

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-18041
Exam Date: 11/17/2020

1. Current Owner:
KOOTENAI COUNTY SOLID WASTE 3650 N RAMSEY RD COEUR D ALENE ID 83815
2. Accompanied by: Laureen Chaffin and John Phillips
Phone No: 208-446-1430
Address: Same as above
Relationship to permit Holder: Permit holder's representatives

3. **SOURCE:**
RUNOFF

Tributary
SINKS

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-15434	RUNOFF	INDUSTRIAL STORAGE, INDUSTRIAL FROM STORAGE, and FIRE PROTECTION STORAGE	PERMIT IN PROCESS FOR LICENSING
95-18045	GROUNDWATER	INDUSTRIAL, FIRE PROTECTION	PERMIT IN PROCESS FOR LICENSING

Comments: Right 95-15434 is the permit from which 95-18041 was split from; 95-15434 uses runoff water captured in ponds not associated with this right's ponds for irrigation storage & from storage use, and fire protection storage use that overlaps this water right. Right 95-15434 is not a concern for overlap with this right, as the 5 ponds associated with 95-18041 are a separate water system than the industrial use designated under right 95-15434. Right 95-18045 uses groundwater from a well to provide water for industrial and fire protection beneficial uses that overlap this right. The Kootenai County Solid Waste facility has a separate storage reservoir for fire protection purposes along with multiple sedimentation ponds, and any additional water needs to fight an active fire is considered an exempt use, thus do not constitute an overlap concern between the two rights.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

RUNOFF NE¼ SW¼, Sec. 1, Twp 48N, Rge 05W, B.M. KOOTENAI County
 RUNOFF SW¼ NE¼, Sec. 1, Twp 48N, Rge 05W, B.M. KOOTENAI County
 RUNOFF SE¼ SW¼, Sec. 1, Twp 48N, Rge 05W, B.M. KOOTENAI County
 RUNOFF SE¼ SW¼, Sec. 1, Twp 48N, Rge 05W, B.M. KOOTENAI County
 RUNOFF SE¼ SW¼, Sec. 1, Twp 48N, Rge 05W, B.M. KOOTENAI County

Method of Determination: GPS - POD(s) are five ponds with earthen dams that collect runoff water located at:

(NESW) located at -116°55.663, 47°31.884 – Pond – RW1.

(SWNE) located at -116°55.534, 47°32.080 – Pond – RJ1.

(SESW) located at -116°55.797, 47°31.714 – Pond – RD1.

(SESW) located at -116°55.838, 47°31.758 – Pond – RD2.

(SESW) located at -116°55.857, 47°31.758 – Pond – RD3.

PLACE OF USE: WILDLIFE STORAGE and FIRE PROTECTION STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
48N	05W	1			X						X			X					

Method of Determination: Field exam and Arcmap aerial imagery

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

☒ Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be

☒ 1:24,000 or greater.

☒ Aerial Photo Attached (required for irrigation of 10+ acres).

☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
N/A					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: N/A

E. FLOW CALCULATIONS

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$

2. Volume Calculations for Other Uses:

See 5ea attached pond analysis worksheets

G. NARRATIVE/REMARKS/COMMENTS

This WR was split from 95-15434, and accounts for five (5) ponds located at the Kootenai County Solid Waste Facility that are used solely for wildlife storage and fire protection storage. The ponds associated with this WR were split as they are not incorporated in the industrial beneficial use nor irrigation use water systems designated in right 95-15434.

Field exam performed on 6/5/2020 with the applicant's representatives, Laureen Chaffin and John Phillips, showed 5 ponds that seasonally filled from Runoff water sources. As this is a pond storage water right without diversion to storage components, there is no diversion rate applied to this license. Five separate PODs are applied to this right, one for each pond that receives surface runoff water annually from the surrounding area on the applicant's property.

During the field exam, each pond was observed with waterfowl using the ponds. Each pond was identified on field maps, and photographs taken during the exam; at time of licensing review Arcmap aerial imagery was used to trace out each pond, excluding small islands that are located in each of the ponds, in order to determine the surface area (acres) for each pond. The maximum depths for each pond was provided by the applicant, who had completed an independent pond analysis sheet for each pond. The pond size and volume data is shown below, and results are recommended for use in licensing this water right:

WATER RIGHT 95-18041 POND ANALYSIS WORKSHEET RESULTS FOR 5 EA PONDS							
Pond Name	Surface Area (ac)	Max Depth (ft)	Average Depth (ft)	Pond Capacity (af)	Seepage Loss (af)	Evaporation Loss (af)	Total Volume Required (af)
RD3	0.3	17.5	7.0	2.1	0.3	0.6	3.0
RD2	0.3	18.75	7.5	2.3	0.3	0.6	3.2
RD1	1.2	12.5	5.0	6.0	1.3	0.6	7.9
RJ1	0.7	15.0	6.0	4.2	0.8	0.6	5.6
RW1	1.1	11.25	4.5	5.0	1.2	0.6	6.8
TOTALS	3.6			19.6	3.9	3.0	26.5

The five ponds combined produce the wildlife storage and fire protection storage POU for this water right. Pond RJ1 is part of an existing wetland mitigation area; pond RW1 was developed as a wetland mitigation area; ponds RD1, RD2, and RD3 consist of wetland areas designated by the Kootenai County Solid Waste Facility's staff as Roger's Duck Pond(s). The combined surface area for the five ponds equals 3.6 af, combined pond capacity equals 19.6 af, combined seepage and evaporation loss equals 6.9 af, and combined total volume required annually for the five ponds equals **26.5 af**, which is recommended for licensing of this right. Permit 95-15434 authorized up to 100 af of wildlife storage volume annually. The difference in permit volume and recommended licensing maximum diversion volume comes from multiple factors. When applied for, there were additional ponds that were not developed by the applicants in the permit development period, resulting in a reduction in anticipated combined annual volume value. Additionally, IDWR's pond analysis sheet uses current seepage and evaporation modeling data to accurately calculate pond volumes that resulted in lower annual volume losses for these factors. It is likely that the size of the ponds in acres was identified during the application process to include the total surface area with islands included; during licensing review, Arcmap aerial imagery was used to accurately trace out surface area that excluded each pond's islands resulting in smaller combined surface area acres applied to the pond analysis worksheet.

As this right was split from 95-15434, several conditions pertaining to irrigation and industrial uses were removed from this permit during licensing review to include 046, 077, 082, 106, 111, 01M, 26A, WD8, and X02. Condition 219 was updated to reflect the 5 pond's annual volume components. Condition 220 was updated to reflect the 5 pond's capacity (af) and size (ac). Condition 004 was added to the permit during licensing review.

Right 95-15434 is the permit from which 95-18041 was split from; 95-15434 uses runoff water captured in ponds not associated with this right's ponds for irrigation storage & from storage use, and fire protection storage use that overlaps this water right. Right 95-15434 is not a concern for overlap with this right, as the 5 ponds associated with 95-18041 are a separate water system than the industrial use designated under right 95-15434. Right 95-18045 uses groundwater from a well to provide water for industrial and fire protection beneficial uses that overlap this right. The Kootenai County Solid Waste facility has a separate storage reservoir for fire protection purposes along with multiple sedimentation ponds, and any additional water needs to fight an active fire is considered an exempt use, thus do not constitute an overlap concern between the two rights. There are no additional overlap concerns for this right.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Annual Volume</u>
WILDLIFE STORAGE	01/01 to 12/31	26.5 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	26.5 AF

Totals: 26.5 AF

2. Recommended Amendments

 Change P.D. as reflected above Add P.D. as reflected above X None

 Change P.U. as reflected above Add P.U. as reflected above X None

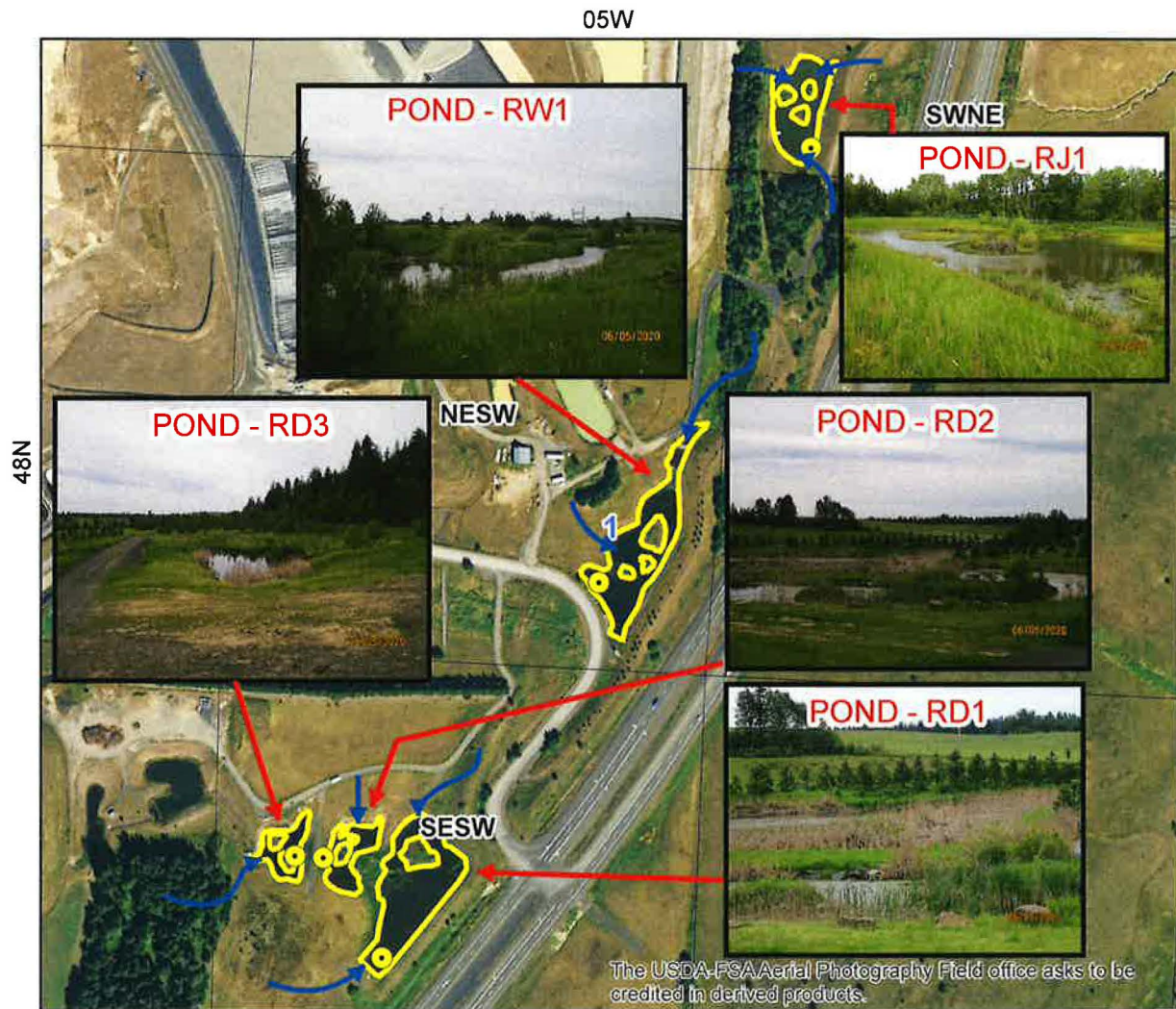
I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name  Date 12/7/2020

Reviewer  Date 12/7/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-18041

WILDLIFE STORAGE and FIRE PROTECTION STORAGE system diagram.



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.05 0.1 0.2 Miles



Total Storage Calculations

FILE NUMBER	95-18041
REVIEWER	Luke Bates
DATE	11/17/2020

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

POND - RD3		
Surface Area (AC.)	0.3	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	7	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	2.1	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.3	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.6	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	3.0	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Total Storage Calculations

FILE NUMBER	95-18041
REVIEWER	Luke Bates
DATE	11/17/2020

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

POND - RD2		
Surface Area (AC.)	0.3	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	7.5	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	2.3	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.3	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.6	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	3.2	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Total Storage Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

FILE NUMBER	95-18041
REVIEWER	Luke Bates
DATE	11/17/2020

POND - RD1

Surface Area (AC.)	1.2	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	5	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	6.0	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.

Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	1.3	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.6	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	7.9	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Total Storage Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input

Calculated value

Formula Explanations

FILE NUMBER	95-18041
REVIEWER	Luke Bates
DATE	11/17/2020

POND - RJ1

Surface Area (AC.)	0.7	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	6	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	4.2	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.

Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.8	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.6	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	5.6	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Total Storage Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

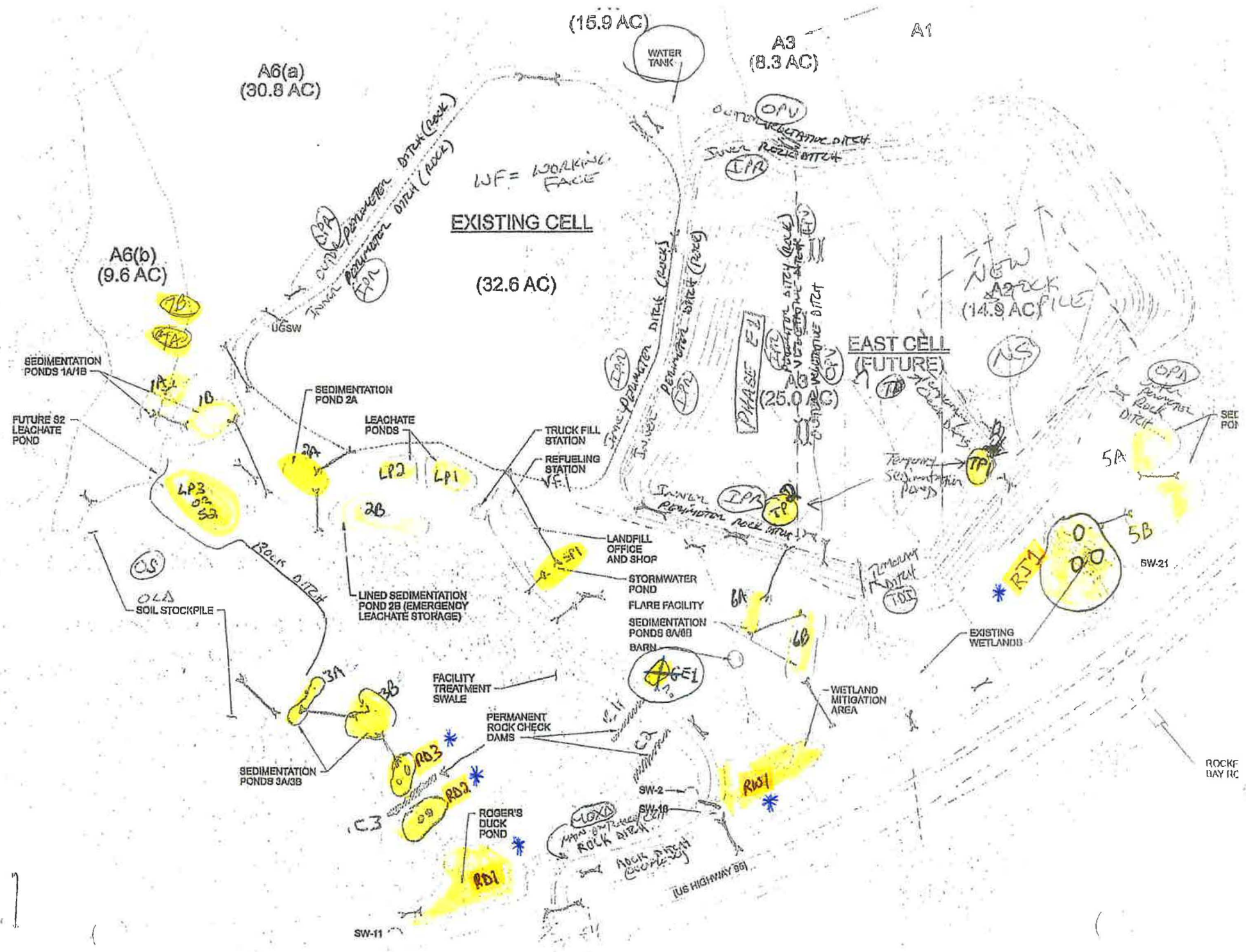
User Input
Calculated value
Formula Explanations

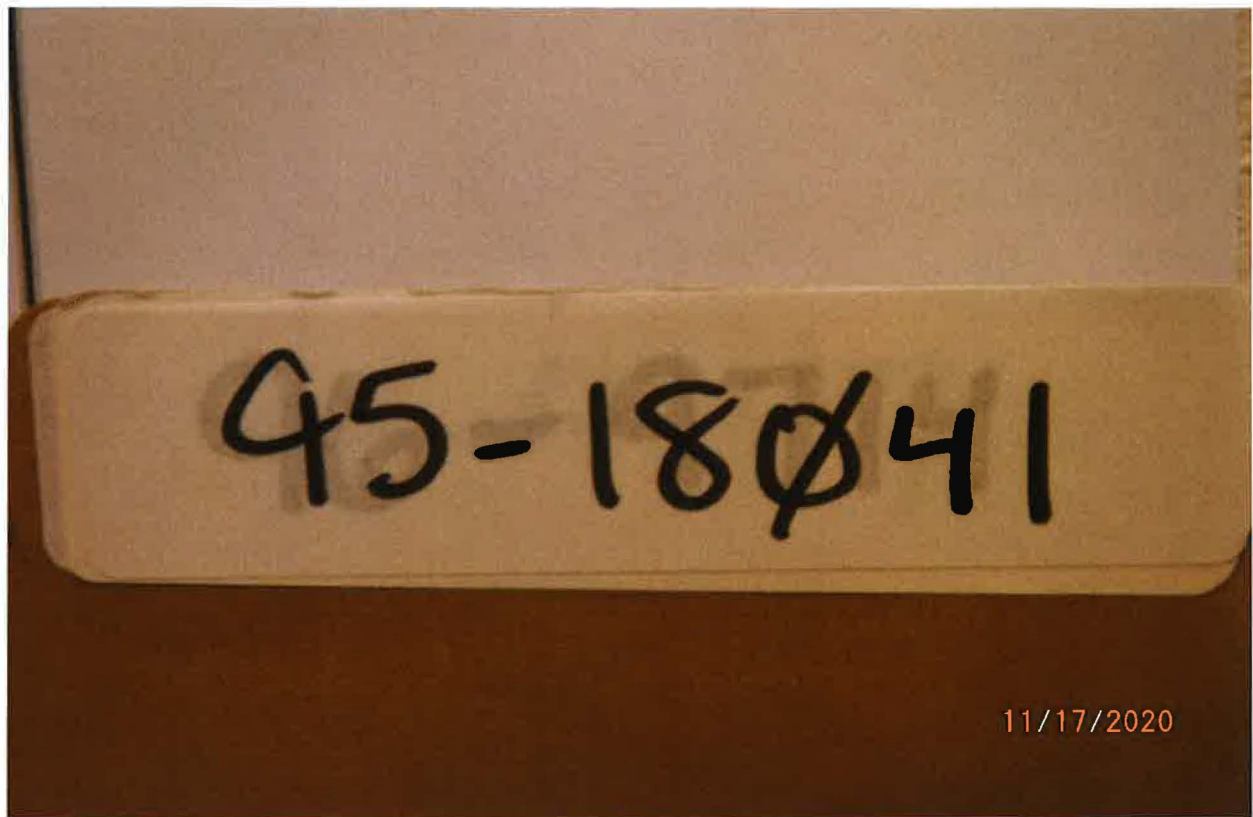
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POND - RW1

Surface Area (AC.)	1.1	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	4.5	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	5.0	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.

Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	1.2	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.6	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	6.8	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.





RIGHT 95-18041 HAS 5EA RUNOFF SOURCE POINTS OF DIVERSION, 1 ASSOCIATED WITH EACH POND.
THERE ARE NO PHOTOGRAPHS ILLUSTRATING THE RUNOFF PODs.



WILDLIFE STORAGE & FIRE PROTECTION STORAGE POU – POND – RJ1



WILDLIFE STORAGE & FIRE PROTECTION STORAGE POU – POND – RW1



WILDLIFE STORAGE & FIRE PROTECTION STORAGE POU – POND – RD1 (BACKSIDE POND IN PHOTO)



WILDLIFE STORAGE & FIRE PROTECTION STORAGE POU – POND – RD2 (FRONT SIDE POND IN PHOTO)



WILDLIFE STORAGE & FIRE PROTECTION STORAGE POU – POND – RD3