SWIMS

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Lake Information

Lake Name: Vincent Lake County: Polk

Data Collectors

Primary Data Collector Email Phone No. ( ) -

Additional Data Collector(s)

Reference Mark and Staff Gauge Information

Reference Mark #1 (RM1)
Latitude: 45°32'12.212" Longitude: 92°21'34.317" Reference Mark Type:
Mean Sea Level Yes ☒ No ☐ Elevation: 1196.21 Photograph ☐
Location Description: RM 1 is the North Westerly Corner of the Westerly Concrete Pad Patio on lake side of house.

Reference Mark #2 (RM2)
Latitude: 45°32'12.359" Longitude: 92°21'34.156" Reference Mark Type:
Mean Sea Level Yes ☒ No ☐ Elevation: 1195.85 Photograph ☐
Location Description: RM 2 is the Northwesterly Corner of the Easterly Concrete Pad Patio on Lake side of house.

Reference Mark #3 (RM3)
Latitude: 45°32'13.016" Longitude: 92°21'34.947" Reference Mark Type:
Mean Sea Level Yes ☒ No ☐ Elevation: 1191.06 Photograph ☐
Location Description: RM 3 is the Highest Point of a large rock near the Office on the North easterly side of Yard

Staff Gauge
Latitude: 45°32'13.014" Longitude: 92°21'35.718" Mean Sea Level Yes ☒ No ☐ Elevation: 1188.10' Photograph ☐
Location Description: Staff Gage is located on Northeasterly side of Dock near the deepest end of Dock

Date: 6/28/2019 Time: 11:42 AM/PM Check one: Install ☒ Midseason ☐ Removal ☐

Survey Stage 1 - Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1196.21			
Back sight 1 (BS1)	+ 1.72			
Height of Instrument (HI1)	1197.93	- Staff Gauge	9.83	= 1188.10
	HI1	- Ref Mark 2	2.08	= 1195.85
	HI1	- Ref Mark 3	6.87	= 1191.06

Survey Equations:
$HI1 = GE_{RM1} + BS1$
$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1188.10			
Back sight 2 (BS2)	+ 9.65			
Height of Instrument (HI2)	1197.75	- Ref Mark 1	1.54	= 1196.21
	HI2	- Ref Mark 2	1.90	= 1195.85
	HI2	- Ref Mark 3	6.69	= 1191.06

Survey Equations:
$HI2 = CE_{SG1} + BS2$
$CE2 = HI2 - FS2$

Quality Assurance Checks:

Reference Mark 1:
GE = CE2

BS1 1.72 FS1 9.83
BS2 + 9.65 FS2 + 1.54
11.37 = 11.37

QA Equations:
$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
$GE_{RM1} = CE2_{RM1}$

*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

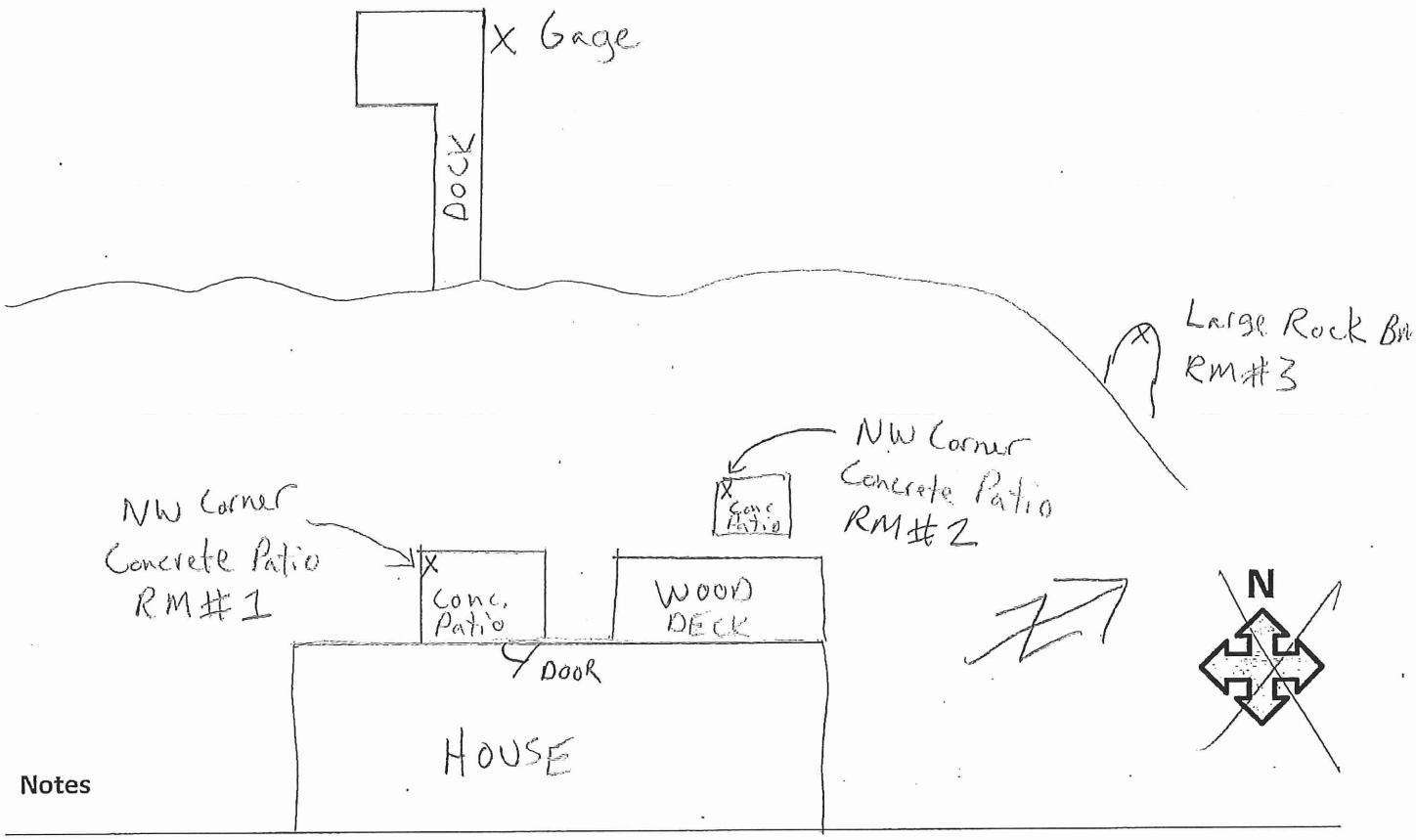
Lake Level Reading: 1.41 ft Water Elevation – 1189.48'

Calculated Elevation 1: 1188.07

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Site Diagram (including Staff Gauge and Reference Marks)



Notes

Gage and Reference Marks are at residence: 957 Vincent Lake Lane

Data Management

Survey Data uploaded to SWIMS?	Yes ☐ No ☐	Date: _____	Name: _____
Photographs uploaded to SWIMS?	Yes ☐ No ☐	Date: _____	Name: _____
Data Sheet scan uploaded to SWIMS?	Yes ☐ No ☐	Date: _____	Name: _____

Equipment Maintenance

Replace bolts/screws on staff gauge?	Yes ☐ No ☐	Date: _____	Name: _____
Replace gauge plate on staff gauge?	Yes ☐ No ☐	Date: _____	Name: _____
Replace post or wooden board?	Yes ☐ No ☐	Date: _____	Name: _____

Swims C2 3/10/2020

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Lake Information

Lake Name: VINCENT LAKE County: POLK

Data Collectors

Primary Data Collector Email Phone No. ( ) -

Additional Data Collector(s)

Reference Mark and Staff Gauge Information

Reference Mark #1 (RM1) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: _____ Photograph ☐

Location Description: _____

Reference Mark #2 (RM2) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: _____ Photograph ☐

Location Description: _____

Reference Mark #3 (RM3) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: _____ Photograph ☐

Location Description: _____

Staff Gauge

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☐ No ☐ Elevation: _____ Photograph ☐

Location Description: _____

Date: 9-19-2019 Time: 9:13 AM/PM Check one: Install ☐ Midseason ☐ Removal ☑

Survey Stage 1 - Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1196.21			
Back sight 1 (BS1)	+ 1.20			
Height of Instrument (HI1)	1197.41	- Staff Gauge	9.31	= 1188.10
	HI1	- Ref Mark 2	1.56	= 1195.85
	HI1	- Ref Mark 3	6.35	= 1191.06

Survey Equations:

$HI1 = GE_{RM1} + BS1$

$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1188.10 ←			
Back sight 2 (BS2)	+ 9.03			
Height of Instrument (HI2)	1197.13	- Ref Mark 1	0.93	= 1196.20
	HI2	- Ref Mark 2	1.29	= 1195.84
	HI2	- Ref Mark 3	6.09	= 1191.04

Survey Equations:

$HI2 = CE_{SG1} + BS2$

$CE2 = HI2 - FS2$

Quality Assurance Checks:

Reference Mark 1: GE = CE2

BS1 1.20 FS1 9.31

BS2 + 9.03 FS2 + 0.93

10.23 = 10.24

QA Equations:

$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$

$GE_{RM1} = CE2_{RM1}$

*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 1.52 ft

WATER 7.55

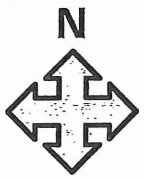
1189.58

Calculated Elevation 1: 1188.06

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Site Diagram (including Staff Gauge and Reference Marks)



Notes

Data Management

Survey Data uploaded to SWIMS?	Yes ☐ No ☐	Date: _____	Name: _____
Photographs uploaded to SWIMS?	Yes ☐ No ☐	Date: _____	Name: _____
Data Sheet scan uploaded to SWIMS?	Yes ☐ No ☐	Date: _____	Name: _____

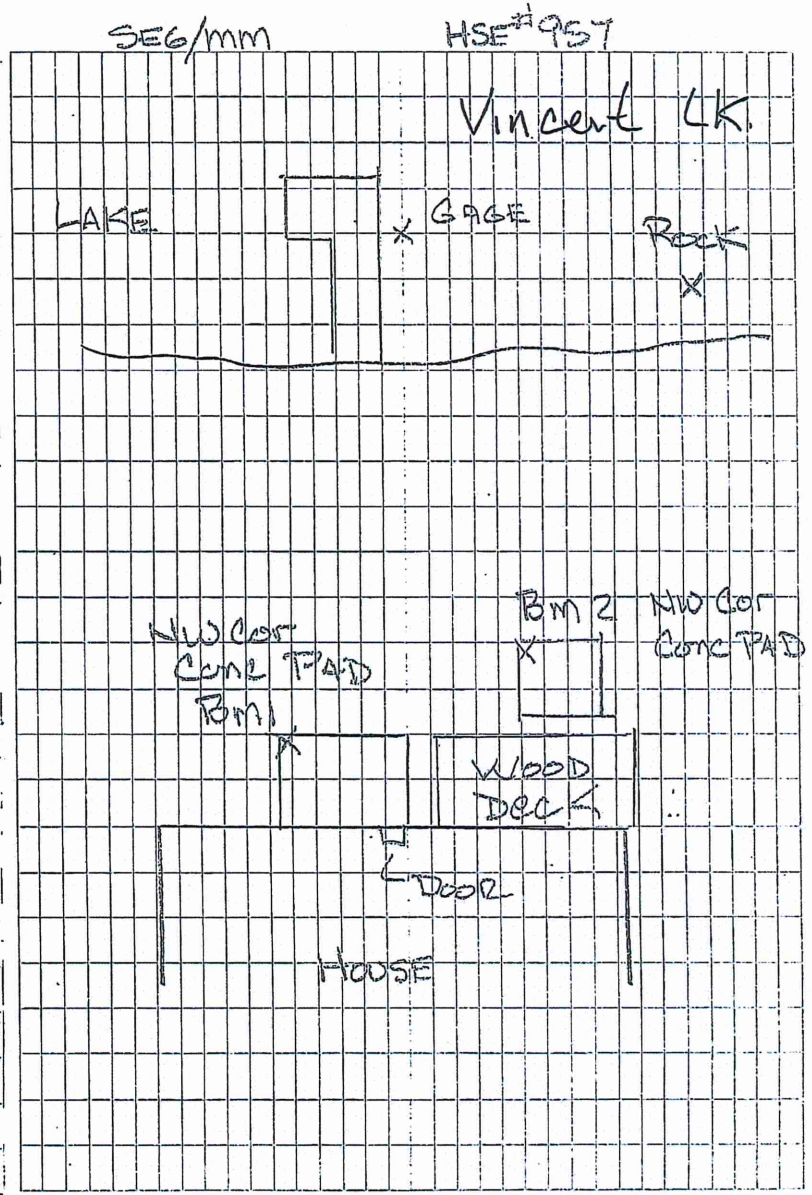
Equipment Maintenance

Replace bolts/screws on staff gauge?	Yes ☐ No ☐	Date: _____	Name: _____
Replace gauge plate on staff gauge?	Yes ☐ No ☐	Date: _____	Name: _____
Replace post or wooden board?	Yes ☐ No ☐	Date: _____	Name: _____

CLOUDY/HUMID 6-28-2019

STA	BS		FS		
WATER	8.80				1189.48'
		1198.28'			
Bm 1			2.07	6.73	1196.21'
Bm 2			2.43	6.37	1195.85'
Bm 3			7.22	1.58	1191.06'
WATER	8.45				
		1197.93			
Bm 1			1.73	6.72	1196.20'
Bm 2			2.09	6.36	1195.84'
Bm 3			6.87	1.58	1191.06'

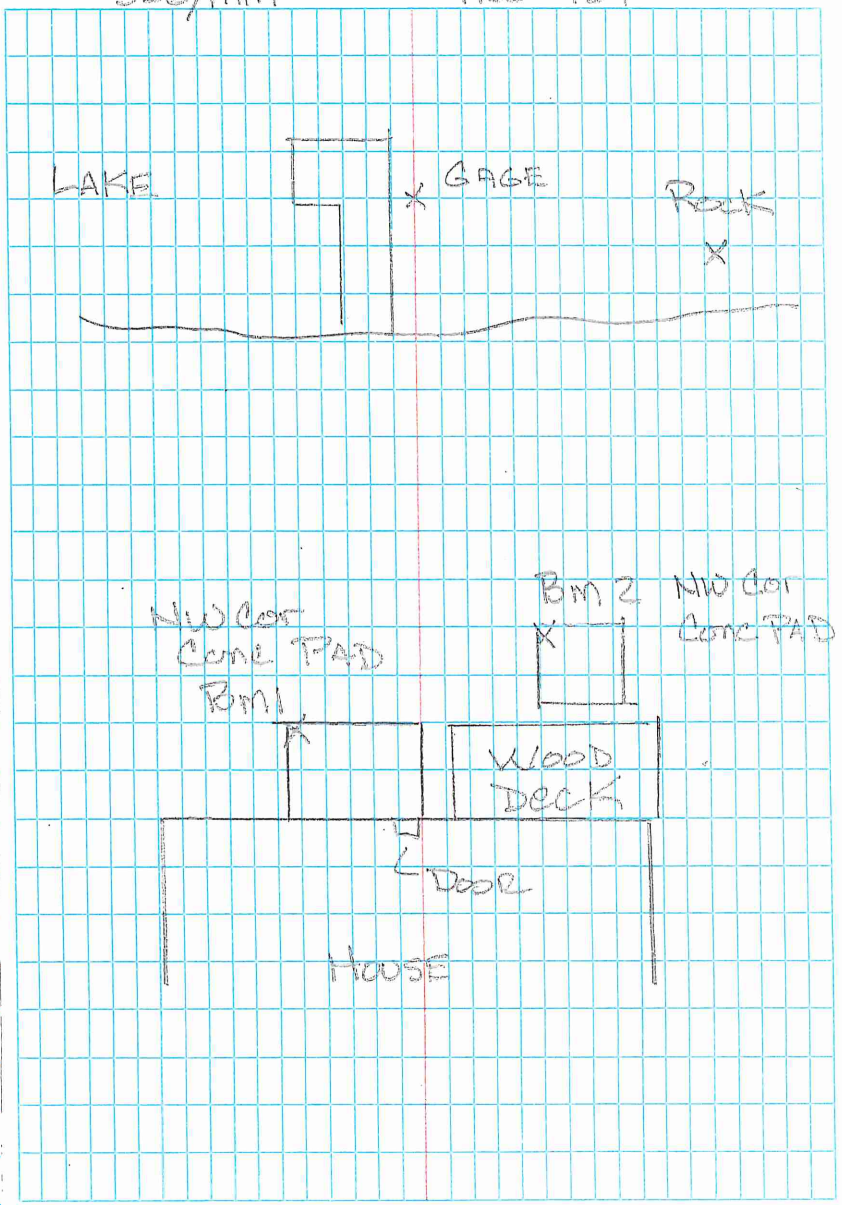
SEG/mm HSE# 957



Cloudy/Humid 6-28-2019

STA	BS		FS		
WATER	8.80			1189.48'	
		1198.28'			
Bm 1			2.07	6.73	1196.21'
Bm 2			2.43	6.37	1195.85'
Bm 3			7.22	1.58	1191.06'
WATER	8.45				
		1197.93			
Bm 1			1.73	6.72	1196.20'
Bm 2			2.09	6.36	1195.84'
Bm 3			6.87	1.58	1191.06'

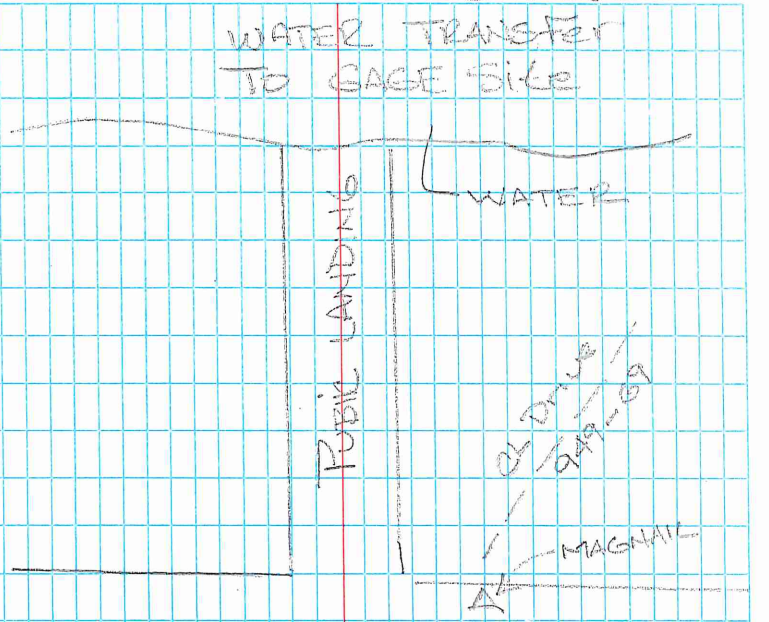
SEG/mm HSE #957



6-28-2019 SEB/MM

STA	BS		FS	ELEV
BM MAG NAIL	2.00			1200.31'
		1202.31		
WATER			12.83	1189.48'
	12.41			
		1201.89		
BM MAG NAIL			1.56	1200.33'
	14.41		14.39	

VINCENT LAKE LEVELS



MAG NAIL - Two Feet South of N. Edge of Pavt. @ Drive Extension (GPS Derived Elev.)

2020 INSTALL
6/18/2020

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Lake Information

Lake Name: Vincent Lake County: Polk

Data Collectors

Primary Data Collector Email Phone No. ( ) -

Additional Data Collector(s): SWIMS 1/22/2021

Reference Mark and Staff Gauge Information

Reference Mark #1 (RM1) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1196.21 Photograph ☐

Location Description: SAME AS 2019

Reference Mark #2 (RM2) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1195.85 Photograph ☐

Location Description: SAME AS 2019

Reference Mark #3 (RM3) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1191.06 Photograph ☐

Location Description: SAME AS 2019

Staff Gauge

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1188.31 Photograph ☐

Location Description: BOTTOM BOLT ON FACE

Date: 6-18-2020 Time: 9:00 (AM)/PM Check one: Install ☒ Midseason ☐ Removal ☐

Survey Stage 1 - Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1196.21			
Back sight 1 (BS1)	+ 1.37			
Height of Instrument (HI1)	1197.58	- Staff Gauge	9.27	= 1188.31
	HI1	- Ref Mark 2	1.75	= 1195.83
	HI1	- Ref Mark 3	6.55	= 1191.03

Survey Equations:
$HI1 = GE_{RM1} + BS1$
$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1188.31 ←			
Back sight 2 (BS2)	+ 9.09			
Height of Instrument (HI2)	1197.40	- Ref Mark 1	1.19	= 1196.21
	HI2	- Ref Mark 2	1.56	= 1195.84
	HI2	- Ref Mark 3	6.36	= 1191.04

Survey Equations:
$HI2 = CE_{SG1} + BS2$
$CE2 = HI2 - FS2$

Quality Assurance Checks:

Reference Mark 1: GE = CE2

BS1 1.37 + BS2 9.09 = 10.46

FS1 9.27 + FS2 1.19 = 10.46

QA Equations:
$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
$GE_{RM1} = CE2_{RM1}$

*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 1.42 ft ELEV 1189.69' (WATER)

Calculated Elevation 1: 1188.27

2020 Removal
9/17/2020

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Lake Information

Lake Name: Vincent Lake County: Polk

Data Collectors

Primary Data Collector | Email | Phone No. ( ) -

Additional Data Collector(s)

SWIMS 1/22/2021

Reference Mark and Staff Gauge Information

Reference Mark #1 (RM1) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1196.21 Photograph ☐

Location Description: SAME AS 2019 NW Cor Conc Pad

Reference Mark #2 (RM2) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1195.85 Photograph ☐

Location Description: SAME AS 2019 NW Cor Conc Pad

Reference Mark #3 (RM3) Reference Mark Type: _____

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1191.05 Photograph ☐

Location Description: SAME AS 2019 High Point on Rock

Staff Gauge

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1188.31 Photograph ☐

Location Description: Bottom Bolt on Face

Date: 9/17/2020 Time: 1:30 AM/PM Check one: Install ☐ Midseason ☐ Removal ☒

Survey Stage 1 – Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1196.21			
Back sight 1 (BS1)	+ 0.84			
Height of Instrument (HI1)	1197.05	- Staff Gauge	8.74	= 1188.31
	HI1	- Ref Mark 2	1.21	= 1195.84
	HI1	- Ref Mark 3	6.02	= 1191.03

Survey Equations:
$HI1 = GE_{RM1} + BS1$
$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1188.31 ←			
Back sight 2 (BS2)	+ 8.51			
Height of Instrument (HI2)	1196.82	- Ref Mark 1	0.61	= 1196.21
	HI2	- Ref Mark 2	0.98	= 1195.84
	HI2	- Ref Mark 3	5.79	= 1191.03

Survey Equations:
$HI2 = CE_{SG1} + BS2$
$CE2 = HI2 - FS2$

Quality Assurance Checks:

Reference Mark 1:	BS1 0.84	FS1 8.74		QA Equations:
GE = CE2	BS2 + 8.51	FS2 + 0.61		$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
	9.35	= 9.35		$GE_{RM1} = CE2_{RM1}$

*Accept Survey Stage 1 If QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 0.76 ft

WATER ELEV 1189.02

Calculated Elevation 1: 1188.26

6/26/2021

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Top of Board
Bolt Bored

Lake Information

Lake Name: Vincent LAKE County: Polk

Data Collectors

Primary Data Collector Email Phone No. ( ) -

Additional Data Collector(s)

Reference Mark and Staff Gauge Information

Reference Mark #1 (RM1)
Reference Mark Type:
Latitude: Longitude: Mean Sea Level Yes ☐ No ☒ Elevation: 1196.21 Photograph ☐ Δ 0
Location Description: NW Cor Concrete PAD

Reference Mark #2 (RM2)
Reference Mark Type:
Latitude: Longitude: Mean Sea Level Yes ☐ No ☒ Elevation: 1195.83 Photograph ☐ Δ .01
Location Description: NW Cor Conc. PAD

Reference Mark #3 (RM3)
Reference Mark Type:
Latitude: Longitude: Mean Sea Level Yes ☐ No ☐ Elevation: 1191.06 Photograph ☐ Δ .02
Location Description: HIGH POINT ON Rock

Staff Gauge
Latitude: Longitude: Mean Sea Level Yes ☒ No ☐ Elevation: 1190.36 Photograph ☐
Location Description:

Date: 6/26/2021 Time: 9:30 AM/PM Check one: Install ☒ Midseason ☐ Removal ☐

Survey Stage 1 – Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1196.21			
Back sight 1 (BS1)	+ 1.28			
Height of Instrument (HI1)	1197.49	- Staff Gauge	7.13	= 1190.36
	HI1	- Ref Mark 2	1.65	= 1195.84
	HI1	- Ref Mark 3	6.48	= 1191.01

Survey Equations:
$HI1 = GE_{RM1} + BS1$
$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1190.36			
Back sight 2 (BS2)	+ 7.31			
Height of Instrument (HI2)	1197.67	- Ref Mark 1	1.46	= 1196.21
	HI2	- Ref Mark 2	1.83	= 1195.84
	HI2	- Ref Mark 3	6.63	= 1191.04

Survey Equations:
$HI2 = CE_{SG1} + BS2$
$CE2 = HI2 - FS2$

Quality Assurance Checks:

Reference Mark 1:
GE = CE2

BS1 1.28 FS1 7.13
BS2 + 7.31 FS2 + 1.46
8.59 = 8.59

Calculated Elevation 1 = 1186.575

QA Equations:
$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
$GE_{RM1} = CE2_{RM1}$

*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 1.46 ft

1188.035
1188.03

.51
.48

1188.04
① WATER 9.45
② 9.64

Swim

Wisconsin DNR – Lake Level Monitoring 9/23/2021 10:12 AM

Staff Gauge Survey Data Sheet

Lake Information

Lake Name: Vincent LAKE County: POLK

Data Collectors

Primary Data Collector | Email | Phone No. ( ) -

Additional Data Collector(s)

Reference Mark and Staff Gauge Information

Reference Mark #1 (RM1)
Reference Mark Type:
Latitude: Longitude: Mean Sea Level Yes ☐ No ☒ Elevation: 1196.21 Photograph ☐
Location Description: (GONE) NW Cor Concrete PAD DESTROYED

Reference Mark #2 (RM2)
Reference Mark Type:
Latitude: Longitude: Mean Sea Level Yes ☐ No ☒ Elevation: 1195.85 Photograph ☐
Location Description: NW Cor Conc. PAD

Reference Mark #3 (RM3)
Reference Mark Type:
Latitude: Longitude: Mean Sea Level Yes ☐ No ☐ Elevation: 1191.06 Photograph ☐
Location Description: HIGH POINT ON ROCK

Staff Gauge
Latitude: Longitude: Mean Sea Level Yes ☒ No ☐ Elevation: Photograph ☐
Location Description:

Date: Time: AM/PM Check one - Install ☐ Midseason ☒ Removal ☐

Survey Stage 1 - Instrument at first height*

	Reference ~~Mark 1~~ RM2		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1195.85			
Back sight 1 (BS1)	+ 1.63			
Height of Instrument (HI1)	1197.48	- Staff Gauge	7.10	= 1190.38
	HI1	- Ref Mark 2		=
	HI1	- Ref Mark 3	6.43	= 1191.05

Survey Equations:
$HI1 = GE_{RM1} + BS1$
$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1190.38 ←			
Back sight 2 (BS2)	+ 6.86			
Height of Instrument (HI2)	1197.24	- Ref Mark 1		=
	HI2	- Ref Mark 2	1.39	= 1195.85
	HI2	- Ref Mark 3	6.20	= 1191.04

Survey Equations:
$HI2 = CE_{SG1} + BS2$
$CE2 = HI2 - FS2$

Quality Assurance Checks

Reference Mark 1: GE = CE2

BS1 1.65 FS1 7.10
BS2 + 6.86 FS2 + 1.39
8.99 = 8.99

Calculated Elevation 1 = 1186.6

QA Equations:
$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
$GE_{RM1} = CE2_{RM1}$

SWIMS

*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 0.95 ft

WATER (1) 9.92 1187.56 WATER (2) 9.69 1187.54

INSTALL TOP OF BOARD 7/12/2022 Sumns 10/7/22

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Lake Information

Lake Name Vincent LAKE County POLK

Data Collectors

Primary Data Collector | Email | Phone No. ( )

Additional Data Collector(s)

Reference Mark and Staff Gauge Information

Bm 1 WAS Destroyed

Reference Mark #1 (RM1) Reference Mark Type:

Latitude: Longitude: Mean Sea Level Yes ☒ No ☐ Elevation: 1196.21 Photograph ☐

Location Description: (Gone) SAME AS 2019 NW Cor Conc Pad

Reference Mark #2 (RM2) Reference Mark Type:

Latitude: Longitude: Mean Sea Level Yes ☒ No ☐ Elevation: 1195.85 Photograph ☐

Location Description: SAME AS 2019 NW Cor Conc Pad

Reference Mark #3 (RM3) Reference Mark Type:

Latitude: Longitude: Mean Sea Level Yes ☒ No ☐ Elevation: 1191.05 Photograph ☐

Location Description: SAME AS 2019 High Point on Rock

Staff Gauge

Latitude: Longitude: Mean Sea Level Yes ☒ No ☐ Elevation: Photograph ☐

Location Description:

Date: 7/12/2022 Time: 9:30 AM Check one: Install ☒ Midseason ☐ Removal

Survey Stage 1 – Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1195.85 (Rm2)			TOP of BOARD
Back sight 1 (BS1)	+ 1.93			
Height of Instrument (HI1)	1197.78	- Staff Gauge	7.55	= 1190.23
	HI1	- Ref Mark 2		=
	HI1	- Ref Mark 3	6.73	= 1191.05

Survey Equations:
$HI1 = GE_{RM1} + BS1$
$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1190.28 ←			
Back sight 2 (BS2)	+ 7.91			
Height of Instrument (HI2)	1198.19	- Ref Mark 1/2	2.29	= 1195.85
	HI2	- ~~Ref Mark 2~~		=
	HI2	- Ref Mark 3	7.08	= 1191.06

Survey Equations:
$HI2 = CE_{SG1} + BS2$
$CE2 = HI2 - FS2$

Quality Assurance Checks

Reference Mark 1: BS1 1.93 FS1 7.55
GE = CE2 BS2 + 7.91 FS2 + 2.29
9.84 = 9.84

QA Equations:
$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
$GE_{RM1} = CE2_{RM1}$

*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 1.00 ft

Calculated Elevation 1 = 1186.465

WATER 10.31 1187.47 WATER 10.68 1187.46

Removal

Top of Board

9:30 Am

Sums 10/7/22

9/29/2022

Wisconsin DNR – Lake Level Monitoring

Staff Gauge Survey Data Sheet

Lake Information

Lake Name: Vincent Lake County: Polk

Data Collectors

Primary Data Collector Email Phone No. ( ) -

Additional Data Collector(s)

Reference Mark and Staff Gauge Information

BM1 Destroyed

Reference Mark #1 (RM1) Reference Mark Type:

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1196.24 Photograph ☐

Location Description: SAME AS 2019 NW Cor Conc PAD

Reference Mark #2 (RM2) Reference Mark Type:

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1195.85 Photograph ☐

Location Description: SAME AS 2019 NW Cor Conc PAD

Reference Mark #3 (RM3) Reference Mark Type:

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation: 1191.06 Photograph ☐

Location Description: SAME AS 2019 High Point on Rock

Staff Gauge

Latitude: _____ Longitude: _____ Mean Sea Level Yes ☒ No ☐ Elevation. _____ Photograph ☐

Location Description: _____

Date: _____ Time: _____ Check one: Install ☐ Midseason ☐ Removal ☒

Survey Stage 1 – Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)
Given Elevation (GE_{RM1})	1195.85 Rm2			
Back sight 1 (BS1)	+ 1.54			
Height of Instrument (HI1)	1197.39	- Staff Gauge	1190.24	= 7.15 Gauge
	HI1	- Ref Mark 2		=
	HI1	- Ref Mark 3	1190.62	= 6.33 Rock
			1191.06	

Survey Equations:
$HI1 = GE_{RM1} + BS1$
$CE1 = HI1 - FS1$

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)
Calculated Elevation1	1190.24			
Back sight 2 (BS2)	+ 6.99			
Height of Instrument (HI2)	1197.23	- Ref Mark 1		=
	HI2	- Ref Mark 2	1195.85	= 1.38 Rm2
	HI2	- Ref Mark 3	1191.07	= 6.17 Rock

Survey Equations:
$HI2 = CE_{SG1} + BS2$
$CE2 = HI2 - FS2$

Quality Assurance Checks

Reference Mark 1: BS1 _____ FS1 _____

GE = CE2

BS2 + _____ FS2 + _____

[ ] = [ ]

QA Equations:
$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
$GE_{RM1} = CE2_{RM1}$

*Accept Survey Stage 1 if QA checks within 0.01 ft. Use calculated elevations 1 for the rest of the season unless the gauge moves.

Lake Level Reading: 0.48 ft

Calculated Elevation 1 = 1186.48

WATER 10.43 1186.96

WATER 10.27 1186.96