Lake Information

Lake Name __Bone 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: __45-31-19.63__ Longitude: __92-22-42.567__

Reference Mark Type: __Concrete corner SW__

Mean Sea Level Yes ☐ No ☐ Elevation: __1155.22__ Photograph ☐

Location Description: __SW corner of concrete stoop__

Reference Mark #2 (RM2)

Latitude: __45-31-19.86__ Longitude: __92-22-43.011__

Reference Mark Type: __Concrete corner SW__

Mean Sea Level Yes ☐ No ☐ Elevation: __1155.01__ Photograph ☐

Location Description: __SW corner of concrete patio @ joint of curve begins__

Reference Mark #3 (RM3)

Latitude: __45-31-20.05__ Longitude: __92-22-43.011__

Reference Mark Type: __Concrete corner NW__

Mean Sea Level Yes ☐ No ☐ Elevation: __1155.02__ Photograph ☐

Location Description: __NW corner of concrete patio @ joint of curve ends__

Staff Gauge

Latitude: _____ Longitude: _____

Mean Sea Level Yes ☐ No ☐ Elevation: __1150.61__ Photograph ☐

Location Description: _____

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

Survey Stage 1 - Instrument at first height*

	Reference Mark 1		Fore sight (FS1)	Calculated Elevation (CE1)	Water FS1 6.60 Elev. = 1151.92
Given Elevation (GE$_{RM1}$)	1155.22				
Back sight 1 (BS1)	+ 3.30				**Survey Equations:**
Height of Instrument (HI1)	1158.52	- Staff Gauge	7.91	= 1150.61	$HI1 = GE_{RM1} + BS1$
	HI1	- Ref Mark 2	3.50	= 1155.02	$CE1 = HI1 - FS1$
	HI1	- Ref Mark 3	3.50	= 1155.02	

Survey Stage 2 – Reset instrument at different height

	Staff Gauge		Fore sight (FS2)	Calculated Elevation (CE2)	
Calculated Elevation1	1150.61				
Back sight 2 (BS2)	+ 7.85				**Survey Equations:**
Height of Instrument (HI2)	1158.46	- Ref Mark 1	3.25	= 1155.21	$HI2 = CE_{SG1} + BS2$
	HI2	- Ref Mark 2	3.45	= 1155.01	$CE2 = HI2 - FS2$
	HI2	- Ref Mark 3	3.45	= 1155.01	

Quality Assurance Checks:

Reference Mark 1:	BS1 __3.30__	FS1 __7.91__	**QA Equations:**
GE = CE2	BS2 + __7.85__	FS2 + __3.25__	$BS1 + BS2 = FS1_{SG} + FS2_{RM1}$
	__11.15__ =	__11.16__	$GE_{RM1} = CE2_{RM1}$

*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.
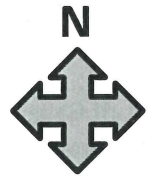
EGAD # 3200-2018-45

WISCONSIN DEPT. OF NATURAL RESOURCES

Staff Gauge Survey Data Sheet

Lake Level Reading: ___1.32_____ ft

Site Diagram (including Staff Gauge and Reference Marks)

N

Notes

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Data Management

Survey Data 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: _____

WISCONSIN
DEPT. OF NATURAL RESOURCES