

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-7809

Exam Date: 7/20/2015

1. Current Owner: CARL COWART
BOX 332 E DEEP CREEK LOOP
NAPLES ID 83847
(208)267-1645

Or

ANN COWART
BOX 332 E DEEP CREEK LOOP
NAPLES ID 83847
(208)267-1645

2. Accompanied by: Ann Cowart at house, Brenda Keller (daughter) showed me around property

3. SOURCE

DEEP CREEK

TRIBUTARY

KOOTENAI RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

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

DEEP CREEK SW1/4NE1/4 Sec. 19, Twp 61N, Rge 01E, B.M. BOUNDARY County

DEEP CREEK NE1/4SW1/4 Sec. 19, Twp 61N, Rge 01E, B.M. BOUNDARY County

DEEP CREEK NW1/4NE1/4 Sec. 19, Twp 61N, Rge 01E, B.M. BOUNDARY County

Method of Determination: GPS and maps. POD locations at [116° 23.158, 48° 37.646 (NWNE)] [116° 23.113, 48° 37.528 (SWNE)] [116° 23.295, 48° 37.392 (NESW)]

2.

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
61N 01E 19		1.9	1.6		9.6			20.2	1.7								35.0

Total Acres: 35

Method of Determination:

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.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
	DETROIT DIESEL	75	591497		PTA 18050
	JOHN DEERE	66	TO4039D575959		

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
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N/A

2. Measurements:

E. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

Measured Method: APPLICANT WAS NOT USING WATER BECAUSE DEEP CREEK WAS VERY LOW DUE TO DROUGHT CONDITIONS. APPLICANT HAD AG RAIN BIG GUN THAT RAN AT 75 PSI WITH 0.75 INCH HEAD AND WAS RATED AT 125 GPM. APPLICANT USED 18 SECTIONS OF PIPE WITH 1 HEAD PER PIPE WITH 1 1/64 HEAD SIZE. SEE ATTACHED RAIN BIRD CHART SHOWING DISCHARGE RATE FOR THOSE SPRINKLER HEADS (6.6 GPM). HEADS WERE WORN SO RATE WILL BE ROUNDED UP TO 7.0 GPM. 18 HEADS X 7 GPM = 126 GPM. 126 + 125 = 251 GPM OR 0.56 CFS.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 35 \text{ AC} \times 3 \text{ AF} = 105 \text{ AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.56 \times 214 \times 1.9835 = 237.7$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 105$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

FIELD EXAM SHOWED APPLICANT WAS NOT WATERING THIS YEAR DUE TO VERY LOW WATER LEVELS IN DEEP CREEK. APPLICANT HAD TWO PUMPS, 75HP DETROIT DIESEL AND 66HP JOHN DEERE. APPLICANT WOULD USE DETROIT DIESEL FOR AG RAIN BIG GUN. GUN RAN AT 70 PSI WITH 0.75 INCH HEAD THAT WAS RATED FOR 125 GPM. JOHN DEERE PUMP SUPPLIED WATER TO SPRINKLER LINES THAT HAD 11/64 HEADS THAT ARE RATED AT 60 PSI AT 6.6 GPM. HEADS WERE WORN ON SPRINKLERS SO GPM WILL BE ROUNDED UP TO 7.0 GPM TO ACCOUNT FOR EXTRA LOSS FROM WORN HEADS. APPLICANT WOULD RUN A LINE OF 18 LENGTHS OF PIPE WITH 1 HEAD PER LENGTH. APPLICANT MARKED WHERE IRRIGATION OCCURED AND WHEN THAT LAND IS MAPPED OUT IT EQUALS 35 ACRES OF IRRIGATION. APPLICANT HAD 3 SEPERATE POD LOCATIONS TO MOVE PUMPS BACK AND FORTH. LICENSE WILL CHANGE 1 POD TO SHOW IT IN THE PROPER PLACE MARKED ON THE APPLICATION MAP. POD WAS INPUTED IN THE NESE BUT WAS LOCATED ON APPLICATION MAP IN THE NESW.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/01 to 10/31	0.560 CFS	105.00 AF
<u>Totals:</u>		0.560 CFS	105.00 AF

2. Recommended Amendments

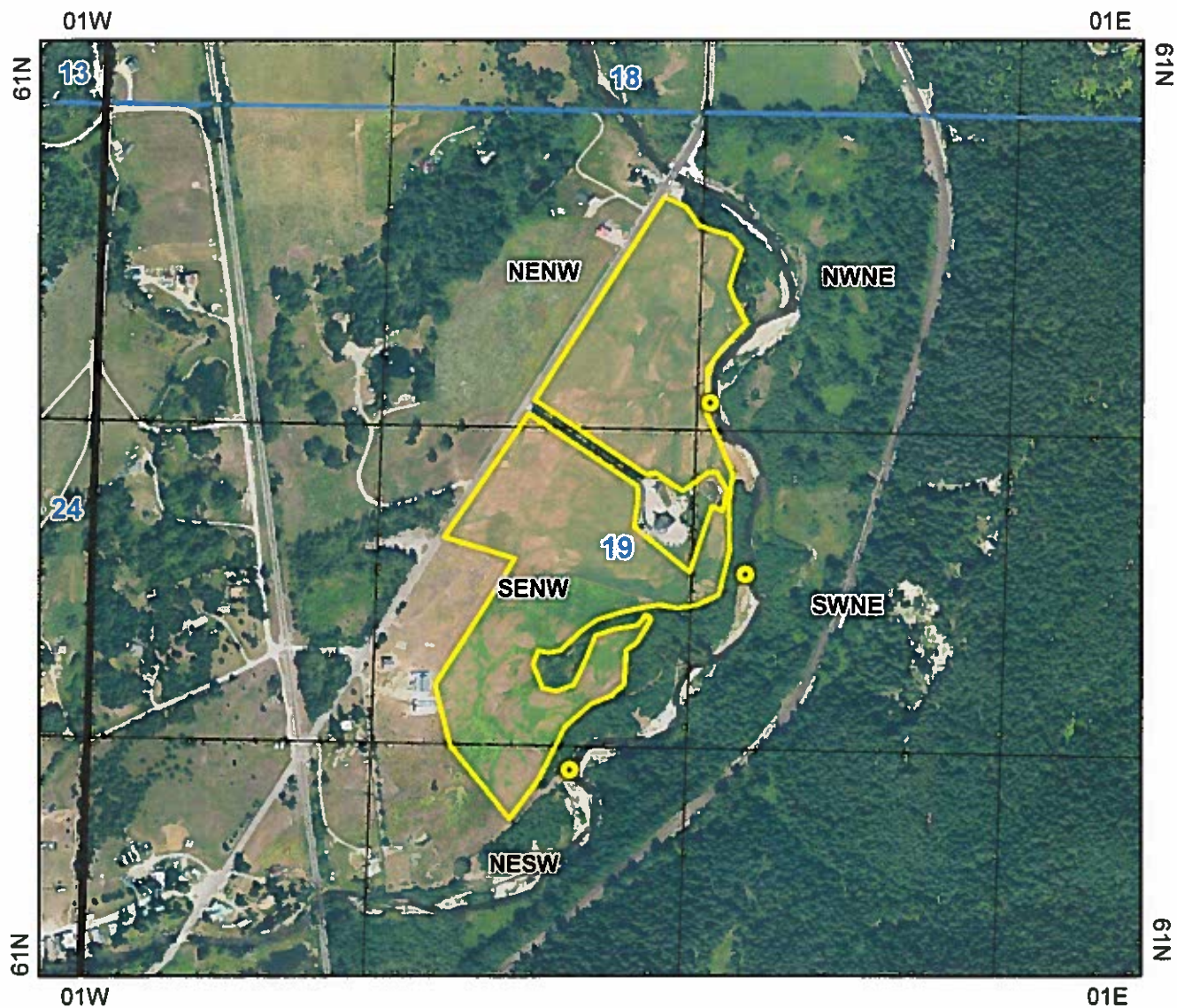
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Adam Funderil Date 1-7-2016
 Reviewer Erin Date 1-7-2016

State of Idaho
Department of Water Resources
Water Right License
98-7809



0 0.075 0.15 0.3 Miles

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



MEMORANDUM

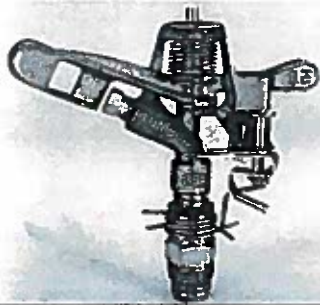
To: Water Right License 98-7809

From: Adam Frederick

Date: 01/06/16

Re: Water Right License to Appropriate the Public Water of the State of Idaho

During review for licensing IDWR staff noticed one POD was applied for and permitted for in the wrong QQ. The map that was attached with the application showed the proper QQ. License will be changed to describe one QQ as Twp 61 N, Rge 01 E, Sec 19 in the NESW instead of the NESE.



PERFORMANCE DATA

35A-TNT/35A-PJ

35A-TNT 35A-PJ

3/4" Full or Part Circle,
Brass Impact Sprinklers

Bearing: 3/4" Male NPT, Brass
Trajectory Angle: 27°
Operating Range: 30-60 psi
Flow Rate: 3.9-7.8 GPM
Radius: 42-51 ft.

FEATURES

- "Precision jet" (PJ) arm (35A-PJ)
- Standard spoon style arm also available (35A-TNT)
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- ADJ-3 Nozzles include integral break-up pin
- DAN-3 Nozzles include break-up pin and distance flap
- Full or Part Circle operation
- Two-year warranty

BENEFITS

- PJ arm reduces side splash
- Many options provide design and application flexibility
- Corrosion and grit resistant
- Built to last

Brass Straight Bore Nozzle
(ADJN-3) or (DAN-3) (Stream Height: 9 ft.)

PSI @ Nozzle	NOZZLE SIZE					
	5/32"		11/64"		3/16"	
Rad.	GPM	Rad.	GPM	Rad.	GPM	
30	42	3.90	43	4.60	44	5.50
35	43	4.20	44	5.00	46	6.00
40	44	4.50	45	5.40	47	6.40
45	44	4.70	46	5.70	48	6.80
50	45	5.00	47	6.00	49	7.20
55	45	5.20	48	6.30	50	7.50
60	46	5.40	48	6.60	51	7.80

PART NUMBERS AND ORDERING INFORMATION

Ordering Example

To order a 35A-TNT sprinkler with a 3/16" Brass Straight Bore Adjustable Nozzle the part number would be:

MAKE YOUR SPRINKLER
CHOICE FROM CHART 1

A38820-

CHOOSE NOZZLE SIZE(S)
FROM CHART 2

12

ADD THEM TOGETHER TO
CREATE THE PART NUMBER

= A38820-12

Chart 1: 35A-TNT	PART NUMBER: FIRST HALF
SPRINKLER ONLY	
Sprinkler without Nozzle	A39200
SPRINKLER WITH SINGLE NOZZLE INSTALLED	
Sprinkler with ADJN-3	A38820-
Sprinkler with KHN-3	A38810-

Chart 2	PART NUMBER: SECOND HALF		
NOZZLE	5/32"	11/64"	3/16"
Brass Straight Bore Adjustable Nozzle (10032B-) ADJN-3	10	11	12
Brass Adjustable Do-All Nozzle (100332-) DAN-3	10	-	12
Brass Keyhole Nozzle (106353-) KHN-3	10	11	12

Bold nozzle size numbers denote the most common nozzle choices.

Chart 1: 35A-PJ	PART NUMBER: FIRST HALF
SPRINKLER WITH NOZZLE INSTALLED	
Sprinkler with ADJN-3	A40613-
Sprinkler with DAN-3	A40614-



JOHN DEERE

JOHN DEERE POWER SYSTEMS
Waterloo, IA 50704-5100

Engine serial number:

Engine build date:

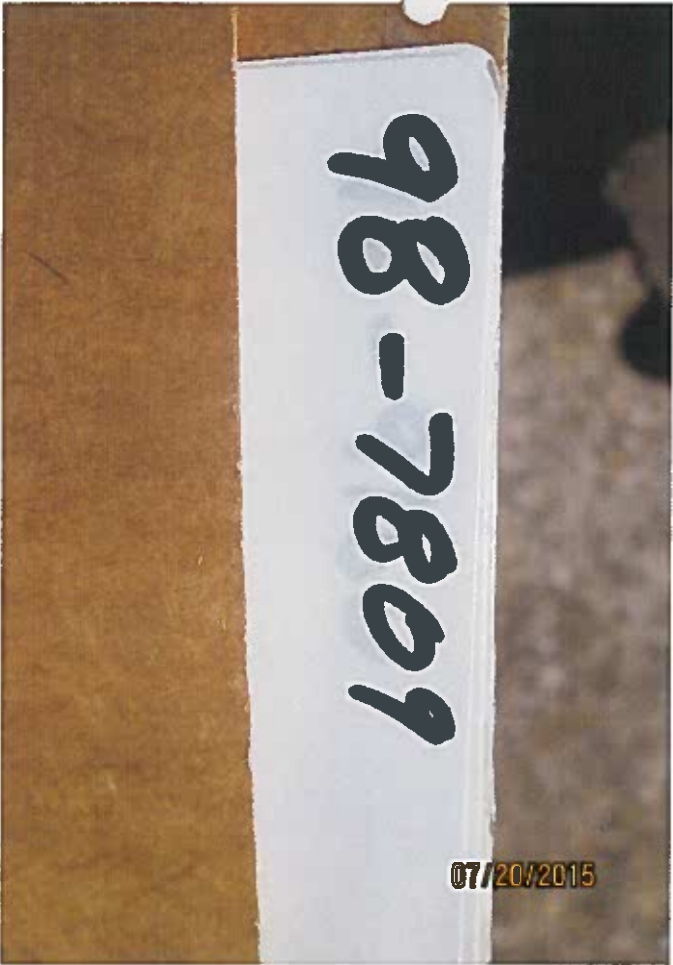
Non-Power Tech

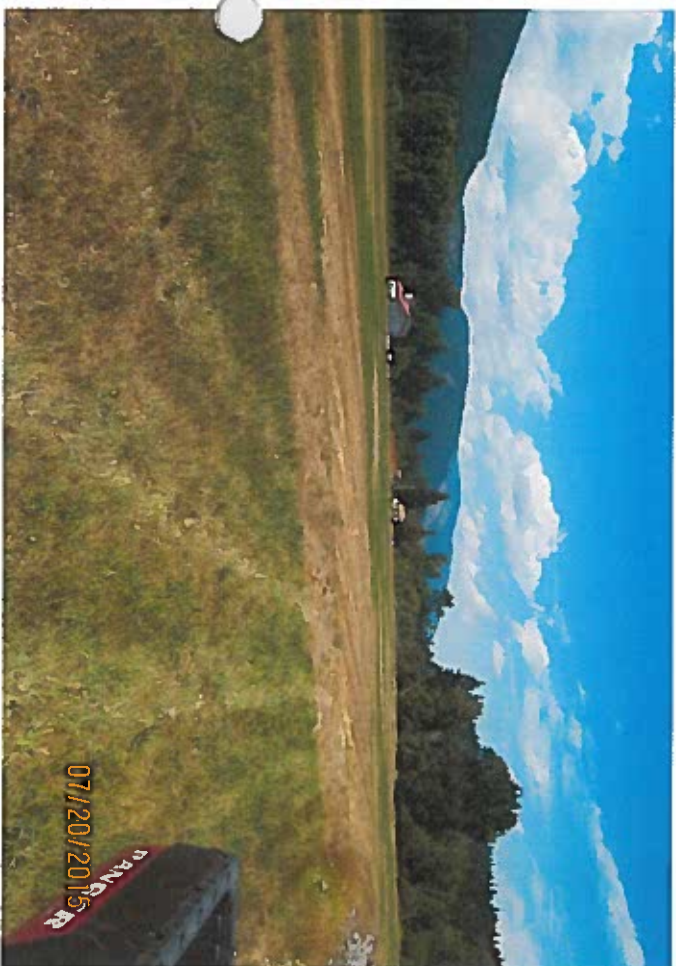
4039D 66hp (49kW) @ 1800 Gen-Set ENGINE EXHAUST EMISSIONS

Exhaust emissions levels for this gen-set engine at full load rated speed are as follows:

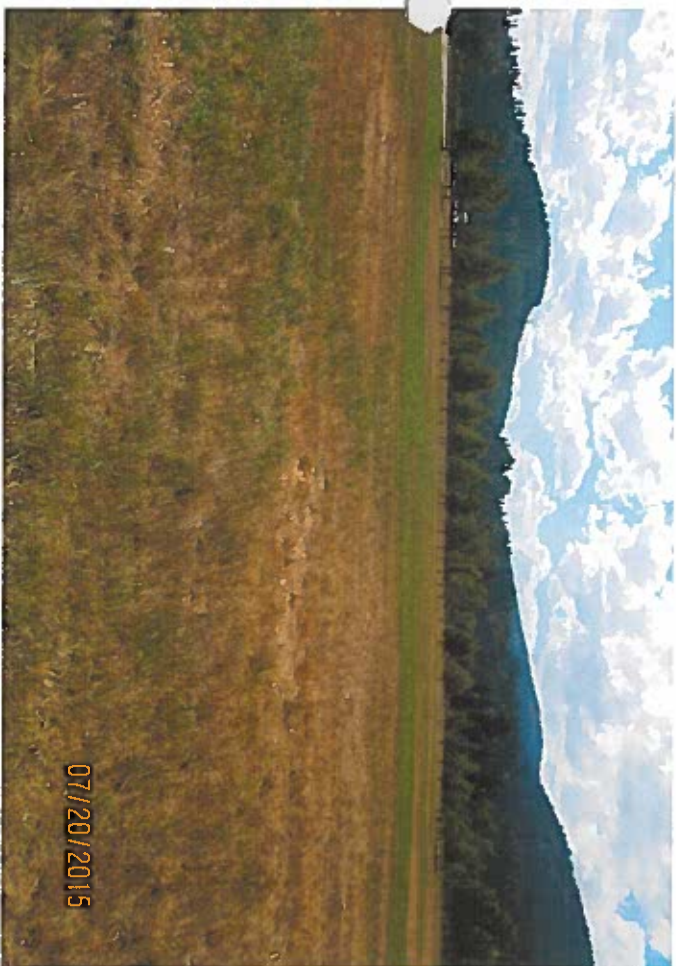
ENGINE	RPM	GRAMS/HR				EXHAUST FLOW (cubic meters per minute)	EXHAUST TEMP (degrees Celsius)	Fuel consumption at rated HP (pounds per hour)
		HP	CO	HC	N0x			
4039D	1800	66	380	23	560	9.3	625	23.3

Some of our published data is derived from measured data on similar engines. Data applies to steady state operation of the engine at full load (standby) and rated speed. N0x is measured per SAE J177 and reported as NO2. HC are the total hydrocarbons (methane basis) measured per SAE J215. CO is measured per SAE J177. Particulates are not reported as there was no steady state method defined for laboratory measurement of particulates at the time most of the engines were evaluated.





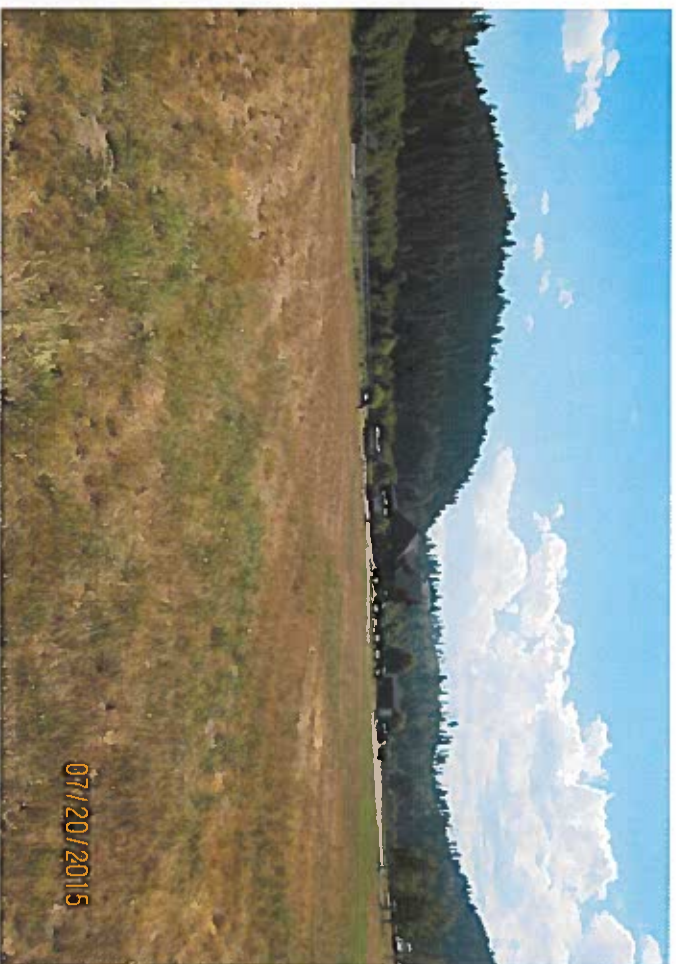
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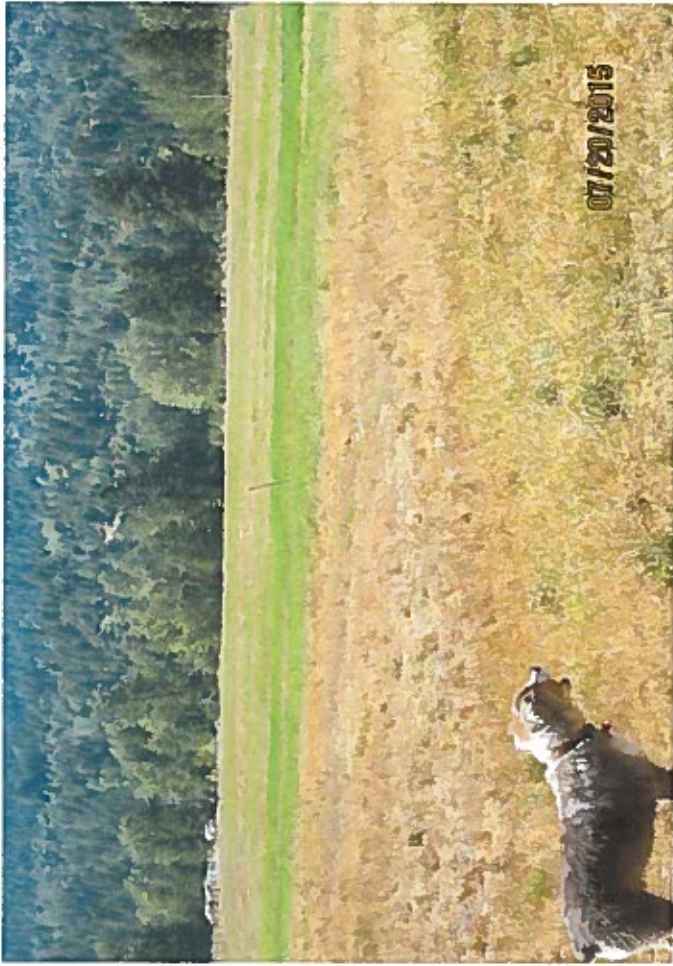
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JOHN DEERE

Engine Serial Number

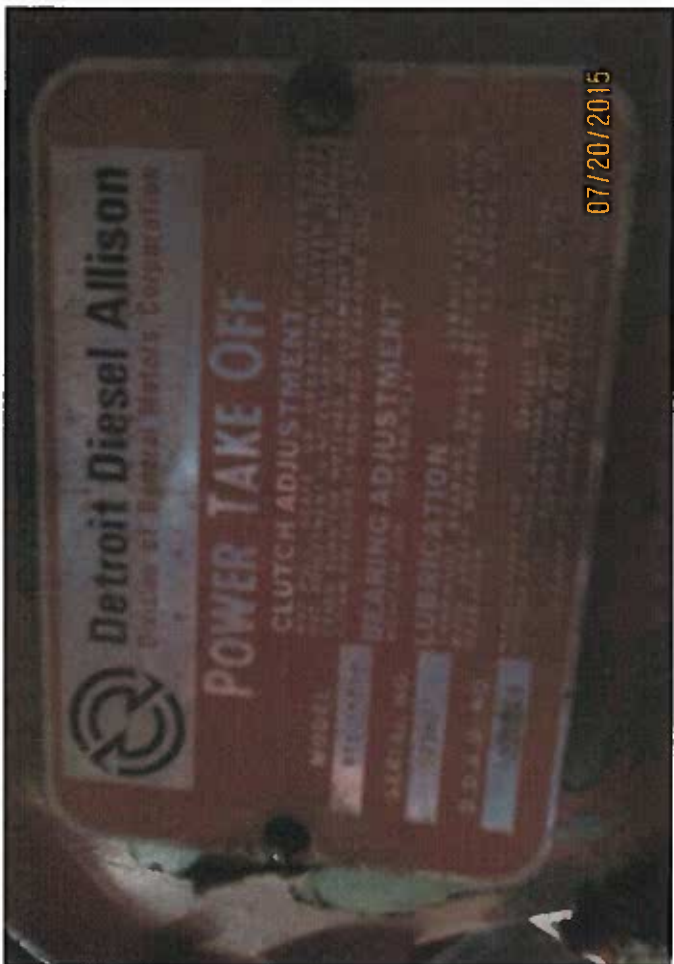
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4039DF001

DEERE & COMPANY MOLINE, ILLINOIS

07/20/2015



MODEL

MTA 150000

SERIAL NO.

504497

BIDDING NO.

1170019

CLUTCH

COVER

BEARING

LUBRICANT

WARRANTY

REPAIR

REPAIR

07/20/2015

(A) 25A X 550' WATER WELL PERFORMANCE

Nozzle Type/Size	Sprinkler Performance		System Inlet PSI	Irrigated Area Width X Length	Travel Speed - Feet Per Hour							30" Inches Pressure Head				
	PSI	GPM			PSA	40	50	75	100	125	150		200			
.63" Flat Fan Taper Range	50	70	224	76	157	X	954	1.0	0.6	0.5	0.4	0.3	0.3	0.2	0.1	0.24
	50	83	236	89	167	X	954	1.0	0.6	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	75	108	249	102	174	X	967	1.3	0.9	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	75	98	259	114	181	X	971	1.4	0.9	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	50	85	231	88	152	X	961	1.7	0.9	0.6	0.4	0.3	0.3	0.2	0.1	0.24
.75" Flat Fan Taper Range	50	97	240	87	160	X	964	1.2	1.0	0.6	0.5	0.4	0.3	0.2	0.1	0.24
	50	109	254	103	174	X	958	1.3	1.0	0.7	0.5	0.4	0.3	0.2	0.1	0.24
	75	134	268	114	180	X	974	1.3	1.0	0.7	0.5	0.4	0.3	0.2	0.1	0.24
	80	132	276	120	185	X	977	1.3	1.1	0.7	0.5	0.4	0.3	0.2	0.1	0.24
	50	110	238	95	170	X	960	1.3	1.1	0.6	0.5	0.4	0.3	0.2	0.1	0.24
.75" Flat Fan Taper Range	50	120	264	103	185	X	973	1.3	1.1	0.7	0.5	0.4	0.3	0.2	0.1	0.24
	75	153	277	113	194	X	977	1.4	1.1	0.8	0.5	0.4	0.3	0.2	0.1	0.24
	80	135	284	115	201	X	981	1.5	1.2	0.8	0.5	0.4	0.3	0.2	0.1	0.24
	50	123	258	99	181	X	970	1.4	1.1	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	50	138	274	113	191	X	975	1.5	1.2	0.6	0.4	0.3	0.3	0.2	0.1	0.24
.80" Flat Fan Taper Range	50	145	282	117	198	X	984	1.5	1.2	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	75	180	297	129	210	X	994	1.6	1.3	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	80	160	304	130	204	X	984	1.6	1.3	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	50	150	284	120	194	X	974	1.6	1.3	0.6	0.4	0.3	0.3	0.2	0.1	0.24
	50	165	304	130	204	X	984	1.6	1.3	0.6	0.4	0.3	0.3	0.2	0.1	0.24

07/20/20

07/20/2015



