

Minnesota Department of Health Public Health Laboratory Environmental Laboratory Section 601 Robert St. N., P.O. Box 64899 St. Paul, MN 55164-0899 651-201-5300

PWSID: 1020029 Program Code: HC Type: B

System Name: Spring Lake Park
City: Spring Lake Park

Date Received: 10/05/22 11:35 Collector Name: Terry Randall Rep. Temp. (°C): 15.5 Collector ID: None

MDH Sample Number: 22J0135-01

Location ID: E01 Collect Date: 10/05/22 Field Residual Chlorine Result: .70
Sampling Point: Terrace Park Treatment Plant Collect Time: 08:30 Field Fluoride Result: None

Matrix: Drinking Water Field pH Result: None Field PO4 Result: None

Results were produced by the Minnesota Department of Health, except where noted.

#### **Radiochemical Parameters**

Analyte	Result	Reporting Limit	Counting Uncertainty	Units	Batch	Prepared	Analyzed	Init.	Method	Qualifiers
Gross Alpha	7.8	3.0	3.1208	pCi/L	B2J1127	10/28/22 15:42	12/06/22 00:00	JJF	EPA 900.0	
Radium-226	1.7	1.0	0.6129	pCi/L	B2K0576	11/07/22 11:54	12/05/22 18:27	SAP	EPA 903.0 Rev 1/ 904.0	
Radium-228	2.4	1.0	0.7806	pCi/L	B2K0576	11/07/22 11:54	12/01/22 18:05	SAP	EPA 903.0 Rev 1/ 904.0	

#### MDH Sample Number: 22J0135-02

Location ID: E05 Collect Date: 10/05/22 Field Residual Chlorine Result: .70

Sampling Point: Arthur Street Treatment Plant

Collect Time: 08:45

Matrix: Drinking Water

Field Fluoride Result: None

Field pH Result: None

Field PO4 Result: None

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#### **Radiochemical Parameters**

Analyte	Result	Reporting Limit	Counting Uncertainty	Units	Batch	Prepared	Analyzed	Init.	Method	Qualifiers
Gross Alpha	7.8	3.0	3.0861	pCi/L	B2J1127	10/28/22 15:42	12/06/22 00:00	JJF	EPA 900.0	
Radium-226	1.9	1.0	0.6581	pCi/L	B2K0594	11/08/22 08:48	12/01/22 14:24	KAC	EPA 903.0 Rev 1/ 904.0	
Radium-228	2.0	1.0	0.8163	pCi/L	B2K0594	11/08/22 08:48	11/30/22 16:05	KAC	EPA 903.0 Rev 1/ 904.0	

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<del>-</del>	/ Alpha/Beta	Prep									
Blank (B2J1127-BLK1)					Prepare	d: 10/28/2	22 15:42 Analyz	ed: 12/06	22 00:00		
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Gross Alpha	<	3.0	pCi/L	LOVOI	resur				Liiii	JJF	
LCS (B2J1127-BS1)					Prepare	d: 10/28/2	22 15:42 Analyz	ed: 12/06	/22 00:00		
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Gross Alpha	12.4	3.0	pCi/L	13.92	Result	89	70-130		LIIIII	JJF	
Duplicate (B2J1127-DUP1)		Source: 22	12120-18		Prepare	d: 10/28/	22 15:42 Analyz	ed: 12/06	/22 00:00		
Analyta	Result	Reporting	Unito	Spike	Source	%REC	%REC Limits		RPD	Init.	Qualifiers
Analyte Gross Alpha	5.4	Limit 3.0	Units pCi/L	Level	Result 3.8	%KEC	70REC LITTIES	RPD 34	Limit 20	JJF	WB
Matrix Spike (B2J1127-MS1)		Source: 22	12120-17		Prepare	d: 10/28/2	22 15:42 Analyz	ed: 12/06	/22 00:00		
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
<u> </u>		LIIIII		LEVE	Nesult				LIIIII		
Gross Alpha	21.4	3.0	pCi/L	13.92	6.4	108	70-130			JJF	
				13.92	6.4	108	70-130			JJF	
Batch B2K0576 - Radiochemistry				13.92			70-130 70-130 22 11:54 Analyzo	ed: 12/05/	22 18:27	JJF	
Batch B2K0576 - Radiochemistry Blank (B2K0576-BLK1)	y Ra-226 Ra	a-228 Pre		Spike	Prepare: Source			ed: <b>12/05</b> /	RPD	JJF	Qualifiers
Batch B2K0576 - Radiochemistry Blank (B2K0576-BLK1) Analyte	y Ra-226 Ra	a-228 Pre	ер		Prepare	d: 11/07/2	22 11:54 Analyzo				Qualifiers
Gross Alpha  Batch B2K0576 - Radiochemistry  Blank (B2K0576-BLK1)  Analyte  Radium-226  Radium-228	y Ra-226 Ra Result	a-228 Pre Reporting Limit	ep Units	Spike	Prepare: Source	d: 11/07/2	22 11:54 Analyzo		RPD	Init.	Qualifiers
Batch B2K0576 - Radiochemistry Blank (B2K0576-BLK1) Analyte Radium-226	y Ra-226 Ra Result	Reporting Limit 1.0	Units	Spike	Prepare Source Result	:: 11/07/2 %REC	22 11:54 Analyzo	RPD	RPD Limit	Init.	Qualifiers
Batch B2K0576 - Radiochemistry  Blank (B2K0576-BLK1)  Analyte  Radium-226  Radium-228  LCS (B2K0576-BS1)	y Ra-226 Ra Result <	Reporting Limit 1.0 1.0	Units	Spike Level	Prepared Source Prepared Source	:: 11/07/2 %REC	22 11:54 Analyzo %REC Limits	RPD	RPD Limit 22 18:05 RPD	Init.	
Batch B2K0576 - Radiochemistry  Blank (B2K0576-BLK1)  Analyte  Radium-226  Radium-228  LCS (B2K0576-BS1)  Analyte	y Ra-226 Ra Result <	Reporting Limit 1.0 1.0	Units  PCi/L  pCi/L	Spike Level	Prepare Source Result	d: 11/07/2 %REC	22 11:54 Analyzo %REC Limits 22 11:54 Analyzo	RPD ed: 12/01/	RPD Limit	Init. SAP SAP	Qualifiers
Batch B2K0576 - Radiochemistry Blank (B2K0576-BLK1) Analyte Radium-226 Radium-228	y Ra-226 Ra Result < < Result	Reporting Limit 1.0 1.0 Reporting Limit	Units PCi/L PCi/L Units	Spike Level	Prepared Source Prepared Source	d: 11/07/2 %REC	22 11:54 Analyzo  %REC Limits  22 11:54 Analyzo  %REC Limits	RPD ed: 12/01/	RPD Limit 22 18:05 RPD	Init. SAP SAP	

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Batch B2K0576 - Radiochemistry Ra-226 Ra-228 Prep

Source   22 2275-01   Prepared:   11/07/22   11:54   Analyzed:   12/05/22   18:27	LCS (B2K0576-BS2)					Prepare	d: 11/07/2	22 11:54 Analyze	ed: 12/05/	22 18:27		
Duplicate (B2K0576-DUP1)   Source: 2212275-01   Prepared: 11/07/22 11:54   Analyzed: 12/05/22 18:27	Analyte	Result		Units			%REC	%REC Limits	RPD		Init.	Qualifiers
Duplicate (B2K0576-DUP1)   Source: 2212175-01   Source: 2212175-01   Source: 2212175-01   Source: 2212175-01   Source: 2212175-01   Source: 2212175-01   Source: Result: NREC   NREC Limits   RPD   Limit   Init.   Ouelifier   Coulifier   Coulifie	Radium-226	4.5	1.0	pCi/L	4.66		97	90-110			SAP	
Analyte Result Reporting Limit Units Spike (B2K0576-MS1)  Source: 22l2120-24 Redium-226  Analyte Result Reporting Limit Units Spike (B2K0576-MS2)  Matrix Spike (B2K0576-MS2)  Source: 22l2120-25 Redium-226  Analyte Result Reporting Limit Units Spike (B2K0576-MS2)  Source: 22l2120-25 Spike Source Result Reporting Limit Units Spike (B2K0576-MS2)  Source: 22l2120-25 Spike Source Result Reporting Limit Units Spike (B2K0576-MS2)  Source: 22l2120-25 Spike Source Result Reporting Limit Units Spike Result Reporting Limit Units Level Result Reporting Level Result Result Reporting Level Result Reporting Level Result Result Reporting Level Result Result Reporting Result	Radium-228	<	1.0	pCi/L				80-120			SAP	
Analyte Result Limit Units Level Result %REC %REC Limits RPD Limit Init. Qualifier Radium-226	Duplicate (B2K0576-DUP1)		Source: 22	12275-01		Prepare	d: 11/07/2	22 11:54 Analyze	ed: 12/05/	22 18:27		
Matrix Spike (B2K0576-MS1)   Source: 22l2120-24   Prepared: 11/07/22 11:54   Analyzed: 12/01/22 18:05   Spike   Source   Result   Reporting   Limit   Units   Level   Result   Result   Reporting   Result   Reporting   Limit   Units   Level   Result   Reporting   Result   Reporting   Result   Reporting   Limit   Units   Level   Result   Reporting   Result   Reporting   Limit   Units   Level   Result   Reporting   Result   Reporting   Limit   Units   Level   Result   Result   Reporting   Result   Result   Reporting   Limit   Units   Level   Result	Analyte	Result		Units	•		%REC	%REC Limits	RPD		Init.	Qualifiers
Source: 2212120-24   Prepared: 11/07/22 11:54   Analyzed: 12/01/22 18:05	Radium-226	1.4	1.0	pCi/L		1.2			12	20	SAP	
Analyte Result Limit Units Spike Reporting Limit Units Spike Result Reporting Limit Units Spike Result Redium-226 Radium-226 Radium-228	Radium-228	1.9	1.0	pCi/L		1.6			22	20	SAP	QT
Analyte Result Reporting Limit Units Spike Result Result Reporting Limit Units Spike Result Redium-226 Redium-226 Redium-228	Matrix Spike (B2K0576-MS1)		Source: 22	12120-24		Prepare	d: 11/07/2	22 11:54 Analyze	ed: 12/01/	22 18:05		
Matrix Spike (B2K0576-MS2)   Source: 22I2120-25   Prepared: 11/07/22 11:54   Analyzed: 12/05/22 18:27	Analyte	Result		Units			%REC	%REC Limits	RPD		Init.	Qualifiers
Matrix Spike (B2K0576-MS2)  Source: 22I2120-25  Reporting Limit Units Result Re	Radium-226	<	1.0	pCi/L		1.9		80-120			SAP	
Reporting   Result   Reporting   Limit   Units   Spike   Source   Result   Reporting   Reporting   Reporting   Limit   Units   Reporting	Radium-228	6.4	1.0	pCi/L	7.90	<	75	70-130			SAP	
Analyte Result Limit Units Level Result %REC %REC Limits RPD Limit Init. Qualifier Radium-226	Matrix Spike (B2K0576-MS2)		Source: 22	12120-25		Prepare	d: 11/07/2	22 11:54 Analyze	ed: 12/05/	22 18:27		
Batch B2K0594 - Radiochemistry Ra-226 Ra-228 Prep	Analyte	Result		Units	•		%REC	%REC Limits	RPD		Init.	Qualifiers
Batch B2K0594 - Radiochemistry Ra-226 Ra-228 Prep  Blank (B2K0594-BLK1)  Prepared: 11/08/22 08:48 Analyzed: 12/01/22 14:24  Reporting Spike Source PREC // REC // R	Radium-226	11.2	1.0	pCi/L	9.32	3.4	84	80-120			SAP	
Blank (B2K0594-BLK1)  Prepared: 11/08/22 08:48 Analyzed: 12/01/22 14:24  Reporting Spike Source RPD Reporting Spike Source RPD Init Qualifier	Radium-228	<	1.0	pCi/L		1.8		70-130			SAP	
Reporting Spike Source RPD	Batch B2K0594 - Radiochem	istry Ra-226 Ra	a-228 Pre	ep .								
Analyte ' Unite ' WEC WEC Limite DDD Init Qualifier	Blank (B2K0594-BLK1)		Danastin		0	•	d: 11/08/2	22 08:48 Analyze	ed: 12/01/			
	Analyte	Result		Units	•		%REC	%REC Limits	RPD		Init.	Qualifiers

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pCi/L

pCi/L

1.0

1.0

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Radium-226

Radium-228

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LCS (B2K0594-BS1)					Propers	d• 11/02/3	22 08:48 Analyze	-d· 11/30/	22 16:05		
200 (3211000- 201)		Reporting		Spike	Source	u. 11/00/2	22 00.40 Allaly20	a. 11/30/	RPD		
Analyte	Result	Limit	Units	Level	Result	%REC	%REC Limits	RPD	Limit	Init.	Qualifiers
Radium-228	3.2	1.0	pCi/L	3.95		80	80-120			KAC	
LCS (B2K0594-BS2)					Prepare	d: 11/08/2	22 08:48 Analyze	ed: 12/01/	22 14:24		
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Radium-226	4.9	1.0	pCi/L	4.66	Nesuit	105	90-110		LIIIIL	KAC	
Duplicate (B2K0594-DUP1)		Source: 22	J0233-01		Dronaro	d: 11/08/3	22 08:48 Analyze	ad: 12/01/	22 14:24		
	Б	Reporting		Spike	Source		_		RPD	L. 9	0
Analyte	Result	Limit	Units	Level	Result	%REC	%REC Limits	RPD	Limit	Init.	Qualifiers
Radium-226 Radium-228	1.8 1.2	1.0 1.0	pCi/L pCi/L		1.7 1.1			5 9	20 20	KAC KAC	
Matrix Spike /P2K/0504 MS4\		Source: 22	10222 02		_						
Matrix Spike (B2K0594-MS1)		Source: 22 Reporting	J0233-02	Spike	Prepare Source	d: 11/08/2	22 08:48 Analyze	ed: 11/30/	<b>22 16:05</b> RPD		
	Result	Limit	Units	Level	Result	%REC	%REC Limits	RPD	Limit	Init.	Qualifiers
Analyte				LCVCI	Nesuit				LIIIII		
	6.9	1.0	pCi/L	7.90	1.2	72	70-130		Littie	KAC	
Analyte Radium-228  Matrix Spike (B2K0594-MS2)	6.9	1.0 Source: 22			1.2		70-130 22 08:48 Analyzo	ed: 12/01/			
Radium-228	6.9 Result	Source: 22 Reporting		7.90 Spike	1.2  Prepare Source			ed: <b>12/01</b> / RPD	<b>'22 14:24</b> RPD		Qualifiers
Radium-228  Matrix Spike (B2K0594-MS2)		Source: 22	J0320-01	7.90	1.2	d: 11/08/2	22 08:48 Analyzo		22 14:24	KAC	Qualifiers M2
Radium-228  Matrix Spike (B2K0594-MS2)  Analyte	Result	Source: 22 Reporting Limit	Units	7.90 Spike Level	1.2  Prepare  Source  Result	d: <b>11/08/2</b> %REC	22 08:48 Analyzo %REC Limits		<b>'22 14:24</b> RPD	KAC	
Radium-228  Matrix Spike (B2K0594-MS2)  Analyte  Radium-226	Result	Source: 22 Reporting Limit	Units	7.90 Spike Level	1.2  Prepare  Source  Result	d: <b>11/08/2</b> %REC	22 08:48 Analyzo %REC Limits		<b>'22 14:24</b> RPD	KAC	
Radium-228  Matrix Spike (B2K0594-MS2)  Analyte  Radium-226  Data Qualifiers and Definitions	Result 11.6	Source: 22 Reporting <u>Limit</u> 1.0	Units PGi/L	7.90 Spike Level 9.32	Prepare Source Result 4.3	<b>d: 11/08/2</b> %REC 78	%REC Limits 80-120	RPD	<b>22 14:24</b> RPD Limit	Init.	
Radium-228  Matrix Spike (B2K0594-MS2)  Analyte  Radium-226  Data Qualifiers and Definitions  M2 Matrix spike and/or matrix spike	Result 11.6 (se duplicate itable.	Source: 22 Reporting <u>Limit</u> 1.0	Units  PCi/L  s low; the a	7.90 Spike Level 9.32	Prepare Source Result 4.3	%REC 78	%REC Limits 80-120	RPD	22 14:24 RPD Limit	Init.  KAC	
Matrix Spike (B2K0594-MS2)  Analyte Radium-226  Data Qualifiers and Definitions  M2  Matrix spike and/or matrix spik duplicate recovery was accept QT  RPD between sample duplicate	Result  11.6  Are duplicate itable.  tes not within	Source: 22 Reporting Limit 1.0  recovery was acceptance	Units  pCi/L  s low; the a	7.90  Spike Level 9.32	Prepare Source Result 4.3	%REC 78	%REC Limits 80-120 ol sample and/or lange for RER cor	RPD	22 14:24 RPD Limit	Init.  KAC	

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Work Order Comments

Samples were received in proper condition.

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