X	TKN
2	MLMRP-002-30_VAND-07	11/15/12	11:20	FW	1	X	
3	MLMRP-002-TAHOE-11	11/15/12	11:15	FW	1	X	
4	MLMRP-002-DUPREE-15	11/15/12	11:20	FW	1	X	
5							
6							
7							
8							
9							
10							

print: **E. Varki** signature: **[Signature]** company: **PHYSIS** date & time: **11/12/12 1603** print: **Zan Mostek** signature: **[Signature]** company: **SunStar Lab, Inc** date & time: **11/12/12**

SAMPLE RECEIVING REVIEW SHEET

BATCH # T122136

Client Name: Physis

Project: 1206006-002

Received by: Dan M

Date/Time Received: 11/16/12 1603

Delivered by: Client SunStar Courier GSO FedEx Other _____

Total number of coolers received 1 Temp criteria = 6°C > 0°C (no frozen containers)

Temperature: cooler #1 4.4 °C +/- the CF (-0.2°C) = 4.2 °C corrected temperature

cooler #2 _____ °C +/- the CF (-0.2°C) = _____ °C corrected temperature

cooler #3 _____ °C +/- the CF (-0.2°C) = _____ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling. Yes No* N/A

Custody Seals Intact on Cooler/Sample Yes No* N/A

Sample Containers Intact Yes No*

Sample labels match COC ID's Yes No*

Total number of containers received match COC Yes No*

Proper containers received for analyses requested on COC Yes No*

Proper preservative indicated on COC/containers for analyses requested Yes No* N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. Yes No*

* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date DM 11/16/12

Comments:

**CHAIN OF
CUSTODY**

TERRA FUTURE ENERGY SOLUTIONS AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Larry Walker Associates

707 Fourth Street, Suite 200 Davis, CA 95616 530-753-6400 530-753-7030 Fax

1206006-002

CHAIN-OF-CUSTODY RECORD

Date: 11/15/2012

Lab ID:

Destination Lab: Physis Environmental Laboratories, I Misty Mercier Address: 1904 East Wright Circle Anaheim, CA 92806 Phone: (714) 602-5320 x202 Fax: (714) 602-5321	 <p>LARRY WALKER ASSOCIATES</p>	Total Suspended Solids (SM 2540D) Total Dissolved Solids (SM 2540C) Total Kjeldahl Nitrogen (EPA 351.1) Total Orthophosphate as P (SM 450-P E or F) Dissolved Phosphorus (SM 450-P E or F) Total Nitrogen (Calc) Nitrite-N (EPA 300.0) Nitrate-N (EPA 300.0) Ammonia-N (EPA 350.1) Total Phosphate (SM 4500-P E or F)
10 Business day TAT		
Project: Machado Lake Nutrient TMDL Sampling		

Client Sample Id	Sample Date	Sample Time	Sample Matrix	Container			Ammonia-N (EPA 350.1)	Total Phosphate (SM 4500-P E or F)	Nitrate-N (EPA 300.0)	Nitrite-N (EPA 300.0)	Total Nitrogen (Calc)	Dissolved Phosphorus (SM 450-P E or F)	Total Orthophosphate as P (SM 450-P E or F)	Total Kjeldahl Nitrogen (EPA 351.1)	Total Dissolved Solids (SM 2540C)	Total Suspended Solids (SM 2540D)	Notes
				#	Type	Pres.											
MLMRP-002-10_ACAD-01	11/15	0915	Surface Water	1	1-Liter PE	None									X	X	
MLMRP-002-10_ACAD-02	11/15	0915	Surface Water	1	250-mL PE	None		X	X	X	X	X					
MLMRP-002-10_ACAD-03	11/15	0915	Surface Water	1	250-mL PE	H2SO4								X			
MLMRP-002-10_ACAD-04	11/15	0915	Surface Water	1	500-mL Amber	H2SO4	X	X									
MLMRP-002-30_VAND-05	11/15	1120	Surface Water	2	1-Liter PE	None									X	X	MS/MSD
MLMRP-002-30_VAND-06	11/15	1120	Surface Water	2	250-mL PE	None		X	X	X	X	X					MS/MSD
MLMRP-002-30_VAND-07	11/15	1120	Surface Water	2	250-mL PE	H2SO4								X			MS/MSD

Sender Comments: Please PDF signed COC's upon completion of sample login to Greg Reide at greg@lwa.com PLEASE CALL IF THERE ANY QUESTIONS	Relinquished By (1): Signature: <i>Gregory E. Reide</i> Print: GREGORY E. REIDE Organization: LWA, Inc. Date: 11/15/2012 Time: 2:34 pm	Relinquished By (2): Signature: _____ Print: _____ Organization: _____ Date: _____ Time: _____
Laboratory Comments:	Received By (1): Signature: <i>Misty Mercier</i> Print: MISTY D. MERCIER Organization: PHYSIS Date: 11/15/12 Time: 2:34 pm	Received By (2): Signature: _____ Print: _____ Organization: _____ Date: _____ Time: _____

Larry Walker Associates

707 Fourth Street, Suite 200 Davis, CA 95616 530-753-6400 530-753-7030 Fax

CHAIN-OF-CUSTODY RECORD

Date: *11/15/2012*

Lab ID:

Destination Lab: Physis Environmental Laboratories, I Misty Mercier Address: 1904 East Wright Circle Anaheim, CA 92806 Phone: (714) 602-5320 x202 Fax: (714) 602-5321			 <p>LARRY WALKER ASSOCIATES</p>			Total Suspended Solids (SM 2540D)	Total Dissolved Solids (SM 2540C)	Total Kjeldahl Nitrogen (EPA 351.1)	Total Orthophosphate as P (SM 450-P E or F)	Dissolved Phosphorus (SM 450-P E or F)	Total Nitrogen (Calc)	Nitrite-N (EPA 300.0)	Nitrate-N (EPA 300.0)	Total Phosphate (SM 4500-P E or F)	Ammonia-N (EPA 350.1)	Notes	
Sampled By: <i>BRYANT A., GREG R</i>																	10 Business day TAT! 
LWA Contact: Mitch Mysliwicz																	
Project: Machado Lake Nutrient TMDL Sampling																	
<i>2012</i>																	
Client Sample Id	Sample Date	Sample Time	Sample Matrix	Container			X	X									
				#	Type	Pres.											
MLMRP-002-DUPREE-16	<i>11/15</i>	<i>1120</i>	Surface Water	1	500-mL Amber	H2SO4											

Sender Comments: Please PDF signed COC's upon completion of sample login to Greg Reide at gregr@lwa.com PLEASE CALL IF THERE ANY QUESTIONS	Relinquished By (1): Signature: <i>Gregory E. Reide</i> Print: GREGORY E. REIDE Organization: LWA, Inc. Date: <i>11/15/2012</i> Time: <i>2:34 pm</i>	Relinquished By (2): Date: _____ Time: _____
	Received By (1): Signature: <i>Machado</i> Print: Machado, B... Organization: Physis Date: <i>11/15/12</i> Time: <i>2:35 pm</i>	Received By (2): Date: _____ Time: _____
Laboratory Comments:	Date: _____ Time: _____	Date: _____ Time: _____

Larry Walker Associates

707 Fourth Street, Suite 200 Davis, CA 95616 530-753-6400 530-753-7030 Fax

CHAIN-OF-CUSTODY RECORD

Date: 11/15/2012

Lab ID:

Destination Lab: Physis Environmental Laboratories, I
Misty Mercier
Address: 1904 East Wright Circle
Anaheim, CA 92806
Phone: (714) 602-5320 x202
Fax: (714) 602-5321

LARRY
WALKER



ASSOCIATES

Sampled By: *BRYANT A. GREGG*
LWA Contact: Mitch Mysliwicz

Project: Machado Lake Nutrient
TMDL Sampling

10 Business day TAT

2012

Client Sample Id	Sample Date	Sample Time	Sample Matrix	Container			Ammonia-N (EPA 350.1)	Total Phosphate (SM 4500-P E or F)	Nitrate-N (EPA 300.0)	Nitrite-N (EPA 300.0)	Total Nitrogen (Calc)	Dissolved Phosphorus (SM 450-P E or F)	Total Orthophosphate as P (SM 450-P E or F)	Total Kjeldahl Nitrogen (EPA 351.1)	Total Dissolved Solids (SM 2540C)	Total Suspended Solids (SM 2540D)	Notes
				#	Type	Pres.											
MLMRP-002-30_VAND-08	11/15	1120	Surface Water	2	500-mL Amber	H2SO4	X	X									MS/MSD
MLMRP-002-TAHOE-10	11/15	1115	Surface Water	1	250-mL PE	None			X	X	X	X	X				
MLMRP-002-TAHOE-11	11/15	1115	Surface Water	1	250-mL PE	H2SO4								X			
MLMRP-002-TAHOE-12	11/15	1115	Surface Water	1	500-mL Amber	H2SO4	X	X									
MLMRP-002-DUPREE-13	11/15	1120	Surface Water	1	1-Liter PE	None								X	X		
MLMRP-002-DUPREE-14	11/15	1120	Surface Water	1	250-mL PE	None			X	X	X	X	X				
MLMRP-002-DUPREE-15	11/15	1120	Surface Water	1	250-mL PE	H2SO4								X			

Sender Comments:

Please PDF signed COC's upon completion of sample login to Greg Reide at greg@lwa.com

PLEASE CALL IF THERE ANY QUESTIONS

Signature: *Gregory E. Reide*
Print: GREGORY E. REIDE
Organization: LWA, Inc.
Date: 11/15/2012 Time: 2:34

Relinquished By (1):

Relinquished By (2):

Laboratory Comments:

Signature: *Misty Mercier*
Print: MISTY D. MERCIER
Organization: Physis
Date: 11/15/12 Time: 2:34 pm

Received By (1):

Received By (2):

Misty Mercier

From: Greg Reide <GregR@lwa.com>
Sent: Monday, November 26, 2012 3:49 PM
To: Misty Mercier
Cc: Bryant Alvarado; Mark Baker
Subject: RE: Machado Lake Dry Event, Dupree, etc.

Hi Misty,

Either sample containers gets either label. The three containers are duplicates of each other (two VAND-05 and one DUPREE-13). They were filled together via an intermediate gallon baggy. Assign either of the two labels from the double-labeled 1-L container to the 1-L without a label, and report as you normally would.

I now recall all the MLMRP-002-30_VAND samples are MS/MSD. *Is it feasible to perform an MS/MSD on a TSS/TDS sample? Is that spikable?* If not, let me know and I will have the paperwork changed for our next event.

Also, let me know, [via email](#), if there's anything else you need?

Greg

Larry Walker Associates
Ph: 805-585-1835 Fax: 805-585-1840

 Please consider the environment in all your endeavors.

From: Misty Mercier [<mailto:MistyMercier@physislabs.com>]
Sent: Monday, November 26, 2012 2:38 PM
To: Greg Reide
Cc: Bryant Alvarado; Mark Baker
Subject: RE: Machado Lake Dry Event, Dupree, etc.

Great, here you go

From: Greg Reide [<mailto:GregR@lwa.com>]
Sent: Monday, November 26, 2012 2:32 PM
To: Misty Mercier
Cc: Bryant Alvarado; Mark Baker
Subject: RE: Machado Lake Dry Event, Dupree, etc.

Misty,
Thanks! Could you email me a copy of the COC? I think we can resolve this fairly easily.

Greg

Larry Walker Associates
Ph: 805-585-1835 Fax: 805-585-1840

 Please consider the environment in all your endeavors.

