

**APPENDIX I.**  
**Calibration Logs**

**CATEGORY 1 M&TE INVENTORY**

IDENTIFIER	ITEM DESCRIPTION	LAST RECALL	NEXT RECALL	DATE
095-517599	MULTIRAE Plus PGM50-5P	04/20/09	05/20/09	04/21/09
11854	Sample Pro Bladder Pump	04/20/09	NA	04/21/09
14067	MP-10-2513 MP-10 Controller	04/20/09	NA	04/21/09
10504	MP-40 AIR COMPRESSOR	04/20/09	NA	04/21/09
501026	HORIBA U-22	04/20/09	05/20/09	04/21/09
52545	SOLINST 300FT WATER LEVEL INDICATOR A01308	04/20/09	NA	04/21/09
095-517000	MULTIRAE Plus - PGM50-5P	04/21/09	05/21/09	04/22/09
11910	MP-15 Controller	04/21/09	NA	04/22/09
801008	HORIBA U-22	04/22/09	05/22/09	04/23/09
<i>Am</i>				
<i>04/24/09</i>				

PINE RETURN# ARA3230

04/21/09  
Date

*Amanda Winter*  
Project M&TE Coordinator

**CATEGORY 1 M&TE CALIBRATION LOG**

IDENTIFIER	ITEM DESCRIPTION	CALIBRATION MEASUREMENT			BACKGROUND CHECK	RESPONSE CHECK	NAME	DATE	
		PRE	ADJUSTMENT	POST					
095-517599	MULTIRAE Plus PID/61	O <sub>2</sub>	20.9	CALIBRATION	20.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	JMT	04/21/09
		LEL	0		0-Malfunctioning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		CO	0		50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		H <sub>2</sub> S	0		25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		PID	0.0	CAL CHECK	10.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
501026	HORIBA U-22	pH	2.22	Autocal	3.99	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	JMT	04/21/09
		SpC	4.26		4.56	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Turb	86.3		1.7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		DO	10.79		12.17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Temp	8.49	NA	8.49	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<del>095-517599</del>	MULTIRAE Plus	O <sub>2</sub>	20.9	CAL CHECK	20.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	JMT	04/22/09
095-517060		LEL	0		49	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		CO	0		52	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		H <sub>2</sub> S	0		24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		PID	0.0		102	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
501026	HORIBA U-22	pH	3.50	Autocal	3.99	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EC	04/22/09
		SpC	4.27		4.54	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Turb	0.0		0.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		DO	12.11		11.51	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		temp	9.65	NA	9.62	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
501026	HORIBA U-22	pH	9.89	DI WATER	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	JMT	04/22/09
	(post 004 sampling)	pH	6.54	Autocal	4.11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		pH	1.95	Autocal	NA - won't calibrate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		pH	3.91	DI water	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	PH sensor malfunctioning - pH readings not "accurate" versus standard - remove from service								
095-517599	MULTIRAE Plus	O <sub>2</sub>	20.9	CAL CHECK	20.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	JMT	04/23/09
		LEL	0		0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		CO	0		49	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		H <sub>2</sub> S	0		23	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		PID	0.0		98.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
801008	HORIBA U-22	pH	3.90	Autocal	3.99	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EC	04/23/09
		SpC	4.10		4.53	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Turb	143.0		0.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	Temp 11.20	DO	9.74		11.00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
801008	HORIBA U-22	pH	4.28	Autocal	3.98	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EC	04/24/09
		SpC	4.58		4.51	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Turb	0.0		0.7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	Temp: 14.09	DO	11.19		10.21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

**M&TE USAGE LOG**

IDENTIFIER	NAME	DATE		PROJECT	CONDITION RETURNED
		OUT	IN		
095-517599	MULTIRAE Plus	04/21/09	04/23/09	1 <sup>st</sup> Q 2009 ↓	Lab Malfunctioning
11854	Sample Pro Bladder Pump	04/21/09	04/24/09		GOOD
14067	MP-10 Controller	04/21/09	04/24/09		GOOD
10564	MP-40 Controller	04/21/09	04/24/09		GOOD (cold weather issues)
501026	HORIBA U-22	04/21/09	04/22/09		pH sensor malfunctioning
52545	Solinst 300' water level	04/21/09	04/24/09		GOOD
11910	MP-15 Controller	04/22/09	04/24/09		GOOD
801008	HORIBA U-22	04/23/09	04/24/09	GOOD	
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CATEGORY 1

CALIBRATION STANDARDS LOG

PROJECT NAME:		DELIVERY ORDER NO:				
INCLUSIVE DATES FOR CLIBRATION MATERILA USAGE	INSTRUMENT DESCRIPTION	CALIBRATION MATERIAL *	Psi/BOTTLE	NIST # LOT # AND MANUFACTURER	PERSON (INITIALS)	
Start: 04/21/09 Finish: 04/24/09	MULTIRAE PLUS	25ppmH <sub>2</sub> S, 50ppmCO, 50ppm	500psi.g/29L	Spec Air Lot # 160378	AMT	
Start: 04/21/09 Finish: 04/24/09	MULTIRAE PLUS	100ppm Isobutylene	240psi.g/17L	Instruments Specialty Gases 08-3557	AMT	
Start: 04/21/09 Finish: 04/24/09	HOBIBA U-22	Auxocal Solution	250ml bottle	Pure Environmental U777	AMT	
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*04/24/09*

**CATEGORY 1 M&TE INVENTORY**

IDENTIFIER	ITEM DESCRIPTION	LAST RECALL	NEXT RECALL	DATE
2012031	V-22 xD probe	07/13/09	08/13/09	07/14/09
249020	V-2009 Probe Controller Eve # 15615			
43850	Solinst 101 - 300' water level meter	↓	↓	↓
250ECU5618	Solinst Pump Control Unit - Model 460 w/ Regulator	↓	↓	↓
15130	Bladder Pump 1.75" x 3.6"	↓	↓	↓
<p><i>SMI 07/20/09</i></p>				

07/20/09  
Date

Amanda Trenton  
Project M&TE Coordinator



### M&TE USAGE LOG

IDENTIFIER	NAME	DATE		PROJECT	CONDITION RETURNED
		OUT	IN		
2012031 209020 43850	3 HORIBA U-22 Solinst 101 - 300' Water level meter	07/14/09	07/16/09	SCF 2 <sup>nd</sup> QWS	GOOD
250ECU5618 15130 (ees)	Solinst Bladder Pump Controller QED 1.75" x 36" Bladder Pump	↓	↓	↓	↓
<del>07/20/09</del>					



**CATEGORY 1**

**CALIBRATION STANDARDS LOG**

PROJECT NAME:			DELIVERY ORDER NO:			
INCLUSIVE DATES FOR CLIBRATION MATERILA USAGE	INSTRUMENT DESCRIPTION	CALIBRATION MATERIAL *	Psi/BOTTLE	NIST # LOT # AND MANUFACTURER	PERSON (INITIALS)	
Start: <u>7/14/09</u> Finish: <u>          </u>	<u>HORIBA AUTO CAL SOL.</u>	<u>pH 4.00   0.010   0.025/cm</u>	<u>500 mL</u>	<u>Lot # 6071 PART # 35164</u>	<u>EC</u>	
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02/2010

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07/20/09

### CATEGORY 1 M&TE INVENTORY

IDENTIFIER	ITEM DESCRIPTION	LAST RECALL	NEXT RECALL	DATE
16213 <sup>(ES)</sup> / 250 ECU 5018	Solinist 466 Pump Control Unit	10/09/09	10/09/10	10/12/09
15130 (ES)	QED 1.75" x 36" Bladder Pump	10/09/09	10/09/10	10/12/09
82121 (ES) / T203028	HORIBA U-22 + Flow Cell	10/09/09	10/09/10	10/12/09
15480	300' water Level Indicator; Heron Diver	10/09/09	10/09/10	10/12/09
<i>AMT</i>				

10/12/09  
Date

Amanda Trenton  
Project M&TE Coordinator

**CATEGORY 1 M&TE CALIBRATION LOG**

IDENTIFIER	ITEM DESCRIPTION	CALIBRATION MEASUREMENT			BACKGROUND CHECK	RESPONSE CHECK	NAME	DATE	
		PRE	ADJUSTMENT	POST					
82121	HORIBA U-22	pH	3.87	Auto CAL	3.95	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	H. MILLER	10/12/09
		COND	0.454		0.452	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		TURB	-0.1		-0.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		DO	10.21		11.05	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		TEMP	13.1		11.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		SAL	0.2		0.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		TDS	2.0		2.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
82121	HORIBA U-22	ORPs	3.25		3.07	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	H. MILLER	10/13/09
		pH	4.03	Auto CAL	3.99	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		COND	0.445		0.450	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		TURB	0.0		2.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		DO	10.48		9.81	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		TEMP	15.3		15.3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		SAL	0.2		0.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
82121	HORIBA U-22	TDS	2.9		2.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	HM	10/14/09
		ORPs	276		299	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		pH	4.23	Autocal	3.97	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		COND	0.441		0.454	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		TURB	-10.0		-5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		DO	11.53		11.70	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		TEMP	10.5		10.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
SAL	0.2		0.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
TDS	2.8		2.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
ORP	290		289	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				

M&TE USAGE LOG

IDENTIFIER	NAME	DATE		PROJECT	CONDITION RETURNED
		OUT	IN		
16213	Solinst 466 Pump Control Unit	10/12/09	10/14/09	SCF	GOOD
15130	Gen Bladder Pump	10/12/09	10/14/09	SCF	FITTINGS STRIPPED - GOOD
82121	HORIBA U-22	10/12/09	10/14/09	SCF	GOOD
15480	HARON WATER LEVEL INDICATOR	10/12/09	10/14/09	SCF	GOOD

**CATEGORY 1**

**CALIBRATION STANDARDS LOG**

PROJECT NAME:			DELIVERY ORDER NO:		
INCLUSIVE DATES FOR CLIBRATION MATERILA USAGE	INSTRUMENT DESCRIPTION	CALIBRATION MATERIAL *	Psi/BOTTLE	NIST # LOT # AND MANUFACTURER	PERSON (INITIALS)
Start: 7/14/09 Finish: —	HDR10A U-22	Autocal pH4.0/5.0/4.99mV/cm Turb 0.0/5.0	500mL	lot# 0871; EES Autocal	AMT
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Expires 02/2010

### CATEGORY 1 M&TE INVENTORY

IDENTIFIER	ITEM DESCRIPTION	LAST RECALL	NEXT RECALL	DATE
<del>70160008 (PINE ID 1250)</del>	<del>HORIBA U-22</del>	<del>1/14/2010</del>	<del>02/14/2010</del>	<del>01/18/10</del>
48721	Solinst 300" WATER LEVEL Indicator	1/14/2010	02/14/2010	01/18/10
14213	Solinst 416 Pump Control Unit	1/14/2010	02/14/2010	01/18/10
15130	QED 1.75" x 3.4" Bladder Pump	1/14/2010	02/14/2010	01/18/10
<i>dm</i>				

01/20/10  
Date

Amanda Meritt  
Project M&TE Coordinator

### CATEGORY 1 M&TE CALIBRATION LOG

IDENTIFIER	ITEM DESCRIPTION		CALIBRATION MEASUREMENT			BACKGROUND CHECK	RESPONSE CHECK	NAME	DATE
			PRE	ADJUSTMENT	POST				
<del>12509</del> 12509	Horiba U-22	pH	4.21	4.00	4.00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Jackie Gelsos	11/18/2010
		Turb	0.0	0.0	0.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Cond	480 S/m	4.91	451	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Turb				<input type="checkbox"/>	<input type="checkbox"/>		
12509	Horiba U-22	pH	3.82	4.00	4.00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	JG	11/19/2010
		Cond	4.40	4.49	4.52	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Turb	0.4	0.0	0.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
12509	Horiba U-22	pH	3.79	4.00	4.00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	JG	11/20/2010
		Cond	4.53	4.49	4.50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Turb	0.0	0.0	0.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
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CATEGORY 1

CALIBRATION STANDARDS LOG

PROJECT NAME:		DELIVERY ORDER NO:			
INCLUSIVE DATES FOR CLIBRATION MATERILA USAGE	INSTRUMENT DESCRIPTION	CALIBRATION MATERIAL *	Psi/BOTTLE	NIST # LOT # AND MANUFACTURER	PERSON (INITIALS)
Start: <del>01/19/10</del> Finish: <del>01/20/10</del>	<del>HORABA-U22</del>	<del>AUTO CAL</del>	<del>1 PINT</del>	<del>7538 PINE ENV</del>	<del>EC</del>
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Revision 0, 11/22/96, QAAP 12.1