PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date **November 25, 2008**

FROM: Ground Water/Hydrology Section **Mike Zwart**
Reviewer's Name

SUBJECT: Application G- **17094** Supersedes review of _____
Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review ground water applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation**.

A. GENERAL INFORMATION: **Applicant's Name**: **Munkers/Greenup** **County:** **Morrow**

A1. Applicant(s) seek(s) **0.334** cfs from 2 well(s) in the **Umatilla** Basin, **Willow Creek** subbasin Quad Map: **Lexington**

A2. Proposed use: **Irrigation, 225.9 acres** Seasonality: **March 1-October 31**

A3. Well and aquifer data **(attach and number logs for existing wells; mark proposed wells as such under logid)**:

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	MORR 50764	39371	CRB	0.334	1S/25E-33 NE-SW	2190' E, 2170' N fr SW cor S 33
2	MORR 51301	80299	CRB	0.334	1S/25E-33 SE-SW	2435' E, 160' N fr SW cor S 33
3						
4						
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	**1480**	**150**	**13**	**7/21/00**	**282**	**0-78**	**0-78**			**150**	**N/A**	**A**
2	**1520**	**75**	**70**	**10/22/05**	**250**	**0-36**	**0-36**			**150**	**N/A**	**A**

Use data from application for proposed wells.

A4. **Comments:** The application requests only 150 gpm, which is much less than the customary rate.

A5. ☒ **Provisions of the Umatilla** Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water ☐ **are**, *or* ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
Comments: _____

A6. ☐ **Well(s) #** _____ , _____ , _____ , _____ , _____ , tap(s) an aquifer limited by an administrative restriction.
Name of administrative area: _____
Comments: _____

B. GROUND WATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that ground water* for the proposed use:

a. ☐ **is** over appropriated, ☐ **is not** over appropriated, *or* ☒ **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the ground water portion of the over-appropriation determination as prescribed in OAR 690-310-130;

b. ☐ **will not** *or* ☐ **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the ground water portion of the injury determination as prescribed in OAR 690-310-130;

c. ☐ **will not** *or* ☐ **will** likely to be available within the capacity of the ground water resource; or

d. ☒ **will, if properly conditioned**, avoid injury to existing ground water rights or to the ground water resource:
   i. ☒ The permit should contain condition #(s) **7N**;
   ii. ☒ The permit should be conditioned as indicated in item 2 below.
   iii. ☐ The permit should contain special condition(s) as indicated in item 3 below;

B2. a. ☐ **Condition** to allow ground water production from no deeper than _____ ft. below land surface;

b. ☐ **Condition** to allow ground water production from no shallower than _____ ft. below land surface;

c. ☒ **Condition** to allow ground water production only from the **basalt** ground water reservoir;

d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Ground Water Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Ground water availability remarks:** Condition 7N is now being used consistently for basalt wells.

Although the well is located within five miles of the Town of Lexington's municipal well, the town does not yet have an approved Division 86 plan on file.

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1, 2	**Basalt of the Columbia River Basalt Group**	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Basalt aquifers are typically confined unless they are shallow or are in hydraulic connection with an overlying alluvial aquifer. The water levels here are above the depth where ground water was encountered.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Clarks Canyon**	**1467**	**1450**	**210**	☐	☒	☐	☐	☒
2	**1**	**Clarks Canyon**	**1450**	**1470**	**600**	☐	☒	☐	☐	☒
1	**2**	**Willow Creek**	**1467**	**1400**	**5070**	☐	☒	☐	☐	☒
2	**2**	**Willow Creek**	**1450**	**1415**	**6700**	☐	☒	☐	☐	☒
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The identified water-bearing zones below the seal of well #1 are below the beds of Clarks Canyon and Willow Creek. If the basalt is nearly horizontal, the shallowest water-bearing zone of well #2 would be exposed in the bed of Clarks Canyon within a mile downstream. If it is assumed that the WBZs of both wells can be correlated, then an approximation of the local dip of the basalt is calculated to be about 2 degrees, which is reasonable. At that dip, the shallowest water-bearing zone would not be exposed at downstream reaches of the creek.

Water Availability Basin the well(s) are located within: 30710411; 30710416

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: This section does not apply.

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													

Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													

(A) = Total Interf.												
(B) = 80 % Nat. Q												
(C) = 1 % Nat. Q												
(D) = (A) > (C)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100	%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation:

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

C5. ☐ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or ground water use under this permit can be regulated if it is found to substantially interfere with surface water:

i. ☐ The permit should contain condition #(s)_____;

ii. ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:**

References Used: Local well logs; nearby recent reviews; GW Reports 30 & 35; Lower Umatilla Basin Report, 1995, Chapter 2, Hydrogeology, by Wozniak; Bill Fujii, personal communication.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #**: _____ **Logid:** _____

D2. **THE WELL does not meet current well construction standards based upon:**
- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

D3. **THE WELL construction deficiency**:
- a. ☐ constitutes a health threat under Division 200 rules;
- b. ☐ commingles water from more than one ground water reservoir;
- c. ☐ permits the loss of artesian head;
- d. ☐ permits the de-watering of one or more ground water reservoirs;
- e. ☐ other: (specify) _____

D4. **THE WELL construction deficiency is described as follows:** _____

D5. **THE WELL**
- a. ☐ **was**, *or* ☐ **was not** constructed according to the standards in effect at the time of original construction or most recent modification.
- b. ☐ I don't know if it met standards at the time of construction.

D6. ☐ **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.

THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL

D7. ☐ Well construction deficiency has been corrected by the following actions: _____

_____ _____, 200____.
(Enforcement Section Signature)

D8. ☐ **Route to Water Rights Section (attach well reconstruction logs to this page).**

CLARKS CAN> WILLOW CR- AT MOUTH

UMATILLA BASIN

Water Availability as of 11/23/2008

Watershed ID #: 30710411

Exceedance Level: 80%

Date: 11/24/2008

Time: 5:37 PM

Water Availability Calculation | Consumptive Uses and Storages | Instream Requirements | Reservations | Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second

Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	0.22	0.08	0.14	0.00	0.00	0.14
Feb	0.93	0.21	0.72	0.00	0.00	0.72
Mar	1.88	0.74	1.14	0.00	0.00	1.14
Apr	0.80	0.49	0.31	0.00	0.00	0.31
May	0.30	0.17	0.13	0.00	0.00	0.13
Jun	0.18	0.10	0.08	0.00	0.00	0.08
Jul	0.05	0.06	-0.01	0.00	0.00	-0.01
Aug	0.02	0.04	-0.02	0.00	0.00	-0.02
Sep	0.01	0.02	-0.01	0.00	0.00	-0.01
Oct	0.00	0.01	-0.01	0.00	0.00	-0.01
Nov	0.01	0.01	0.00	0.00	0.00	0.00
Dec	0.09	0.02	0.07	0.00	0.00	0.07
Storage Acre-Feet at 50%	1,030.00	118.00	919.00	0.00	0.00	919.00

WILLOW CR> COLUMBIA R- AB RHEA CR

UMATILLA BASIN

Water Availability as of 11/23/2008

Watershed ID #: 30710416

Exceedance Level: 80%

Date: 11/23/2008

Time: 5:39 PM

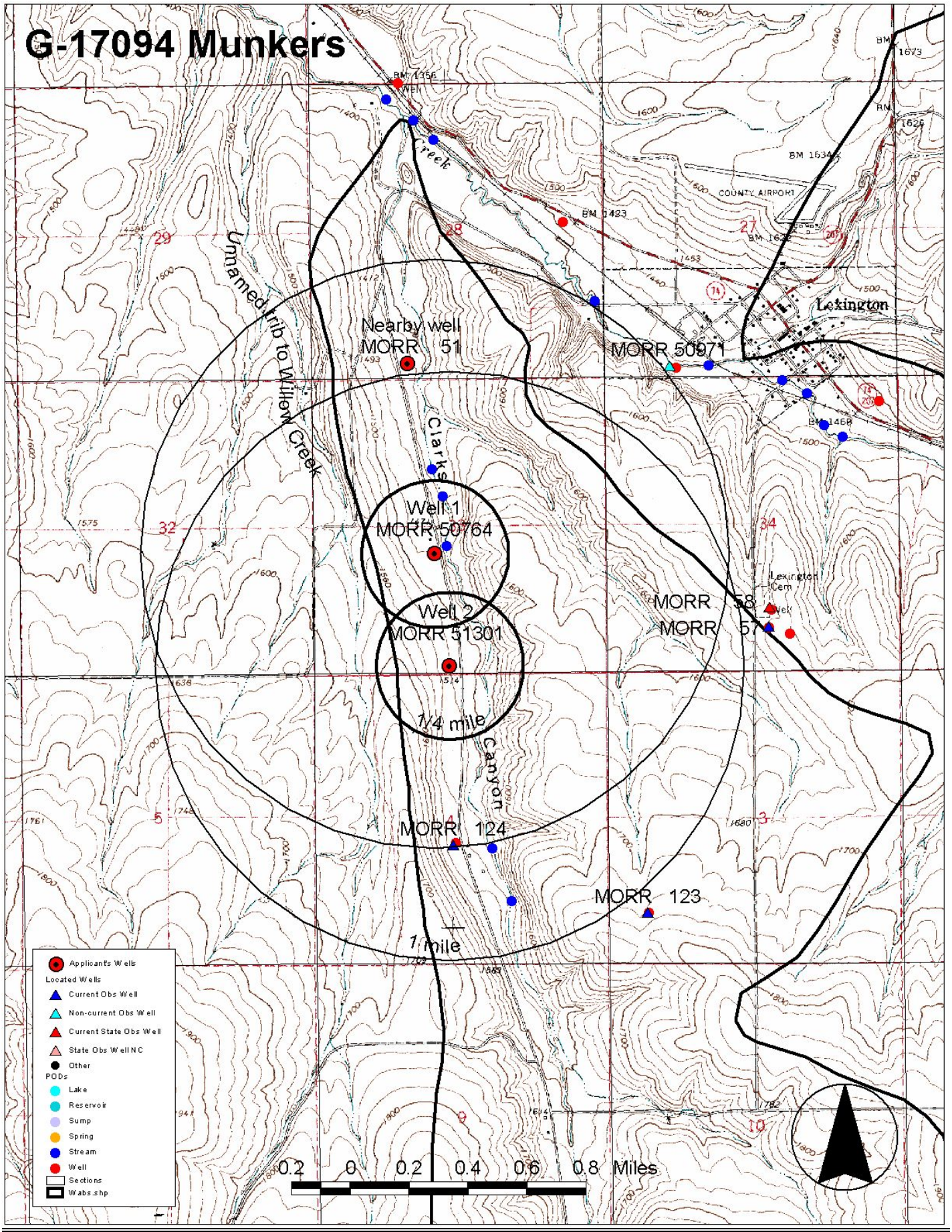
Water Availability Calculation | Consumptive Uses and Storages | Instream Requirements | Reservations | Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second

Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	7.77	7.03	0.74	0.00	0.00	0.74
Feb	16.00	16.40	-0.36	0.00	0.00	-0.36
Mar	28.30	38.80	-10.50	0.00	0.00	-10.50
Apr	32.40	27.30	5.11	0.00	0.00	5.11
May	18.70	13.60	5.05	0.00	0.00	5.05
Jun	5.89	6.17	-0.28	0.00	0.00	-0.28
Jul	1.25	2.79	-1.54	0.00	0.00	-1.54
Aug	0.56	1.95	-1.39	0.00	0.00	-1.39
Sep	0.27	1.36	-1.09	0.00	0.00	-1.09
Oct	0.24	0.86	-0.62	0.00	0.00	-0.62
Nov	2.55	1.72	0.83	0.00	0.00	0.83
Dec	5.46	3.57	1.89	0.00	0.00	1.89
Storage Acre-Feet at 50%	16,800.00	7,310.00	9,620.00	0.00	0.00	9,620.00


G-17094 Munkers
Nearby well
MORR 51
MORR 50971
Well 1
MORR 50764
Well 2
MORR 51301
1/4 mile
1 mile
MORR 124
MORR 123
MORR 58
MORR 57
Lexington
Unamed trib to Willow Creek
Clarks
Canyon
Lexington Cem
COUNTY AIRPORT
Applicant's Wells
Located Wells
Current Obs Well
Non-current Obs Well
Current State Obs Well
State Obs Well NC
Other
PODs
Lake
Reservoir
Sump
Spring
Stream
Well
Sections
Wabs.shp
0.2 0 0.2 0.4 0.6 0.8 Miles